Developing an Adaptive Watershed Management Plan to Address Climate Change Impacts

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TECHNICAL PROPOSAL

EXECUTIVE SUMMARY

Developing an Adaptive Watershed Management Plan to Address Climate Change Impacts
The Flathead Basin Commission will expand a current watershed group by forming the Flathead Basin Advisory Council to develop a watershed plan that identifies, prioritizes and endorses a specific series of adaptive watershed management activities to improve and protect water quality and bolster the ecological resiliency of the Flathead watershed in the face of climate change impacts. Specific watershed plan components will include: (1) development of a wastewater management plan to address nutrient load reductions as per the Flathead Lake TMDL; (2) development of a drought management plan; and (3) expansion of the Aquatic Invasive Species Plan to prevent the introduction of zebra and quagga mussels into the headwaters of the Columbia Basin system, which supports the priorities of the Americas Great Outdoors (AGO) initiative, the Crown Managers Partnership, and Great Northern Landscape Conservation Cooperative (GNLCC). Project funds will be used to hire a consultant to spearhead the development of the plan which directly contributes the BOR mission to manage and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Project Duration: 2 years **Estimated completion date**: December 31, 2016

BACKGROUND DATA

The map on the following page depicts the geographic location of the watershed, including the State, county, and nearest towns.

Flathead Basin Description:
The Flathead River Basin is truly one of the unique watersheds of North America, and includes parts of three wilderness areas, a U.N. Biosphere Reserve and a World Heritage site. The creation of what today is known as the Flathead Basin can be traced to momentous geological activity that led to the formation of the Rocky Mountains 150 million years ago. About 3 million years ago, glacial activity began with a series of "ice ages" in the Northern Rockies, gradually shaping the physical character of the land and sculpting the river valleys and mountain ranges into what we today know as the Flathead Basin. Such significant geological attributes as Flathead Lake and the glaciers in Glacier National Park are living reminders of the end of the last ice age, a mere 10,000 years ago.

Located in northwest Montana and southeastern British Columbia, the watershed encompasses 8,587 square miles—approximately six million acres. The Basin is larger than the combined territory of Puerto Rico and the states of Delaware and Rhode Island. The long, north-south axis stretches 175 miles, while the maximum width is 88 miles. The Flathead River drainage is the largest tributary to the Clark Fork River, part of the extensive headwater of the Columbia River. The Flathead's three forks—North, Middle and South—together supply 80 percent of the water carried within the watershed. Other rivers in the Basin include the Stillwater, Whitefish and Swan. The Lower Flathead River—that portion below the outlet of Flathead Lake at the town of Polson—empties into the Clark Fork River at the town of Paradise at an elevation of 2,500 feet above sea level.

Flathead River Watershed

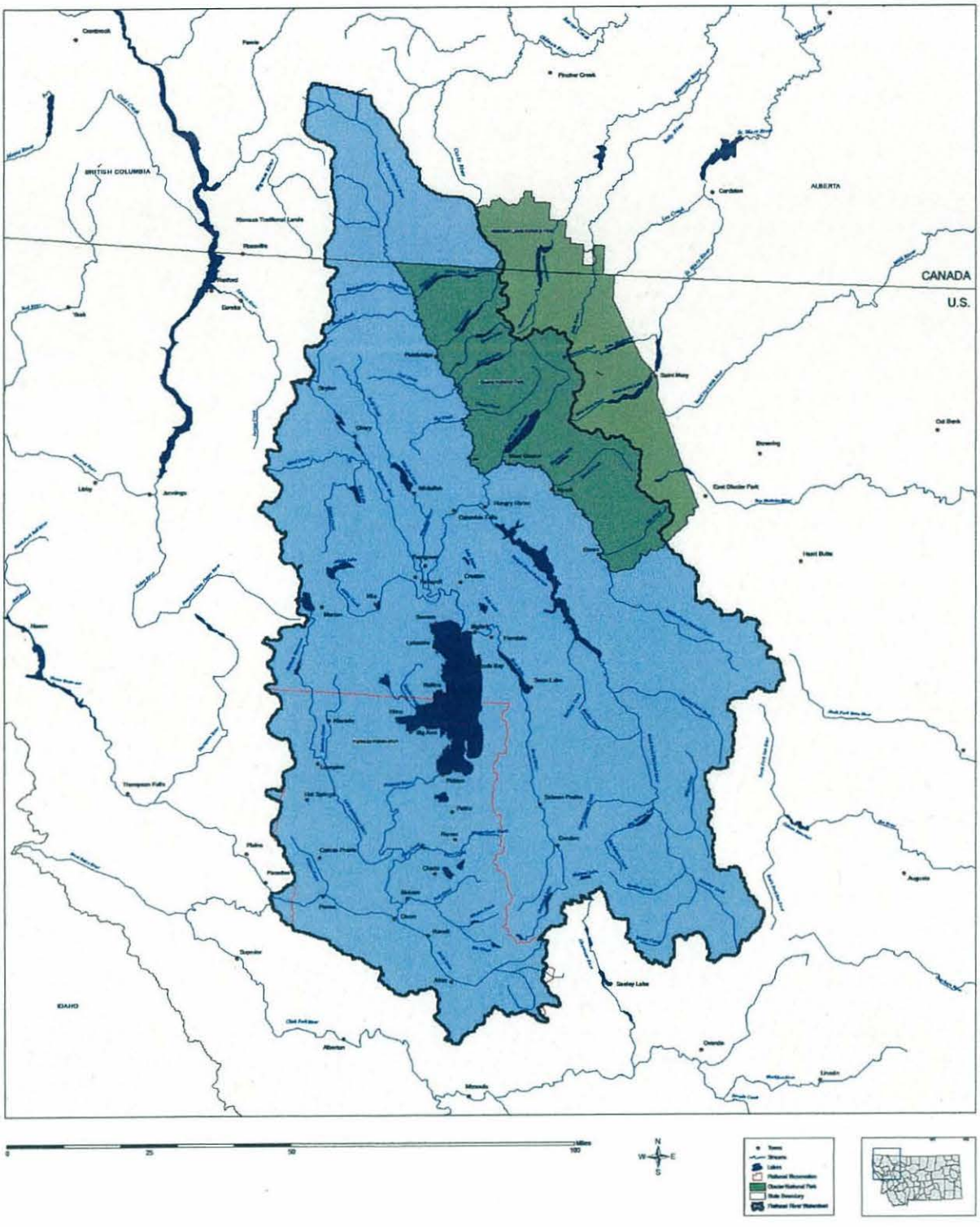

Figure 1.1 Flathead Watershed

Elevations elsewhere in the watershed range from Mount Cleveland in Glacier National Park at 10,466 feet to 2,893 feet at Flathead Lake, the Basin's major catchment. The Lake is one of the 300 largest lakes in the world and the largest body of fresh water in the U.S. west of the Mississippi River, with a full pool surface area of 126,000 acres. The Basin's approximately 500 other lakes range in size and character from nearly inaccessible alpine lakes of only several surface acres to such other significant large water bodies as Swan, McDonald, Whitefish, Tally, and the Little Bitterroot Lakes.

For millennia, human beings have been part of the Flathead Basin environment. Over the past two centuries the nature of that relationship has changed dramatically as tribal ways of life that had long shaped the region's ecosystems were marginalized and an industrialized market economy became predominant.

The Flathead Basin Commission (FBC) was formed to come to terms with that complex legacy and to help chart a path toward a more sustainable future. Created in 1983 by the Montana State Legislature, the mission of the FBC is to protect water quality and the natural resources in one of the State's most important watersheds. The FBC is a uniquely structured non-regulatory organization that works to accomplish its mandate in a consensus-building manner, stressing education, cooperation, broadly based community involvement, partnerships with agencies and nonprofit groups, and the voluntary participation of Basin residents. The twenty-three member Commission[1] represents a cross-section of citizens and local, state, tribal, federal and provincial agency representatives who strive to identify the Basin's water quality and natural resources problems and work collectively to implement the most effective solutions. The FBC is a model of successful citizen and inter-agency cooperation in a geographically vast and ecologically diverse watershed characterized by its overall pristine character, international dimension, and multi-jurisdictional nature.

The watershed today maintains remarkably pristine bodies of water and diverse communities of plants and animals that depend on clean water, including over 300 species of aquatic insects and 22 native and introduced species of fish. Yet warning signs are evident, reminding us of the urgency of our work.

- The water quality of Flathead Lake as measured by TMDLs, oxygen levels and algae blooms is experiencing a deteriorating trend due to increased nutrient loading from populated areas and deposition of wind-carried smoke and dust particles.
- Food web changes have been caused by the introduction of non-native species of invertebrates and fish. Invasive species of non-native plants deleterious to the health of the native ecosystem have been introduced.

[1] Members include: federal agencies (BPA, BOR Hungry Horse, U.S. EPA, Flathead National Forest and Glacier National Park); tribal government (Confederated Salish and Kootenai Tribes); provincial government (B.C. Ministry of Environment); state agencies (Office of the Governor, Department of Natural Resources and Conservation (2), Department of Environmental Quality, Fish, Wildlife and Parks, Flathead and Lake County Conservation Districts); local governments (Flathead and Lake Counties); industry (PPL Montana); and six Governor appointed members of the community each representing unique interests).

- Surface waters and shallow groundwater tables are showing increasing levels of contamination putting at risk drinking water and human health.
- Water quantity in selected sub-basins/tributaries are experiencing drought conditions, as water shortages have curtailed agricultural, domestic and instream uses, causing friction between senior and junior water rights holders.
- Wildlife habitat is shrinking—the grizzly bear, bull trout and Canada Lynx are currently listed as threatened under the federal Endangered Species Act, and wolverine are listed as a candidate species.

Although challenging, many of the issues above can be adaptively managed and improved upon if agencies and stakeholders work together to change the underlying dynamics exacerbating environmental degradation. This proposal will assist us in addressing three of the most critical issues facing the Basin – wastewater management, drought management, and Aquatic Invasive Species prevention.

PROJECT DESCRIPTION

Project Description

The Flathead Basin is home to the largest freshwater lake west of the Mississippi, and the economy and ecology of the Basin is inextricably tied to the clean water produced by this headwaters landscape. The most fundamental renewal resource – water – benefits not only the Flathead, but much of western Montana, as downstream users in the Clark Fork and Columbia Basin systems, reap the benefits of the clean water emanating from the Flathead Basin. Therefore, protecting our surface waters, and the often interconnected groundwater supplies, is of critical importance.

Based upon the FBC Strategic Plan, and associated Action Plan, the FBC has identified key projects which merit implementation. Hence, the Flathead Watershed Plan will strategically focus on areas where:

(1) a small investment in funding and energy will yield significant dividends in terms of both economic and environmental protection;
(2) significant data already exists, which will expedite our ability to identify and develop on-the-ground strategies to protect and improve our renewal resources.

Working with existing stakeholder groups, the proposed Watershed Plan will develop strategies designed to:

- better manage drought in times of water scarcity;
- identify the most cost effective wastewater management solutions designed to achieve the greatest improvement in water quality for the dollars spent; and
- revise and expand the Flathead Basin Aquatic Invasive Species Prevention Plan to better capture conditions on-the-ground, expand the partner base to foster regionalized prevention efforts and build upon existing programmatic successes in order to develop a more robust AIS prevention program.

The FBC has worked extensively to identify issues which pose the greatest threat to water quality, and the Watershed Plan components identified are "shovel-ready" and will yield significant results in timely manner.

Drought Management Component:
Current condition: Inadequate water supplies to fully protect renewable resources.
Factors most responsible: Over appropriation, drought conditions
Level of quantification: Data readily available as DNRC has documented conditions, and some sub-basins have been closed to new appropriations. The data from DNRC Kalispell Water Resources Regional Office is critical to our understanding of the current condition, and greatly reduces uncertainty regarding the causes of inadequate supply.

Overview: During the 2013 legislation session, Montana DNRC was charged with developing drought management plans as part of its State Water Plan. The FBC, as a member of the Clark Fork River Basin Task Force, participated in the development of the Water Supply Initiative Draft Plan for the Clark Fork and Kootenai River Basins, which calls for the development of drought management plans, in accordance with the 2013 legislative mandate. In addition to the work undertaken as part of the Water Supply Initiative, DNRC has also identified water bodies in the Flathead Basin subject to drought conditions during times of water scarcity based on physical and legal water availability. Taken together, these circumstances demonstrate the need for a drought management plan in portions of the Flathead Basin to mitigate adverse economic and ecological impacts in the event of future drought conditions.
While no efforts related to drought planning in the Flathead Basin are ongoing, the Flathead Lake Drought Management Plan adopted in 2010 by PPL Montana and CSKT was adopted to resolve conflicts between minimum flows and flood control rule curves for Flathead River and Lake. However, tributaries and other water bodies in the Flathead Basin were not included in the 2010 Plan which was driven by FERC relicensing requirements for Kerr Dam. Hence, the need for a pro-active drought management planning effort for Swan Lake, Ashley Creek, Middle and North Fork of the Flathead River, Walker and Truman Creeks and associated tributaries.
Support for this effort would come from the Clark Fork River Basin Task Force, federal, state, and local agencies, irrigators, and other stakeholder groups.
This component will identify those areas in the Flathead Basin subject to experiencing water shortages due to over allocation, and will then work with stakeholders to identify those sub-watersheds residents interested in developing a voluntary, "buy-in" plan to collaboratively and cooperatively share water resources in times of drought. The drought component will initially be based on the "shared sacrifice" strategy being successfully used by the Blackfoot Challenge (Montana), but will be modified as needed to fit on-the-ground conditions in each sub-basin.
Specific Tasks include:

- Review and adapt the Blackfoot Challenge Drought Management Model for the Flathead Basin.
- Undertake outreach with stakeholders in sub-basins/water-bodies potentially impacted by drought to ascertain level of interest in adopting a drought management plan at the local level.
- Further refine, as necessary, drought management plan(s) for selected tributaries/water-bodies.
- Obtain voluntary commitments/sign-offs on the drought plan(s).

- Develop tools to evaluate the successes and failures of the drought planning effort to facilitate adaptive management, including but not limited to obtaining data on the number of residents in identified sub-basins voluntarily agreeing to participate in and implement the drought management plan in times of scarcity.

This component of the Watershed Plan will facilitate:

- **Conservation** of surface, and interconnected groundwater sources, by promoting sustainable use.
- Better **management** of water use, thereby improving ability of sub-basin residents to pro-actively administer withdrawals.
- **Preservation** of fish and aquatic habitat by preventing dewatering/excessive low flows.

The **Drought Management** component will protect the following public resources: water, fish, and recreational opportunities. Benefits that will accrue include as a result of this effort:

- Economic benefits as sufficient water remains available for agricultural producers;
- Protection of the local tourism industry as sufficient water would remain available for fishing and other recreational opportunities;
- Reduction in protracted legal disputes over water rights[2]; and
- Development of a required legislative mandate under the State Water Supply Initiative.

The methods used to evaluate the success of this component includes: (1) majority of residents in identified sub-basins voluntary agree to participate in and implement the drought plan in times of scarcity; and (2) pre- and post-flow monitoring demonstrates an improvement in flow levels during drought and/or a reduction in water disputes among users during drought conditions.

Wastewater Strategy:

Current condition: Failing septic systems contributing to non-point source pollution.

Factors most responsible: poor land use planning practices, lack of funding to connect septic systems to wastewater facilities, aging systems, extremely porous soils, etc.

Level of quantification: Between the Carver Engineering Report, the Flathead TMDL modeling effort, the Flathead trend data, etc. the level of quantification as a whole is high. However, data gaps may exist when trying to assess the exact nutrient load generated by a particular non-point source. This uncertainty will require pre- and post monitoring to evaluate the benefits of voluntary non-point source reduction efforts.

Overview: In 2010, with a grant from DNRC, Flathead County convened the Flathead Regional Wastewater Management Group (FRWMG). FRWMG's mission was to prepare a region wide strategic plan for wastewater management, including septic tank discharge, based upon sound science and engineering. The FRWMG commissioned Carver Engineering to undertake a study of septic systems in the Flathead Basin. The Carver Report was completed in 2012, and identified (with GIS mapping) existing public wastewater collection and treatment systems and existing on-site septic systems within the watershed. Upon completion of the Carver report,

[2] With a drought management plan, water disputes will be more easily managed as reductions in water usage will be agreed upon in advance – prior to the drought conditions being present on the landscape.

funding under the DNRC grant was fully expended, and Flathead County opted to disband the FRWMG. However, in early 2014, the FBC was asked to reconvene the group in order to take the Carver study to the next level. In order for the FRWMG to proceed to implementation, funding will be needed to develop an on-the-ground wastewater strategy aimed at reducing nutrient loads, as per the Flathead TMDL approved in 2001. Support for this effort would come from FRMWG members.[3]

The FBC would work with the Flathead Regional Wastewater Management Group (FRWMG) to develop a strategy reduce nutrient loads associated with septic systems adjacent to surface water sources, as well as issues associated with the land application of septage. The bulk of the data needed for developing such a strategy has already been completed (i.e. EPA/DEQ modeling for the Flathead Lake TMDL, Carver Engineering Study, trend data for over 50 sites in the Basin, etc.) and the FBC/FRWMG is poised to begin to develop a strategy for reducing existing nutrient loads.

Specific tasks include:

- Expand and diversify FRWMG members.
- Using the nutrient trading program currently being developed by the City of Whitefish with a grant from DNRC, the FRWMG will scale up the nutrient trading program to a basin-wide level.
- Obtain approval for the draft Flathead Basin nutrient trading program from EPA/DEQ.
- Identify pilot project(s) that could be targeted for nutrient reduction purposes using the approved nutrient trading scheme.[4]
- Undertake pre monitoring for selected pilot project(s).

This component of the Watershed Plan will facilitate:

- **Conservation** of water, fish and aquatic habitat by promoting a more sustainable wastewater management system.
- Better **management** of wastewater disposal, thereby reducing nutrient loading to surface and groundwater sources.
- **Preservation** of water quality, fish and aquatic habitat by limiting wastewater discharges from septic systems, and potentially other sources.

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[3] FRWMG members currently include representatives from: Woods Bay, Swan Lakers, Flathead Lakers, City of Whitefish, CSKT, Glacier National Park, Flathead County, Lake County, City of Columbia Falls, City of Polson, City of Kalispell, EPA and DEQ.

[4] For example, if the City of Whitefish wastewater treatment facility is faced with a $2 million improvement to fractionally reduce nutrient loads, under an approved trading scheme, these same funds could be spent elsewhere (i.e. to fence cattle out of tributaries) to obtain a far larger reduction in overall Flathead Lake nutrient loads.

- **Protection** of human health by ensuring that nutrient loads from waste water systems/septic systems are reduced, thereby safeguarding drinking water supplies.
- **Protection** of the local tourism economy which relies on the Basin's clean waters as a tourist draw.
- **Protection** of the local economy by ensuring that costs for wastewater system improvements (currently being borne primarily by the cities) reap the greatest possible water quality benefits.

The benchmark used to evaluate the programmatic success includes: adoption of wastewater management plan for the Flathead Basin, with an approved nutrient trading component. In addition, potential pilot sites would be identified to test results of the trading program, and pre-monitoring to assess loads prior to site improvements would be undertaken.

AIS Prevention Plan Expansion:
Current condition: No zebra or quagga mussels present in the Flathead Basin.
Factors most responsible: Flathead AIS prevention program, State AIS prevention program, distance to know populations sources, etc.
Level of quantification – Based on data from our AIS surveys a relatively high degree of certainty exists regarding presence/absence of zebra/quagga mussels. This allows us to continue to undertake prevention efforts, rather than shifting to containment effort.

Overview: In 2009, the Flathead Basin Commission convened the Flathead AIS Work Group to develop a collaborative and cooperative AIS Strategic Prevention Plan for the Flathead Basin. The Flathead AIS Strategic Plan was adopted in 2010, and called for a combination of watercraft inspection stations, monitoring, education/outreach efforts, rapid response planning, etc. During this same period (2009, 2011 and 2013), state legislators passed AIS statutes reaffirming the importance of AIS prevention and noting the potential adverse impacts of AIS on Montana's economy. While great strides have been made in reaching the goals outlined in the Flathead AIS Strategic Plan, it is clear that efforts must be ramped up in light of the ever increasing presence of zebra and quagga mussels. This fall, Lake Winnipeg tested positive for mussels, further underlining the need for heightened regional prevention efforts. Support for this project will come from the Flathead AIS Work Group,[5] the Crown Managers Partnership and the GNLCC. Specific Tasks will include:

- Revised AIS Plan; and
- Diversified stakeholder group.

This component of the Watershed Plan will facilitate:

[5] To date, members and supporters have included: MT FWP, MT Dept. of Agriculture, DNRC, CSKT, BOR Hungry Horse, City of Whitefish, Trout Unlimited Flathead Chapter, Whitefish Water and Sewer District, Lake County, Flathead County, Lake County Weed District, Lake County Conservation District, USFWS, USGS, Glacier National Park, U.S.F.S., Missoula County Weed District, Flathead Protection Association, Whitefish Lake Institute, Clark Fork Coalition, Clearwater Resource Council, City of Polson, Flathead legislators, Flathead Lake Biological Station, Salish Kootenai College, Avista, Crown Managers Partnership, Province of Alberta, and others.

- **Conservation** of water, wildlife, fish and aquatic habitat by preventing new Aquatic Invasive Species (AIS) from becoming established in the Flathead which would dramatically alter habitat for waterfowl, food webs, spawning areas, etc..
- Better **management** of watercraft movement/launches in order to prevent unwanted aquatic invasive hitchhikers from becoming established in the Flathead.
- **Preservation** of water quality, fish and aquatic habitat by preventing zebra and quagga mussels (which can cause toxic algal blooms) from becoming established in the Flathead ecosystem.
- **Protection** of human health by ensuring that drinking water supplies are not contaminated by the toxic algal blooms associated with zebra and quagga mussel introductions.
- **Protection** of the local economy, which relies in part on a healthy fishery, from the adverse impacts associated with zebra and quagga mussel introductions.
- **Protection** of recreational resources by ensuring that boat, beaches, docks, etc. remain unfouled.

Method use to evaluate programmatic successes include: Revised and adopted AIS Plan, increased diversity of stakeholders within the Basin, and increased regional partnerships.

Description of Applicant: Describe the existing watershed group, addressing the definition of a watershed group in Section I.B:
The FBC is a self-sustaining, cooperative watershed-wide group that is comprised of representatives of the affected stakeholders in the Flathead Basin. The FBC incorporates the perspectives of a diverse array of stakeholders, including representatives from:

- Hydroelectric production – PPL Montana and BOR Hungry Horse
- Livestock grazing – Flathead and Lake County Conservation Districts
- Timber production – U.S.F.S. and Montana DNRC (timber division)
- Recreation or tourism - Glacier National Park
- Irrigated agricultural production – Confederated Salish and Kootenai Tribes
- The environment – U.S. EPA
- Private property owners – 6 Governor appointees all of whom are property owners

Federal agencies that have authority with respect to the watershed include the following FBC members: Glacier National Park, Flathead National Forest, BOR Hungry Horse, BPA and EPA.

State agencies that have authority with respect to the watershed include the following FBC members: State of Montana Office of the Governor; Montana Fish, Wildlife and Parks; Montana Department of Environmental Quality; Montana Department of Natural Resources; and the Flathead and Lake County Conservation Districts.

Local agencies that have authority with respect to the watershed include the following FBC members: Lake County, Flathead County.

Indian tribes that own land within the watershed include the following FBC members: Confederated Salish and Kootenai Tribes.

The FBC is a grassroots, non-regulatory entity that addresses water availability and quality issues within the Flathead Watershed.

The FBC is capable of promoting the sustainable use of the water resources in the Flathead and improving the functioning condition of rivers and streams through: water conservation, improved water quality, ecological resiliency, and the reduction of water conflicts.
The FBC makes decisions on a consensus basis, as defined by the bylaws of the Commission.
Eligibility of Applicant: The FBC is an existing "watershed group," (i.e., a grassroots, non-regulatory legal entity that otherwise meets the definition of a watershed group as described in Section I.B. Objective of Funding Opportunity Announcement) as described above in Section I.B., *Objective of Funding Opportunity Announcement.*

Goals: The FBC is seeking funding to perform Task B—Expansion of an Existing Watershed Group. The goals and objectives of this Watershed Plan are described below.

Drought Management Component:
Desired change in conditions: Sufficient in-stream flow during drought conditions for fish, irrigators, recreational uses, and others.
Condition at project completion: Sufficient in-stream flow during drought (or late summer) conditions in one or more of the tributaries or water bodies where physical availability currently limits beneficial uses. The FBC will focus on partnering with stakeholders in sub-basins expressing an interest in drought management as the program will be a voluntary, opt in program. While a drought management plan cannot produce more water, it can develop a plan to use and conserve exiting water more efficiently, switch to crops requiring less water, develop a "shared sacrifice" philosophy to water use, etc..

Wastewater Strategy Component:
Desired change in conditions: Reduction in nutrient loading in Flathead Lake.
Condition at project completion: The Wastewater Plan will address the potential reduction in nutrient loads currently generated from non-point sources. The point of strategy is to (1) show where the largest reductions could be obtained for the least amount of money; and (2) demonstrate how a nutrient trading program could work; and (3) select 1-3 demonstration projects (with pre- and post monitoring) to document the benefits of the nutrient trading approach. The wastewater strategy is designed to facilitate change on-the-ground, which will benefit the Basin's water quality in the long term.

AIS Prevention Plan Expansion:
Desired change in conditions: None. Continue the Basin's mussel-free status.
Condition at project completion: The existing Flathead Basin AIS Strategic Plan will be revised to reflect conditions on the ground. The existing partnership will be expanded so that a more regional approach to AIS prevention can be employed to increase program efficiency and effectiveness.

Approach: The planned approach to expanding the FBC

Information gathering will be conducted on specific watershed components. For the drought management plan, stakeholders will be identified, and alternatives for water management in closed basins will be research (i.e. reuse of gray water, water conservation, shared sacrifice concept, etc.). For wastewater planning, information will be gathered on methods that could be used to reduce non-point sources, the use of a nutrient trading program, and the documentation of water quality conditions at selected sites, as necessary. For AIS prevention planning, little new information is needed, and most of the efforts will focus on updating the existing AIS plan and expanding our partner base to increase our effectiveness.

Mission statement, articles of incorporation, and coordinator: The FBC was established in 1983 as a state agency, administratively attached to Montana DNRC. The FBC has an existing mission statement, by-laws, Strategic Plan and Action Plan. The FBC hired a full-time Executive Director in 2006.

Conducting outreach to expand membership of the watershed group, including efforts to ensure the diversity of the group. The formal membership of the FBC is set in State statute. Historically, the FBC has expanded its base through the use of work groups and committees. In this case, the FBC has already established an AIS Work Group which will be expanded to foster diversity in group membership, and will include outreach to land developers, irrigators, industrial water users, etc., as well as to relevant agencies adjacent to the Flathead to increase prevention effectiveness within the Basin.

The existing wastewater group will be expanded to foster diversity in group membership, and will include outreach to include land developers, realtors, tourism interests, industrial users, legislators, etc.

In the case of the drought management group, the FBC will create the workgroup from scratch, and will undertake outreach efforts to landowners and water users in impacted sub-basins.

Final report: A final report will be prepared upon completion of this project. The project will take approximately two years, and should be completed by the end of 2016.

EVALUATION CRITERIA

Evaluation Criteria A: Watershed Group Diversity and Geographic Scope

Subcriterion No. A1. Watershed Group, Task B—Expansion of an Existing Watershed Group:

The 23 member Board of the Flathead Basin Commission represents a maximum diversity of interests and include representatives from: federal agencies (U.S. Forest Service, Glacier National Park, Bureau of Reclamation, U.S. EPA and Bonneville Power Administration), tribal government (Confederated Salish and Kootenai Tribes), state agencies (Department of Natural Resources and Conservation, Fish, Wildlife and Parks, Department of Environmental Quality, Office of the Governor, Flathead County Conservation District, and Lake County Conservation District); provincial agencies (B.C. Ministry of Environment); local governments (Flathead

County and Lake County);business (PP&L Montana); and six citizen stakeholders representing interests in recreation and tourism, forestry, native culture, the arts, etc.

In addition to the 23-member Board, the FBC spearheads two workgroups which further expands our collaborative efforts with relevant stakeholders. The Flathead AIS Work Group members include: federal agencies (Glacier National Park, Bureau of Reclamation, U.S. Forest Service, U.S. Fish & Wildlife Service, and U.S.G.S.); tribal government (Confederated Salish and Kootenai Tribes); state agencies (Montana Department of Agriculture; Montana Department of Natural Resources and Conservation, Montana Fish, Wildlife and Parks, and Flathead and Lake County Conservation Districts); county government agencies (Flathead, Lake and Missoula County Weed Districts), city governments (Cities of Polson and Whitefish); academic institutions (University of Montana Flathead Lake Biological Stations and Salish Kootenai College); non-profit organizations (Trout Unlimited, Flathead Lakers, Swan Lakers, Flathead Lake Protection Association, Whitefish Lake Institute, Clearwater Resource Council and Clark Fork Coalition); businesses and state legislators.
The FBC will increase the diversity of the AIS Work Group by engaging in outreach to: ranchers/farmers and local businesses, especially tourism based businesses. The FBC will inform affected stakeholders about their efforts using: presentations at meetings with key stakeholder organizations (ie. irrigation districts, chambers of commerce, tourism bureaus, etc.); one-on-one meetings with key stakeholders; and other efforts as deemed necessary.
The Flathead Regional Wastewater Management Group includes: the Cities of Columbia Falls, Whitefish, Kalispell and Polson; Flathead and Lake Counties; the Confederated Salish and Kootenai Tribes; Glacier National Park; Flathead Lakers (environmental NGO); Swan Lakers (environmental NGO); and Woods Bay Homeowners Association. The FBC will increase the diversity of the FRWMG by engaging in outreach to including: ranchers/farmers and local businesses. The FBC will inform affected stakeholders about their efforts using: presentations at meetings with key stakeholder organizations (ie. irrigation districts, chambers of commerce, Flathead Building Association); one-on-one meetings with large landowners; and other efforts as deemed necessary.

The FBC covers the entire extent of the watershed with the following HUC codes: 17010206 (North Fork Flathead); 17010207 (Middle Fork Flathead); 17010208 (Flathead Lake); 17010209 (South Fork Flathead); 17010210 (Stillwater); 17010211 (Swan); and 17010212 (Lower Flathead).

Subcriterion No. A2. Geographic Scope
Task B—Expansion of an Existing Watershed Group:
The FBC currently represents the full geographic scope of the watershed (see HUC description immediately above and attached Map). Given that the FBC covers the full geographic scope of the watershed, we will not expand the geographic scope of the group. However, in certain instances the FBC will coordinate with partners external to the watershed to more fully achieve programmatic objectives related to AIS prevention and drought management planning.
Reference Map 1.2.

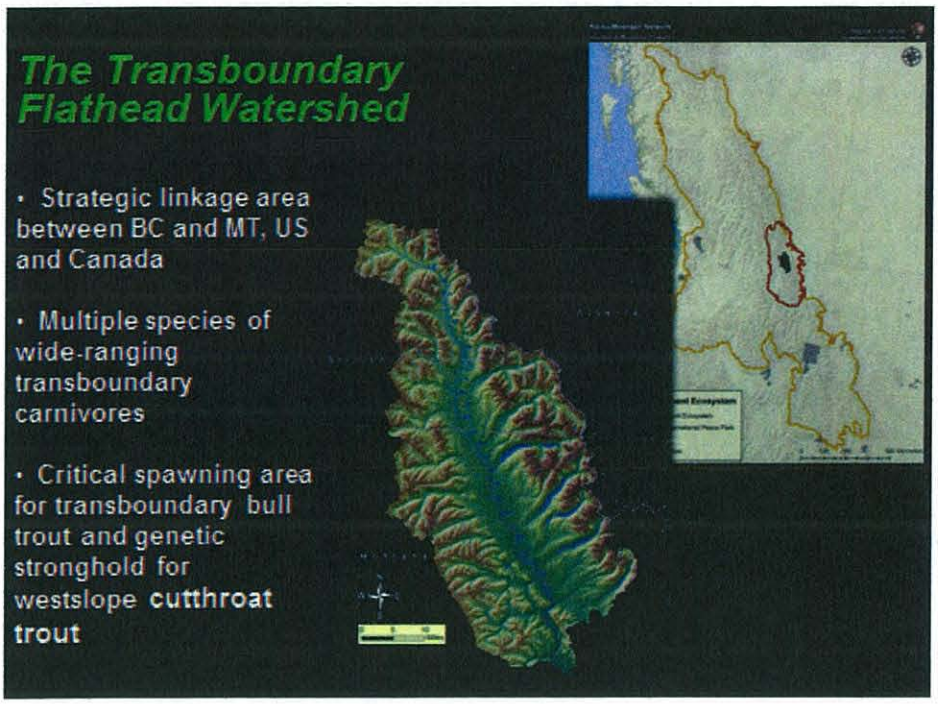

Figure 1.2 - Flathead Watershed and surrounding area.

Evaluation Criteria B: Addressing Critical Watershed Needs

Subcriterion No. B1. Critical Watershed Issues, Task B—Expansion of an Existing Watershed Group:

In the face of climate change, some of the most critical issues existing within the Flathead watershed include:

Drought management: Although much of the Flathead basin is water rich, and water levels in Flathead Lake can be controlled via management strategies employed at the Hungry Horse Dam, water shortages in tributaries are not uncommon in the Flathead. Drought conditions in selected tributaries have led to: (1) adverse impacts to endangered species such as bull trout, as these salmonids use some of these tributaries to satisfy their live cycle needs; (2) conflicts between senior and junior water rights; and (3) adverse impacts to terrestrial species as riparian areas become dewatered. Since the FBC was formed in 1983, the need for drought management has increased. Recent studies have shown that as water levels in selected tributaries decline, water temperatures continue to increase – a potentially lethal combination for bull trout. Therefore, keeping sufficient water in streams is critical, along with protecting the riparian vegetation that can provide shade for both bull trout (endangered) and westslope cutthroat trout (threatened).

Figure 2: Threatened west-slope cutthroat trout. More information is available at http://www.scienceworldreport.com/articles/15014/20140528/climate-change-result-extinction-montana-cutthroat-trout.htm Photo: USFWS Pacific Region

- **Wastewater**: Flathead Lake is an outstanding aquatic resource of international importance. Maintaining water quality in Flathead Lake is a high priority for the State of Montana given the Lake's importance as an economic generator.[6] However, despite basin wide efforts to reduce nutrient loading (e.g., phosphate detergent ban, increased municipal sewerage treatment efficiency, etc.) a downward trend in water quality has been documented since 1977. Flathead Lake is now listed on the 1996 and 2000 Montana 303(d) lists as impaired for the beneficial use of aquatic life. The resultant Flathead Lake TMDL was designed to address excessive nutrient loading caused by unregulated growth, road building, timber harvest, agricultural practices, etc.[7]

  When the Flathead Lake TMDL was adopted in 1998, much optimism existed on the ability of regulators to address surface water pollution. However, since that time it has become apparent that the Flathead TMDL will have at best a modest impact on nutrient load reductions given the voluntary nature of the program as it relates to non-point sources, the primary culprit contributing to nutrient loading in the last 10 years.[8] Several studies in the Flathead have shown that septic systems (non-point sources) adjacent to water bodies are contaminating shallow groundwater sources which are directly connected to surface water sources. Therefore, in order to improve water quality in Flathead Lake, additional steps will need to be taken to supplement the regulatory tools used to control point sources.

Parameter	Target	Water Year 2000 data*
Primary production	80 g C m^{-2} yr^{-1}	108 g C m^{-2} yr^{-1}
Dissolved oxygen in the hypolimnion	No declining trends in oxygen concentrations	79.5% of saturation at midlake deep site
Blooms of Anabaena or other pollution algae	No measurable blooms	Data not yet analyzed
Chlorophyll a	1.0 ug/L	1.0 ug/l
Algal biomass on near-shore rocks	Measured as Chl a per unit area, biomass remains stable or exhibits declining trend	Data collection effort just beginning
Total phosphorus (TP)	5.0 ug/l	5.9 ug/l
Soluble reactive phosphorus (SRP)	<0.5 ug/l	0.7 ug/l
Total nitrogen (TN)	95 ug/l	101 ug/l
Nitrite + Nitrate ($NO_{2/3}$–N)	30 ug/l	43 ug/l
Ammonia (NH_3 – N)	<1.0 ug/l	5.1 ug/l

Figure 3: Comparison of targets to current conditions (2000) in Flathead Lake. Image from the *Nutrient Management Plan and TMDL for Flathead Lake,* MT Dept. of Environmental Quality, 2001

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[6] Tourism is the second largest industry in Montana.

[7] Nutrient loading also causes noxious aquatic plant growth, organic enrichment/low Dissolved Oxygen (DO) levels and toxic algal blooms.

[8] Both Lake and Flathead Counties remain among the fastest growing in the state. Based on 2010 Census Block data obtained from the Montana State Library (2011), the 2010 population for the Flathead Basin was 119674. That represents a 49 percent increase since the 1990 census. The vast majority of new homes constructed in the Flathead to accommodate this growth occurred outside the boundaries of the county's three incorporated areas, and are therefore not serviced by municipal wastewater systems.

- **Aquatic Invasive Species:** Introductions of Aquatic Invasive Species (AIS) have caused the decline and extinction of many plant and animal species, and are cited as a cause of endangerment for 48% of the species listed under the Endangered Species Act (ESA). In 2005, aquatic invasive species cost the U.S. economy over $120 billion. Their occurrence and distribution are increasing rapidly, and adverse impacts associated with AIS continue to rise.

  AIS can be plants, such as Eurasian watermilfoil, animals, such as zebra mussels, and other microorganisms, such as the parasite that causes whirling disease. Once introduced into new habitats, these organisms disturb native species through competition, predation, displacement, hybridization, spread of disease and parasites, and can ultimately cause extinction of many valued organisms. AIS can also affect humans by causing adverse impacts to hydropower, drinking water supplies, agricultural, aquacultural, and recreational activities that depend on water resources.

  In Montana, AIS are a serious problem, with over 70 AIS currently existing in the State. However, the Flathead Basin still remains free of the most problematic AIS species -- zebra and quagga mussels. These invasive mussels, if introduced would pose the largest single threat to the ecological resiliency of the Flathead Basin watershed. Moreover, as the headwaters for the entire Columbia River Basin, maintaining the mussel-free status of the Flathead is of critical importance.

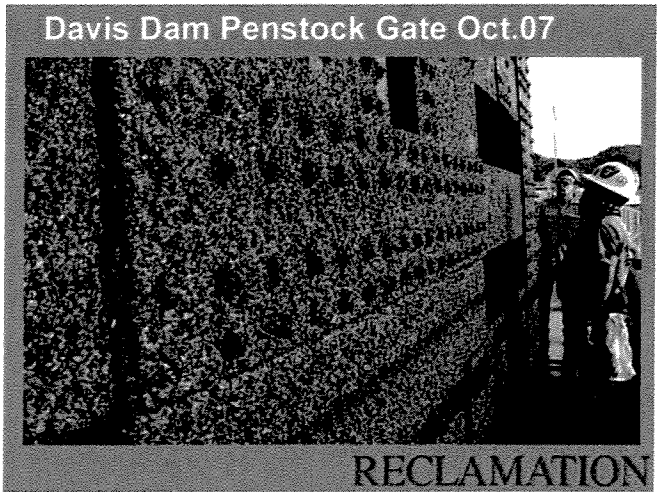

Figure 4: The surface of Davis Dam, Nevada, completely covered in quagga mussels. Photo: U.S. Bureau of Reclamation

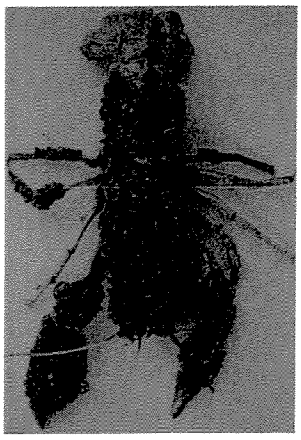
Figure 5: Native crayfish covered in zebra mussels. Photo: USGS

Since the development of the Flathead Basin AIS Strategic Prevention Plan in 2010, the Flathead has made great strides in reaching many of its stated goals and objectives. However, the threats associated with a possible mussel introduction have dramatically increased over the last five years, as states and provinces[9] with mussel infestations are increasingly geographically proximal to the Flathead Basin.

For all of these reasons, the development of local and regional enhanced strategies for the prevention and management of zebra and quagga mussels is critically needed to minimize the harmful economic, ecological and social impacts of AIS.

[9] For example, Lake Winnipeg was found to be mussel positive in 2013 and multiple water bodies in Colorado are now testing positive for zebra and/or quagga mussels.

Subcriterion No. B2. Watershed Group Contributions that Address Watershed Issues
Task B—Expansion of an Existing Watershed Group:

The FBC will expand upon existing efforts to contribute to improved management of the watershed, including:

1. Enhanced water conservation: Development of a drought management plan will enhance water conservation as the plan will specifically focus on conserving water during periods of scarcity. Conservation options might include more efficient use of irrigation water during peak months, higher levels of irrigation prior to peak months to facilitate greater recharge, change in the types of crops growth to reduce water use (e.g. shift from alfalfa to crop with lower water needs), etc. The plan will be designed to conserve water so that beneficial uses, including instream flows needed to maintain ecological integrity, can be supported over time.

2. Improving water quality and/or ecological resiliency: To date, only minimal effort has been expended on developing a comprehensive plan to address wastewater management, which is increasing important as population in the Flathead continues to grow. The wastewater management plan would pro-actively address water quality by developing a plan to more efficiently and effectively address non-point source pollution (i.e. septics, agricultural uses, sediment delivery from roads, etc.) though the use of a variety of tools, such as establishment of a nutrient trading program, conversion of septics to wastewater treatment systems, management of surface water flows, etc.

3. Reduced the potential for water conflicts: In tributaries/sub-basins where water is scarce, conflicts between water users can become intense. Developing a drought management plan will reduce conflicts between junior and senior users as more water is available due to the adoption of selected conservation measures, and predetermined use levels are agreed to in advance of drought conditions.

4. Advanced any other goals associated with water quantity: The AIS planning effort will protect water quality as the introduction of zebra and quagga mussels ultimately causes a decline in water quality which would impact drinking water supplies in the Flathead, especially for those residents which continue to rely upon surface water sources. In addition, the preservation of water quality (via the wastewater and AIS plan components) and quantity (via the drought management plan component) will protect threatened and endangered (T&E) species such as bull trout[10] and non-T&E species such as native mollusks.[11]

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[10] Ensuring water quantity and quality for bull trout throughout its range, so that the fish can complete its life cycle is essential. In addition, the introduction of invasive mussels would adversely impact the food web upon which bull trout rely; would smother spawning beds; and could decrease DO levels.

[11] Native species, such as mollusks and crustaceans, suffer extremely high mortality levels (see Figure 5 on previous page).

The FBC plans to enhance collaboration between existing stakeholders and to bring new stakeholders to the table to identify creative and collaborative solutions to better address some of the key issues facing the Flathead Basin. More specifically the FBC will:

- expand its existing AIS workgroup, to include participants from the Crown Managers Partnership and the Great Northern Landscape Conservation Cooperative. This will facilitate the development of a regionally based prevention effort with a higher likelihood of success.
- expand the existing Flathead Regional Wastewater Management Group (FRWMG) by including more elected officials and citizen stakeholders in the ongoing wastewater planning discussion. This will facilitate greater support for implementation once the planning phase is complete.
- establish a drought planning group, including land owners/water rights owners, agricultural interests, homeowners, etc., to develop a drought management plan in sub-basins and tributaries where (1) closures currently exist; or (2) water shortages exist, though formal closure has not yet occurred. Working directly with stakeholders will ensure that the plan is both feasible and supported by those water rights owners that will ultimately be responsible for implementing the plan.

Evaluation Criteria C: Implementation and Results

Subcriterion No. C1—Project Planning; Task B—Expansion of an Existing Watershed Group:

The Watershed Plan, as envisioned under this proposal, will have three distinct parts. Each part conforms with the goals of various applicable Federal, State and/or regional water plans, including but not limited to:

- **Wastewater Planning Effort** conforms to the FBC Strategic Plan; the Montana Department of Environmental Quality (DEQ) Nutrient Management Plan and TMDL for Flathead Lake; and EPA's Nonpoint Source Management Program. These Plans inform the current efforts of the FBC. For example, the Commission and Montana Fish, Wildlife and Parks, jointly funds a water quality monitoring program to obtain trend data to better assess nutrient loads. This water quality data is provided to DEQ/EPA for the ongoing Flathead Lake TMDL modeling effort. In the future, the FBC will use these state and regional plans to direct the development of a wastewater management plan designed to reduce nutrient loads, in direct consultation with both DEQ and EPA. This proposal, if funded, with enable the FBC to positively contribute to all of the plans listed above.[12]

- **Drought Planning Effort** conforms to the FBC Strategic Plan; the Clark Fork/Kootenai River Basins Draft Recommendations Report; the State of Montana Water Supply

[12] For example, the FRWMG has expressed an interest in establishing a nutrient trading program for the Basin. If adopted, the nutrient reductions obtained would directly contribute the EPA/DEQ goals of reducing nutrient loads in Flathead Lake.

Initiative; and the Confederated Salish and Kootenai Tribes (CSKT) Climate Change Strategic Plan. All of these plans support the need to address drought management in a pro-active fashion. In the future, these plans will be used to direct efforts towards drought planning in selected sub-basins with the Flathead. For example, the CSKT Plan calls for the development of a drought management plan to enhance "water quality and quantity preparedness" in the context of changing climatic conditions (page 60). This proposal, if funded, will contribute directly and immediately to all of the plans listed above by developing the drought management plans called for in the State, Tribal and regional planning documents.

- **AIS Planning Effort** conforms to the Flathead Basin AIS Strategic Prevention Plan; Montana Fish, Wildlife and Park Aquatic Nuisance Species Management Plan; the federal Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (which called for the development of AIS plans); and the GNLCC Strategic Conservation Framework. All of these plans direct our AIS activities on a day-to-day, month-to-month, year-to-year basis. For example, the Flathead Basin AIS Strategic Plan calls for watercraft inspection stations at all of the major points of entry into the Basin. In order to actualize this goal, seven local partners have contributed funding. While many of the goals in the Flathead Basin plan have been met, in the immediate future protection activities need to be increased due to the proximity of invasive mussels far closer to our borders. It is also apparent that the FBC will have to coordinate more closely with its partners at the Crown Managers Partnership and the GNLCC and in order to build a regional approach to AIS prevention. This proposal, if funded, will contribute directly to all of the plans listed above.

Subcriterion No. C2—Readiness to Proceed; Task B—Expansion of an Existing Watershed Group:

The plan for implementing the wastetwater and AIS plan components is to build upon the existing working groups, and include additional participants, entities and organizations by undertaking deliberative outreach efforts to identified, targeted stakeholders. With the support of a dedicated facilitator, these groups could be empowered to address their issues of concern. For the AIS component, the existing AIS plan needs to be expanded and improved upon to reflect new challenges, and to account for ongoing accomplishments. For the wastewater component, funds will likely be expended analyzing tools and options for wastewater management, such as how a nutrient trading program might be adopted and used on-the-ground. For the drought management component, the FBC will be establishing a stakeholder group(s), and the initial phase for this component will be to build trust and relationships, in order to move towards development of a plan.

The FBC is managing, and has managed, multiple stakeholder groups with success. The single best example of the FBC's ability to manage is the effort undertaken by the FBC from 2006-2010 to resolve the impasse over British Columbia's plans to permit strip mining in the headwaters of the Flathead River. Working with multiple stakeholder groups and the State of Montana Governor's Office, the issue was resolved with the adoption of the *BC-MT Memorandum of Understanding and Cooperation on Environmental Protection, Climate Action and Energy* (2010), which banned strip mining and other resource extraction developments in the Flathead in perpetuity. Our track record in working with partners and stakeholders has been demonstrated over time, and we can employ these skills in developing the Watershed Plan outlined in this proposal.

Estimated Schedule:

Phase	*Duration*	*Major Tasks*	*Milestones*	*Contractual Costs*	*Dates*
AIS Phase I: Planning	6 mo.	Stakeholder mtgs to gather input	Draft of recommendations obtained	$8,000	Jan 2015-June 2015
Phase II: Plan Revision	6 mo.	Preparation of Draft and Final Plan	Final Plan	$10,000	July 2015-December 2015
Drought Plan Phase I: Outreach	6 mo.	Undertake outreach to identify stakeholders	List of committed stakeholders by sub-basin confirmed	$7,000	Jan 2015-June 2015
Phase II: Convene stakeholders group(s)	6 mo.	Stakeholder mtgs to gather input	Draft of Recommendations Obtained	$7,000	July 2015-September 2015
Phase III: Plan Development	1 yr.	Prepare draft plan, hold interim stakeholder mtgs, finalize plan	Final Drought Management Plan with sub-basin specific level of detail	$14,000	October 2015-September 2016
Wastewater Phase I: Planning	6 mo.	Stakeholder mtgs to gather input	Draft of recommendations obtained	$7,000	Jan 2015-June 2015
Phase II: Research	6 mo.	Research implementation tools identified	Draft Summary of Research Findings w/Recommendations	$6,000	July 2015-December 2015
Phase III: Pre-implement. Efforts	6 mo.	Identification of sites, pre-monitoring	Completed pre-implementation plan	$7,000	January 2016 – June 2016
Phase IV: Wastewater Plan	6 mo.	Prepare draft plan, hold interim stakeholder mtgs, finalize plan	Final Wastewater Management Plan	$13,000	July 2016-December 2016

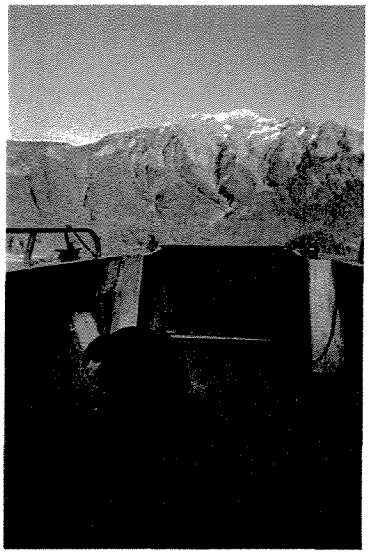
Cost share is currently limited to salaries and wages that will be considered match by our partners. More detailed information provided in the Project Budget, page 25.

Problems or major difficulties anticipated in accomplishing the work:
While the FBC does not foresee any problems with accomplishing the work outlined for wastewater management and AIS prevention, drought management is a new programmatic area for the FBC. In contrast to wastewater and AIS, where the FBC has an ongoing relationship with the majority of the concerned agencies and stakeholders, for drought management the FBC will need to undertake initial outreach to (1) identify the parties of interest; (2) commence dialogue with concerned stakeholders; and (3) determine, based on the input provided from the stakeholders, if they are willing to engage in a drought planning process. In some sub-basins, stakeholders may be hostile to the concept of drought planning if it is perceived that it would interfere with existing water rights or existing uses of water (whether legally defensible or not). Therefore, in some sub-basins, a significant amount of time could be spent on developing relationships, and building trust, before the actual drought management planning effort could proceed. This is not to say that the effort should be avoided, but that the effort may require more outreach than originally planned in some cases.

Previous work that relates to implementing the proposed scope of work:

AIS Prevention: In 2009, the FBC convened the Flathead AIS Work Group, which consisted of federal, tribal, state and local agencies, along with non-profit organizations. The AIS Work Group developed and adopted the AIS Strategic Prevention Plan in 2010. Based on the goals and objectives of the 2010 AIS Plan, a variety of collaboration actions were undertaken including but not limited to:

- establishment of an AIS consultant fund;[13]
- watercraft inspection stations;[14]
- eDNA research;[15]
- AIS detection dogs;[16]



Wicket, one of four dogs trained to detect invasive mussels as part of a 2014 pilot program. Photo: Working Dogs for Conservation.

[13] Contributions and grants from members of the AIS Work Group (Lake County; Lake County Weed District; City of Whitefish; Flathead Lakers; Flathead Lake Protection Association; Whitefish Lake Institute; Flathead Conservation District, Swan Lakers, FBC, etc.) permit the Basin to hire a contractor to undertake necessary aquatic invasive plant mitigation work which has facilitated rapid response, kept costs low and increased the likelihood of successful outcomes in terms of full eradication.

[14] The Basin is increasing taking responsibility for AIS prevention efforts. Starting in 2013, the Basin is funding its own watercraft inspection stations. The inspection station at Coram operates 7 days per week, 10 hours per day, and is funded with contributions from: BOR Hungry Horse; City of Whitefish; MT DNRC; Whitefish Water and Sewer District; Trout Unlimited Flathead Chapter; and the FBC.

[15] Partnering with the U.S.F.S, the Flathead National Forest, and the University of Montana Flathead Lake Biological Station, the FBC commenced research on the use of eDNA to detect mussels to enhance early detection efforts.

[16] Working through the Crown Managers Partnership, the FBC and the Province of Alberta jointly funded a pilot program for the 2014 field season to train and test AIS detection dogs.

- AIS monitoring program;[17] and
- large landscape management efforts.[18]

Wastewater Management: Originally, Flathead County obtained a $100,000 grant from the Montana DNRC to convene the Flathead Regional Wastewater Management Group and hire a contractor to document all septic systems within the Flathead Basin.[19] When the Flathead County grant was expended, the FBC was asked by members to facilitate the FRWMG, and to assist the group in determining how to proceed. Currently, the FBC is working with the FRWMG to convene a September workshop in the Flathead to disseminate the findings from the Carver study. The FRWMG has also reached out to EPA/DEQ to discuss the possibility of developing a nutrient trading program for the Basin. In order to take this effort to the next level, funding is needed to develop an innovative, on-the-ground plan that could be used reduce nutrient loads.

Evaluation Criteria D: Watershed Group/Landscape Conservation Cooperatives Nexus.

Task B—Expansion of an Existing Watershed Group

The FBC participates in the GNLCC as a member of the transboundary Flathead Technical Committee and as a member of the AIS "Thinkers Group." The nexus between the FBC and the GNLCC is a strong one, as both organizations have identified AIS and the resiliency of the transboundary Flathead as key priorities. In addition, the FBC obtained funding from the GNLCC in 2013, via the Crown Managers Partnership, to undertake AIS prevention planning at the Crown of the Continent scale with Alberta and British Columbia. Those efforts are currently underway and it is anticipated that the components of the Crown of the Continent Strategic AIS Plan will be used as the basis of a Memorandum of Understanding between the two provinces and the State of Montana to enhance AIS protection, monitoring and response efforts.

See Map (figure 1.2) illustrating where the FBC's activities are focused in relation to the GNLCC

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[17] The FBC and Montana Fish Wildlife and Parks jointly fund the volunteer AIS monitoring program which is housed at the Whitefish Lake Institute (a local non-profit). The program focuses on veliger monitoring and aquatic invasive plant monitoring at 50 sites within the Basin.

[18] The FBC currently serves on the GNLCC technical committee and is working with GNLCC partners to identify initial steps to be taken to facilitate AIS prevention at the GNLCC scale.

[19] In addition to the septic systems GIS maps, the report produced by Carver Engineering included information on capacity, current use and future demand for 12 sewer districts with treatment plants. Carver also uncovered about 6,000 unpermitted septic systems bringing the total number of septic systems in the valley not connected to treatment plants to more than 20,000 (translating into about 4.1 million gallons of wastewater every day).

PROJECT BUDGET

BUDGET PROPOSAL

The following budget proposal is broken down by tasks to be completed. More specific information on this budget is included in the Budget Narrative, below.

Drought Planning Program				
	Funding Sources			
COSTS	CWMP	FBC Match	Parter Match	
Salaries and Wages		6000	10000	
Fringe				
Travel	2,000			
Equipment				
Supplies/Materials				
Contractual	28,000			
Reporting -	1,000			
Other				
Indirect Costs -	2,300			
Subtotal	**$33,800**	**$6,000**	**$10,000**	**$49,800**
Wastewater Strategy				
	Funding Sources			
COSTS	CWMP	FBC Match	Partner Match	
Salaries and Wages		2600	10000	
Fringe				
Travel	2,500			
Equipment				
Supplies/Materials				
Contractual	33,000			
Reporting	1,200			
Other				
Indirect Costs	2,000			
Subtotal	**$38,200**	**$2,600**	**$10,000**	**$40,800**
AIS Plan Expansion				

	Funding Sources			
COSTS	CWMP	FBC Match	Parter Match	
Salaries and Wages		1400	2000	
Fringe				
Travel	2,000			
Equipment				
Supplies/Materials				
Contractual	18,000			
Reporting	1,000			
Other				
Indirect Costs	2,000			
Subtotal	**$23,000**	**$1,400**	**$2,000**	**$36,400**
PROJECT TOTALS	**$95,000**	**$10,000**	**$22,000**	**$127,000**

BUDGET NARRATIVE

Salaries and Wages: Salaries and wages include match dollars provided by the project partners, listed earlier in this proposal. These estimates are detailed by task below:

- Drought Planning Program: Salary of the Program Manager, Caryn Miske of the Flathead Basin Commission (applicant) will be provided as a match. The estimated contribution for program management and oversight is about 170 hours ($6,000) during the duration of the project. Salaries considered match in time spent by the stakeholders (estimated $10,000) during the duration of the plan will include attending meetings, reviewing existing plans, reviewing and revising a new Flathead Dought Plan.
- Wastewater Strategy: Salary of the Program Manager, Caryn Miske of the Flathead Basin Commission (applicant) will be provided as a match. The estimated contribution for program management and oversight is about 75 hours ($2,600) during the duration of the project. Salaries matched in time spent by the stakeholders (estimated $10,000) during the duration of the plan will include attending meetings, reviewing existing plans, identifying and visiting research sites, assisting contractor with research design and implementation, reviewing and revising a Wastewater Plan.
- AIS Plan Expansion: Salary of the Program Manager, Caryn Miske of the Flathead Basin Commission (applicant) will be provided as a match. The estimated contribution for program management and oversight is about 40 hours ($1,400) during the duration of the project. Salaries matched in time spent by the stakeholders (estimated $2,000) during the duration of the plan will include meeting attendance, time revising and reviewing the new AIS Plan.

Fringe: There will be no fringe expenses.
Travel: Travel will be paid at the standard rate (currently $0.56/mile). This includes mileage by incurred by the contractor (yet to be determined) and the project manager to attend meetings and ensure the project is successfully completed. The estimates are broken down by task as follows:

- Drought Planning Program: $2,000 travel budget was estimated for travel to the Flathead from Missoula in the instance that a contractor from Missoula is hired to complete the project. Majority of the travel will be to attend stakeholder meetings.
- Wastewater Strategy: $2,500 travel budget was estimated for travel to the Flathead from Missoula in the instance that a contractor from Missoula is hired to complete the project. Majority of the travel will be to attend stakeholder meetings and visit research sites.
- AIS Plan Expansion: $2,000 travel budget was estimated for travel to the Flathead from Missoula in the instance that a contractor from Missoula is hired to complete the project. Travel will include mileage to and from stakeholder meetings.

Equipment: There will be no equipment expenses.

Supplies/Materials: There will be no supplies/materials expenses.

Contractual: All contracts in excess of $5,000 will comply with all state procurement procedures, including but not limited to the issuance of an RFP prior to the award of contracts or the commencement of related work. Therefore, specific names of contractors cannot be provided at this time. The following estimated contractual costs are broken down by task:

- Drought Management Plan: The contractor will recruit stakeholders and program participants and create a "confirmed" list; organize and facilitate stakeholder meetings, obtain recommendations and other input from the stakeholders to create a draft plan, facilitate interim stakeholder meetings to review draft plans and to create a final Drought Management Plan for the Flathead Basin with sub-basin detail. Estimated contractual cost to complete the project is $28,000 over a 24-month period.
- Wastewater Strategy: The contractor will organize and facilitate stakeholder meetings, gather information at meetings and draft recommendations to include in the Wastewater Strategy, research implementation tools, identify implementation sites, develop monitoring strategy, collect pre-monitoring data, prepare draft plan and facilitate interim meetings, and create a final Wastewater Management Plan. Estimated contractual cost to complete the project is $33,000 over a 24-month period.
- AIS Plan Expansion: The contractor will organize and facilitate stakeholder meetings to review the current Flathead AIS Plan, gather input and draft recommended changes to the plan, prepare draft and final plan and hold interim stakeholder meetings, and complete the final plan. The estimated contractual cost to complete the project is $18,000 over a 12-month period.

Reporting: Reporting will be completed by the Project Manager. Status reports, evaluations, and final reports will be completed at an estimated cost of $3,200 or approximately 3 percent of funds.

Other: There will be no Other expenses.

Indirect Costs: **The FBC is administratively attached to MT DNRC. DNRC requires as per state statute an indirect rate applied to all grants rec'd. The indirect rate is annually adjusted, and is currently at 6.89 percent or approximately $6,300 .**

APPENDIX: LETTERS OF SUPPORT

JON TESTER
MONTANA

COMMITTEES
APPROPRIATIONS
BANKING
INDIAN AFFAIRS
VETERANS' AFFAIRS
HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS

United States Senate

SENATE HART BUILDING
SUITE 706
WASHINGTON, DC 20510
202-224-2644

INTERNET:
http://tester.senate.gov/contact

June 3, 2014

Ms. Michelle Maher, Grants Officer
Bureau of Reclamation
United States Department of the Interior
P.O. Box 25007
Denver, CO 80025

Dear Ms. Maher,

I write in support of the Flathead Basin Commission's grant application: *Developing an Adaptive Watershed Management Plan to Address Climate Change Impacts.* The proposed scope of work will support local water quality protection efforts and bolster the economic and ecological resiliency of the Flathead watershed. Specific watershed plan components will include:

- development of a wastewater management plan;
- development of a drought management plan and
- expansion of the Aquatic Invasive Species Plan to prevent the introduction of zebra and quagga mussels into the headwaters of the Columbia Basin system, which will directly support the Great Northern Landscape Conservation Cooperative's related efforts.

The Flathead Basin Commission (FBC) was created in 1983 by the Montana Legislature to monitor and protect water quality and the natural resources in one of Montana's most important watersheds. The FBC is a uniquely structured non-regulatory organization that works to accomplish its mandate in a consensus-building manner, stressing education, cooperation, broadly based community involvement, partnerships with agencies and nonprofit groups, and the voluntary participation of Basin residents.

Thank you for your attention to this application. If I can provide any additional information, do not hesitate to contact me. Please inform my office of the eventual decision on this application.

Sincerely,

Jon Tester
United States Senator

BOZEMAN (406) 586-4450 | BUTTE (406) 723-3277 | GLENDIVE (406) 365-2391 | GREAT FALLS (406) 452-9585 | HELENA (406) 449-5401 | KALISPELL (406) 257-3360
BILLINGS (406) 252-0550 | MISSOULA (406) 728-3003

JOHN E. WALSH
MONTANA

WASHINGTON, DC
(202) 224-2651

WEBSITE:
http://www.walsh.senate.gov

United States Senate

WASHINGTON, DC 20510-2605

June 3, 2014

Ms. Michelle Maher, Grants Officer
Bureau of Reclamation
P.O. Box 25007
Denver, CO 80025

RE: R14AS00038
WaterSMART: Cooperative Watershed Management Program Grants for FY 2014
Department of the Interior
Bureau of Reclamation

Dear Ms. Maher:

I am pleased to provide this letter of support for the Flathead Basin Commission's grant application: *Developing an Adaptive Watershed Management Plan to address Climate Change Impacts.*

The Flathead Basin Commission (FBC) was created by the Montana State Legislature in 1983 to protect the waters that flow into, and out of, the Flathead Basin. The Flathead Basin is one of Montana's greatest national treasures and protecting it is critically important to the health of downstream ecosystems and the many Montanans with tourism and recreations jobs who depend on it for a livelihood. FBC has a strong track record of working to preserve and protect this pristine area for future generations.

If funded, FBC will use this grant to develop wastewater and drought management plans and expand their aquatic invasive species plan. These are vital steps in mitigating the effects of climate change on the Flathead Basin and protecting the headwaters of the Columbia Basin system from the introduction of zebra and quagga mussels.

Again, this project carries my support and I hope FBC's application is reviewed favorably. Please feel free to contact my office if I can provide further information. I would also greatly appreciate if you kept me informed of this request.

Sincerely,

John E. Walsh

JW/jj

BILLINGS (406) 657-6790 | BOZEMAN (406) 586-6104 | BUTTE (406) 782-8700 | GLENDIVE (406) 365-7002 | GREAT FALLS (406) 761-1574 | HELENA (406) 449-5480 | KALISPELL (406) 756-1150 | MISSOULA (406) 329-3123

THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION
P.O. BOX 278
Pablo, Montana 59855
(406) 275-2700
FAX (406) 275-2806
www.cskt.org

A People of Vision

A Confederation of the Salish,
Pend d' Oreilles
and Kootenai Tribes

May 27, 2014

Ms. Michelle Maher, Grants Officer
Bureau of Reclamation
P.O. Box 25007
Denver, CO 80025

RE: R14AS00038
WaterSMART: Cooperative Watershed Management Program Grants for FY 2014
Department of the Interior
Bureau of Reclamation

Dear Ms. Maher

We are pleased to support the Flathead Basin Commission's grant application: *Developing an Adaptive Watershed Management Plan to address Climate Change Impacts.* The proposed scope of work will facilitate local water quality protection efforts and will bolster the economic and ecological resiliency of the Flathead watershed. Specific watershed plan components will include the:

- development of a wastewater management plan;
- development of a drought management plan; and
- expansion of the Aquatic Invasive Species Plan to prevent the introduction of zebra and quagga mussels into the headwaters of the Columbia Basin system, which will directly support the Great Northern Landscape Conservation Cooperative's related efforts.

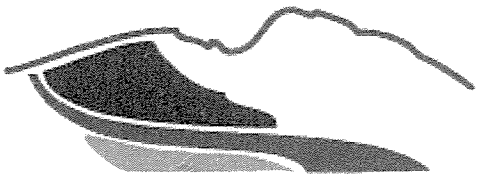
The Flathead Basin Commission (FB) was created by the State legislature in 1983 to protect the waters that flow into, and out of, the Flathead Basin. The FBC has a strong track record in the Basin, and we urge you to fund this worthwhile project.

Thank you for your consideration.

Sincerely,

Carole Lankford

Ronald Trahan, Chairman
Tribal Council



Great Northern
LANDSCAPE CONSERVATION COOPERATIVE

Ms. Michelle Maher, Grants Officer
Bureau of Reclamation
P.O. Box 25007
Denver, CO 80025

RE: R14AS00038
WaterSMART: Cooperative Watershed Management Program Grants for FY 2014
Department of the Interior
Bureau of Reclamation

Dear Ms. Maher

The Great Northern Landscape Conservation Cooperative (GNLCC) would like to express support for the Flathead Basin Commission's grant application: Developing an Adaptive Watershed Management Plan to address Climate Change Impacts. The project will facilitate local water quality protection efforts and will bolster the economic and ecological resiliency of the Flathead watershed. Specific watershed plan components will include the:

- development of a wastewater management plan;
- development of a drought management plan; and
- expansion of the Aquatic Invasive Species Plan to prevent the introduction of zebra and quagga mussels into the headwaters of the Columbia Basin system, which will directly support the Great Northern Landscape Conservation Cooperative's related efforts.

The Flathead Basin Commission (FB), created to protect the waters of the Flathead Basin, works to effectively promote the integrity of aquatic systems in the Basin. This aligns with the GNLCC goal for landscape and aquatic integrity. FB is also an active partner to the GNLCC. Please feel free to call me if you'd like to discuss or if you need further information about the Great Northern LCC.

Sincerely,

Yvette Converse
Coordinator, Great Northern LCC

Crown Managers Partnership

Ms. Michelle Maher, Grants Officer
Bureau of Reclamation
P.O. Box 25007
Denver, CO 80025

RE: R14AS00038
WaterSMART: Cooperative Watershed Management Program Grants for FY 2014
Department of the Interior
Bureau of Reclamation

Dear Ms. Maher

We are pleased to support the Flathead Basin Commission's grant application: *Developing an Adaptive Watershed Management Plan to address Climate Change Impacts.* The proposed scope of work will facilitate local water quality protection efforts and will bolster the economic and ecological resiliency of the Flathead watershed. Specific watershed plan components will include the:

- development of a wastewater management plan;
- development of a drought management plan; and
- expansion of the Aquatic Invasive Species Plan to prevent the introduction of zebra and quagga mussels into the headwaters of the Columbia Basin system, which will directly support the Great Northern Landscape Conservation Cooperative's related efforts.

The Flathead Basin Commission (FB) was created by the State legislature in 1983 to protect the waters that flow into, and out of, the Flathead Basin. The FBC has a strong track record in the Basin, and we urge you to fund this worthwhile project.

Thank you for your consideration.

Sincerely,

/s/ Mary Riddle

Mary Riddle
Chairperson
Crown Managers Partnership