

Table of Contents

- Mandatory Federal Forms
 - o Application for Federal Assistance, form SF-424
 - o Budget — Non-construction Programs, form SF-242A
 - o Assurances — Non-Construction Programs, form SF-424B
- Title page
- Table of contents
- Technical Proposal and Evaluation Criteria
 - o Executive summary
 - o Background data
 - o Project description
 - o Evaluation Criteria
- Letters of project support
- Required Permits and Approvals
- Applicant/Watershed Group Resolution
- Budget Proposal
 - o Budget Proposal
 - o Budget Narrative
- Appendixes
 - o Attachments

TECHNICAL PROPOSAL AND EVALUATION CRITERIA

EXECUTIVE SUMMERY

Sun River Watershed Group,
Cascade, Lewis and Clark, and Teton Counties,
Montana,
May 4th, 2016

Project Summary: The preliminary goal of the SRWG is to "Revise workplan to build long-term resiliency of the Sun River watershed." This will be accomplished by engaging in an innovative outreach and engagement plan, a online solution for gathering information from participants and the public in a manor that helps to overcome traditional barriers to participation as well as collaborative learning workshops. This basis will be used for a robust long-term planning process to enhance economic and ecological resilience. Frequent drought conditions and the continued need for water for multiple beneficial uses makes it critical to plan for the future. Now is a key time for the SRWG to engage in a project of this scope because of the retirement of the longtime coordinator as well as leadership and ownership changes among large water users.

- Length of time: 1 year
- Estimated completion date: September 30, 2017

BACKGROUND DATA

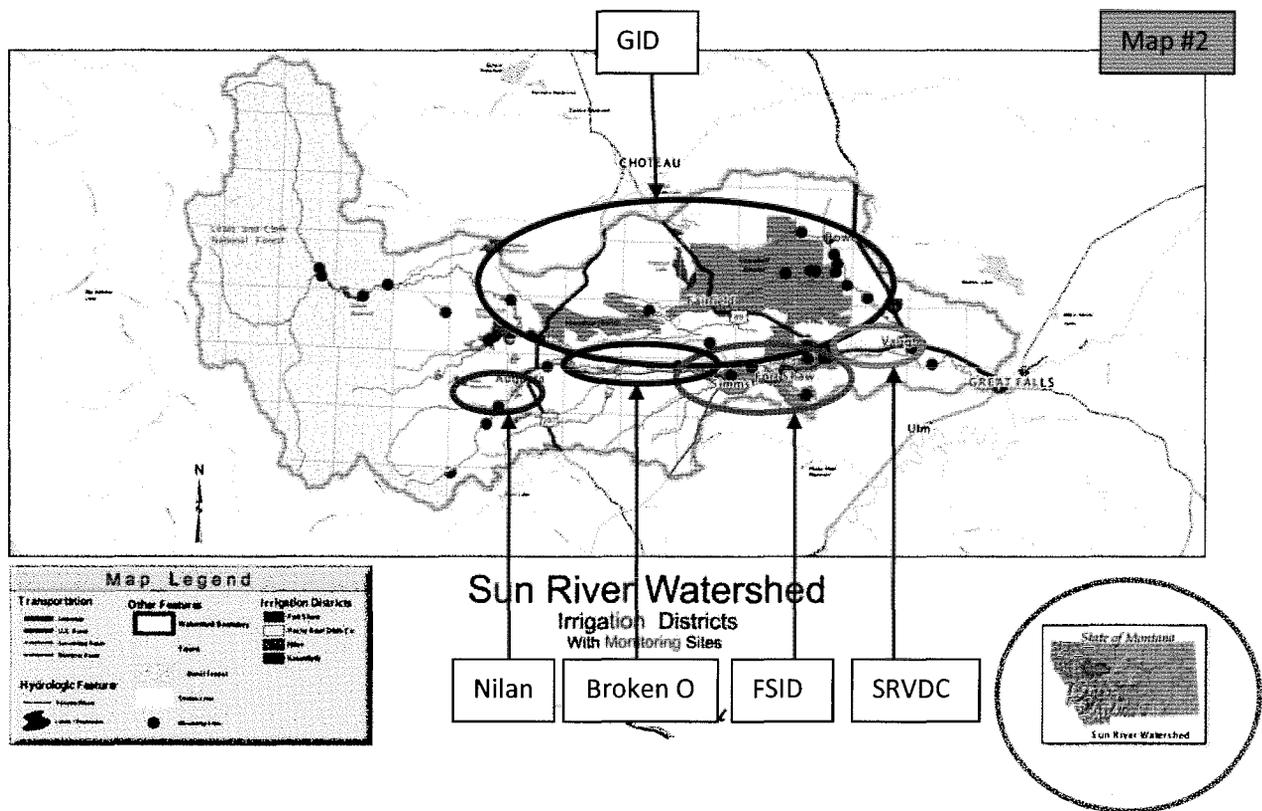
Watershed Description:

The Sun River Watershed is located east of the continental divide and south of Glacier National Park. It covers an area of 2,200 square miles (1,408,000 acres), with approximately 356 square miles (228,096 acres) in northwest Cascade County, 1,089 square miles (696,960 acres) in east Lewis & Clark County, and 755 square miles (482,944 acres) in southern Teton County (approximate figures only). The Sun River starts in the Bob Marshall Wilderness area and meanders out of the mountains through rolling grass-covered foothills and farmland to its confluence with the Missouri River at the City of Great Falls. Along the way, the river passes through the communities of Augusta, Simms, Fort Shaw, Sun River, Vaughn, and Sun Prairie Village.

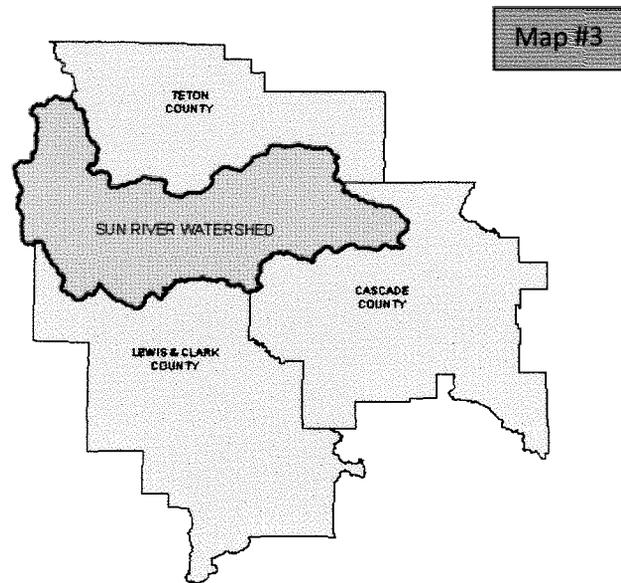
Land ownership and irrigated acreages in the Sun River Watershed (Acres)

US Forest Service	484,352
MT DNRC State lands	98,560
Reclamation lands.....	17,920
US BLM	5,120
US F&W	160
GID irrigated area	83,000
Broken O irrigated area	17,000
FSID irrigated area	12,000
Sun River Ditch Company irrigated area ..	3,200
Rocky Reef irrigated area	500
Urban	3,000
Other Private property	799,048

Geographic location: Map #2 shows the Sun River Watershed boundary, where it lies within the state map, the larger irrigation projects within the Sun River Watershed boundaries, and most communities.



Map #3 shows how the Sun River Watershed lies within the three counties it overlaps.



TECHNICAL PROJECT DESCRIPTION

Description of Applicant: The Sun River Watershed Group (SRWG) was formed in 1995 to address water quality, water quantity and noxious weed issues on the entire 1.4 million acres in the Sun River Watershed. In 1999 the SRWG became a legal corporation with the State of Montana and in 2004 was formally recognized as a non-profit organization by the U.S. Internal Revenue Service.

Per watershed group definition requirements in Section 1.B. the SRWG is comprised of representatives from all stakeholders that may be affected by water from the Sun River Watershed including federal agencies, state agencies, local agencies, hydroelectric production, irrigated agriculture, farming, ranching, recreation, community drinking water, individual landowners and ANYONE else that wants to participate. On page 11 under Subcriterion No. A1—Watershed Group Diversity is a more complete list of groups that participate in SRWG activities. Not all agencies, groups or individuals participate in all SRWG activities each year but are involved to the degree that best fits their role in watershed issues. The SRWG for 18 years has worked as a grassroots, non-regulatory group that works through a consensus based process to reduce natural resource conflicts at all levels.

Eligibility of Applicant: Per eligibility requirements in Section III.A. the Sun River Watershed is 1) located in western United States; 2) has significant water quality and quantity problems as identified through many public hearings; by the Montana Department of Environmental Quality on the state 303(d) impaired list for only partial or not supporting all uses caused by flow alterations, thermal modifications, siltation, suspended sediments, nutrients, habitat alterations, and salinity; by the Montana Fish, Wildlife & Parks on their Chronically Dewatered List; and actual water right wars through the Montana Water Court for the past 30 years and 3) has shown ability to promote sustainable use of water resources for the past 18 years finding win-win solutions through teamwork, resolving several complex water quality and quantity problems including the reduction of a top Montana nonpoint source pollution erosion problem on Muddy Creek by reducing sediment loads 80% from 200,000 tons of sediment annually to 27,000 tons annually and increasing winter flows from almost 0 to over 100 cfs coming close to meeting the minimum flow desired by the Montana Fish, Wildlife & Parks to meet fish and aquatic life needs.

Goals: Task B— Further Developing an Existing Watershed Group

The preliminary goal of the SRWG is to "Revise workplan to build long-term resiliency of the Sun River watershed." The current benchmarks for meeting the mission of the organization are: 1) Development of watershed management project concepts that conserve water and improve ecological resilience by securing enough water savings to meet the minimum instream flow target of 130 cfs in Sun River while meeting needs for all other water users in the watershed, 2) reduce conflicts over water by collaboratively evaluating the future of the watershed while developing a revised 10-year workplan.

Approach:

- **Information gathering:** The SRWG will review past studies and reports regarding the Sun River. These studies, to the extent practicable, will be made available in an online portal for access and transparency. The Sun River Watershed Group will engage in a facilitated process of "collaborative learning" while engaged in information gathering, obtaining data, and performing modeling. This process will involve bringing partners and stakeholders together to ask questions of the data, identify gaps in knowledge, and build consensus regarding threats to ecological and social resiliency in the watershed. The resulting product will be used for developing goals and benchmarks for the restoration plan. The coordinator will spend 100 hours working with partners to gather, assess, and make available data relevant to the planning process. The SRWG will hold two facilitated collaborative learning workshops. The information gathering phase will be executed between October 2016 and January 2017.
- **Developing a mission statement, forming articles of incorporation, and hiring a coordinator:** The SRWG has developed a mission statement, formed articles of incorporation, and hired a coordinator. The long-time coordinator retired in March, 2016, placing further emphasis on the need for the SRWG to engage in a robust

planning process in order to maintain cooperation for pursuing the goals of this program.

- **Conducting outreach to establish or further develop membership of the watershed group, including efforts to ensure the diversity of the group:** The SRWG will ensure continued and expanded diversity of participation in the watershed effort by developing and implementing an outreach and engagement plan that includes 1) hosting a watershed Engagement and Outreach event that will invite all existing watershed partners, reach out to other groups that may be interested, publicize the event in the local media, and send out a notice to all landowners who live in the watershed. This forum will describe current and past efforts to resolve natural resource problems and seek input on what future activities should be considered. The Engagement and Outreach event will include a small group engagement activity designed to assess goals for the future of the Sun River watershed. And, 2) Launch an online public engagement tool (as part of the project portal) that allows stakeholders, partners, and members of the public to articulate risks to resiliency, as well as goals and benchmarks, both spatially and temporally. To accomplish this task, the SRWG coordinator will spend 160 hours working with watershed partners from October 2016 through January 2017 to prepare and host the forum, to coordinate the forum with the collaborative learning workshops, to insure diversity of participants in the forum and collaborative learning process. The SRWG will contract for the deployment of the online engagement tool that will utilize an established and zero-cost platform.
- **Identifying problems and needs within the given watershed:** The SRWG will make a renewed assessment of problems and needs within the watershed with a focus on long-term resilience through, 1) engaging in a review of past studies and reports that identifies problems previously missed, 2) implementation of the engagement and outreach plan will allow participants to identify problems not brought up during previous events and planning, 3) launching an online engagement tool and 4) facilitated collaborative learning workshops focused on building consensus around the risks/threats to resiliency. The coordinator will spend 160 hours working with watershed partners from October 2016 through March 2017 to develop and circulate a report on results of these four visioning processes. This report will highlight aspirations for watershed resilience and problems and needs that must be addressed in order to achieve those goals.
- **Developing a watershed restoration plan, including establishing goals and identifying and evaluating potential watershed management projects:** The SRWG will use the goals as well as the risks identified in the visioning report as a framework for developing a watershed restoration plan, which will include a 10-year workplan. To accomplish this task, the full Sun River Watershed Group will, by consensus, establish a list of goals for watershed resilience. The group will assign goals to one of several workgroups. These workgroups will identify and evaluate potential watershed management projects that will achieve these goals. The workgroups will also establish monitoring metrics at 3 and 10 years for each goal. The SRWG coordinator will assist the SRWG and assigned workgroups to establish the list of goals, reports on watershed management projects to achieve those goals, and

monitoring metrics during the period of April to September (400 hours). These documents will be compiled into a watershed plan.

- **Creating a plan of action for the timing of the implementing the four activities described in Section III.C. *Eligible Activities*:** The Sun River Waterhead group and partners will be asked to develop and commit to a plan of action for the timing of the implementing of the relevant activities described in SECTION III.C based on the timeline presented in the project proposal. The SRWG coordinator will provide 100 hours of assistance in project management.
- **Developing a final report:** The workgroups will assist the full SRWG from January through February 2017 to create a final report for all partners to agree on as a tool to meet the goal of building resilience of ecological and social systems in the watershed. The SRWG coordinator will spend 80 hours assisting writing the final report.
- **Length of time and estimated completion date for the proposed work:** The full length of the project is expected to extend from October 2016 to September 2017.

EVALUATION CRITERIA

Evaluation Criterion A: Watershed Group Diversity and Geographic Scope

Sub-criterion No. A1. Watershed Group Diversity:

The entire list of active participants in the Sun River watershed effort varies from year-to-year depending upon the projects and activities at the time. Due to the recent change in coordinator and turnaround on this grant, not all groups were able to furnish letters of support. However, the SRWG consistently has maintained diversity through participation from all affected stakeholders in all of the relevant sectors identified in the definition of a “watershed group” provided in Section I.B. Objective of the Funding Opportunity Announcement, including: many individual landowners, Bureau of Reclamation, Forest Service, Bureau of Land Management, United States Geological Survey, Fish & Wildlife Service, Natural Resource Conservation Service, Montana Bureau of Mines and Geology, Montana Department of Agriculture, Montana Department of Natural Resource and Conservation, Montana Department of Environmental Quality, Montana Fish, Wildlife & Parks, Montana Department of Transportation, Natural Resource Information System, Greenfields Irrigation District, Fort Shaw Irrigation District, Nilan Water Users, Sun River Valley Ditch Company, Broken O Ranch, Power Water and Sewer District, Town of Fairfield, Fairfield Science Club, Town of Vaughn, City of Great Falls, Cascade County, Teton County, Cascade Conservation District, Lewis & Clark Conservation District, Teton Conservation District, Cascade County Weed District, Lewis & Clark Weed District, Teton County Weed District, Trout Unlimited, Missouri River FlyFishers, Medicine River Canoe Club, Lower Sun River Flood District, Great Falls Corvette Club, Steel Etc Recycling, Montana Pacific Power & Light, Northwestern Energy, 3 Rivers Electric, Montana State University Extension Service, Muddy Creek Task Force, Girl Scouts, and Malmstrom Air Force Base.

Past successes by the Sun River Watershed group have been based on collaboration and the personal trust and relationships built through working together. This is a critical time in the health of this watershed effort because of the change in coordinator. This proposed project includes actions to solidify a diverse group of active participants by providing an opportunity for outreach and engagement through a structured outreach and engagement plan. The proposal also includes launching an online engagement and planning tool that will help to reduce time, resource, and geographic hindrances to participation.

Sub-criterion No. A2. Geographic Scope:

The Sun River Watershed Group is engaged with water quality and water quantity projects on the entire 1,408,000 acres in the Sun River Watershed. The SRWG's over-arching goal is to take a holistic approach in solving natural resource issues. On water quality and quantity issues the SRWG is working on projects that address the entire 110 miles of the Sun River mainstem from the headwaters in the Bob Marshall Wilderness to its confluence with the Missouri River at the City of Great Falls, Montana. The SRWG is also involved with projects on all major tributaries that may have an impact on the Sun mainstem including Elk Creek, Big Coulee, Adobe Creek, Mill Coulee, and Muddy Creek. The SRWG's Water Quality Workgroup uses the Sun River TMDL as a tool to strive to improve the health of the Sun River and its tributaries to adequately support all beneficial uses. The SRWG's Water Management Workgroup looks at the entire Sun River water budget to meet the needs of fish, communities and agriculture.

Examples of the geographic scope of SRWG projects from the headwater to the confluence, include 1) Forest Service on forest management projects including controlled burns to reduce chances of catastrophic fires that have long-term impacts in spring runoff timing and quality, noxious weed control to improve the health of native vegetation and climate change monitoring to identify long-term effects on the timing in spring run-off; 2) Augusta area landowners on Elk Creek stream diversion projects allowing irrigators to obtain their legal water allocation while reducing time spent in repairing irrigation diversions; 3) Nilan Water Users on canal lining projects to conserve water so there is more water to go around during water short years; 4) Willow Creek erosion control to reduce sediment loads into Willow Creek reservoir; 5) Greenfields Irrigation District, water conservation projects to conserve water while reducing water runoff that causes water quality problems; 6) Fort Shaw Irrigation District on water conservation projects to conserve water while reducing water runoff that causes water quality problems; 7) Freezout Lake project that lined 5 miles of GID canals to reduce saline seep into a nationally renowned waterfowl management area; 8) Broken O Ranch on water conservation projects to conserve water while reducing water runoff that causes water quality problems; 9) Big Coulee erosion control projects to reduce huge sediment loads from entering the Sun River near Simms; 10) Adobe Creek water management projects to reduce large quantities of salinity from entering the Sun River; 11) Sun River Valley Ditch Company on water conservation projects to conserve water while reducing water runoff that causes water quality problems; 12) Muddy Creek erosion control to reduce sediment into the Sun River from one of the worst nonpoint source pollution problems in the state; and 13) lower Sun River replacing over 500 old cars with native vegetation.

The current membership is geographically diverse. Organization by-laws require to organization's executive committee to include individuals from each of the three counties in which the watershed is located. The proposed outreach plan and outreach implementation will aid in maintaining and expanding the geographic scope of the watershed group. The spatial data and feedback collected to through the proposed online engagement tool will allow the SRWG to take a geospatial approach to goal formation and problem identification through participatory mapping.

Evaluation Criterion B: Addressing Critical Watershed Needs

Sub-criterion No. B1. Critical Watershed Needs or Issues:

Water Quality: The Montana Department of Environmental Quality list the Sun River and several tributaries on the state impaired list per section 303(d) of the Clean Water Act. The impaired conditions include not supporting all uses, flow alterations, thermal modifications, siltation, suspended sediments, nutrients, habitat alterations, and salinity. See attached map for impaired Sun River watershed waterbodies.

The Montana TMDL for the Sun River Planning Area (2004) clearly outlines these critical water quality issues. The SRWG has also aggressively monitored water quality on the Sun River and all major tributaries enabling strategic use of resources to clean up all water quality problems. See attachment for Montana State University water quality and quantity studies as examples of detailed monitoring.

The easiest projects for improving water quality have largely been addressed, meaning that more complex and integrated solutions are required in order to continue to make progress toward improved water quality.

Water Quantity: Irrigated agricultural producers in the watershed experience water shortages most years with approximately 30,000 acre-feet needed yearly to meet full irrigation needs. The frequency of drought conditions risks conflict over water and threatens the adequacy of instream flows.

Montana Fish, Wildlife & Parks has placed the Sun River on the Chronically Dewatered Stream List and reports that the watershed has problems supporting a healthy fish population. This water shortage for fish is approximately 5,000 acre-feet per year. See technical proposal for charts indicating continued inadequate instream flow conditions. While progress has been made over the years at meeting instream flow targets, lean water years have proven that currently implemented solutions are not sufficient. As precipitation conditions change, it becomes only more important to address instream flow conditions during challenging drought conditions.

Subcriterion No. B2. Watershed Group Contributions that Address Watershed Needs or Issues

The SRWG will address critical issues and needs in the watershed by devolving a 10-yr Watershed Plan based on assessment of current and future watershed conditions, collaborative learning, and through project evaluation. The watershed group has been successful to date at working to solve complex issues and needs. These accomplishments include:

- 1)1996; Established first SRWG watershed-wide workplan
- 2)2004; Completed Sun River TMDL to give direction on improving water quality
- 3)2006; Major rewrite of workplan asking for public input on problems and solutions
- 4)2006-2010; Montana State University studies on Muddy Creek return flow and sediment
- 5)2008-2009; Montana State University studies on Big Coulee return flow and sediment
- 6)2008; Montana State University study on Freezout return flow and water quality
- 7)2011; Water Restoration Plan developed but did not tie all the pieces together
- 8)2009-2012; Reclamation funding assistance to find ready to start water conservation projects. See attachment for map of proposed projects.
- 9)Annually; water quality and quantity monitoring across the watershed. See attachment for watershed monitoring map.

The easiest projects for improving water quality have largely been addressed, meaning that more complex and integrated solutions are required in order to continue to make progress toward improved water quality.

Water Quantity: Irrigated agricultural producers in the watershed experience water shortages most years with approximately 30,000 acre-feet needed yearly to meet full irrigation needs. The frequency of drought conditions risks conflict over water and threatens the adequacy of instream flows.

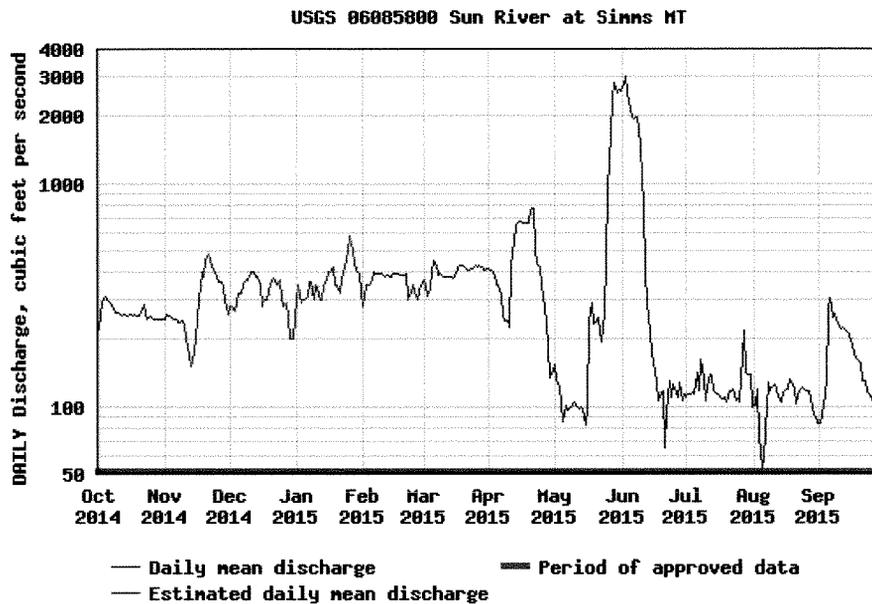
Montana Fish, Wildlife & Parks has placed the Sun River on the Chronically Dewatered Stream List and reports that the watershed has problems supporting a healthy fish population. This water shortage for fish is approximately 5,000 acre-feet per year. See technical proposal for charts indicating continued inadequate instream flow conditions. While progress has been made over the years at meeting instream flow targets, lean water years have proven that currently implemented solutions are not sufficient. As precipitation conditions change, it becomes only more important to address instream flow conditions during challenging drought conditions.

Subcriterion No. B2. Watershed Group Contributions that Address Watershed Needs or Issues

The SRWG will address critical issues and needs in the watershed by devolving a 10-yr Watershed Plan based on assessment of current and future watershed conditions, collaborative learning, and through project evaluation. The watershed group has been successful to date at working to solve complex issues and needs. These accomplishments include:

- 1)1996; Established first SRWG watershed-wide workplan
- 2)2004; Completed Sun River TMDL to give direction on improving water quality
- 3)2006; Major rewrite of workplan asking for public input on problems and solutions
- 4)2006-2010; Montana State University studies on Muddy Creek return flow and sediment
- 5)2008-2009; Montana State University studies on Big Coulee return flow and sediment
- 6)2008; Montana State University study on Freezout return flow and water quality
- 7)2011; Water Restoration Plan developed but did not tie all the pieces together
- 8)2009-2012; Reclamation funding assistance to find ready to start water conservation projects. See attachment for map of proposed projects.
- 9)Annually; water quality and quantity monitoring across the watershed. See attachment for watershed monitoring map.

Despite these successes, critical issues and needs remain to be solved. Projects to date have not yet ensured adequate instream flows annually. The availability to prevent water conflicts is threatened by drought conditions like to be present in the future. Past accomplishments have been possible because of a strong sense of cooperation and the development of trust and personal relationships. This is a critical time to engage existing and new partners because of the change in coordinator as well as leadership and ownership of key water users. By engaging in a planning process aimed at addressing the critical issues and needs of the present as well as for the next ten years. By facilitating a process of collaborative learning and subsequent long-term planning plans to enhance collaboration between existing stakeholders in addressing the previously mentioned critical issues.



Graph courtesy of the U.S. Geological Survey

Graph #1 Shows that previous projects and planning have not yet resulted in meeting instream flow targets of 130cfs on a constant basis.

Evaluation Criterion C: Implementation and Results

Subcriterion No. C1—Understanding of and Ability to Meet Program Requirements

- See Technical Proposal and Budget Narrative for details regarding budgeting Subsection 2B Addresses previous projects.

Subcriterion No. C2—Building on Relevant Federal, State, or Regional Planning Efforts

Please describe how the proposed activities of the watershed group will complement or meet the goals of applicable Federal, State or regional water plans. Such plans may include but are not limited to:

Existing plans have, and continued to be used by the Sun River Watershed Group for planning and project evaluation. The 2004 Montana TMDL for the Sun River Planning Area provides recommendations for improving water quality and supporting all beneficial uses. Previous SRWG Workplans include projects that are identified in the Greenfields Irrigation District and

Fort Shaw Irrigation District Water Management plans. These plans, as well as previous SRWG planning efforts will be reviewed and utilized in development of the 10-yr Watershed Plan.

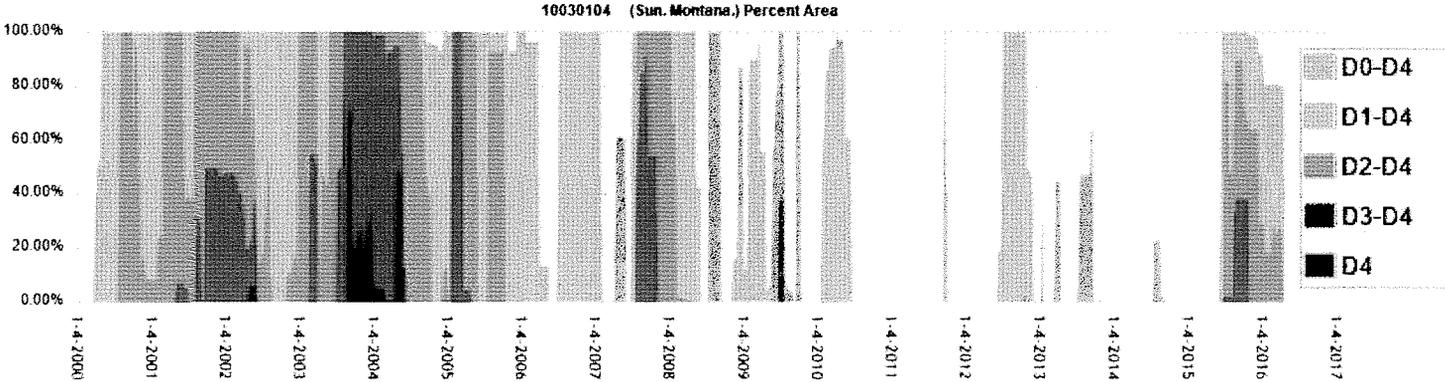
The proposed planning process will be the first opportunity to evaluate needs, issues, and potential projects with the guidance of the 2015 Montana State Waterplan, the first revision in decades. The State Water Plan outlines sixty recommendations for a watershed approach to working toward accomplishing the following goals over the next twenty years: be better prepared to manage water in real-time to adjust to seasonal changes in supply and demand as well as prepare for longer term climatic changes; be better able to protect existing; and senior water right holders while continuing to improve the state’s ability to allocate water to meet new demands; be better prepared to endure droughts in watersheds across the state; be better able to supply water to serve the needs of a growing population and thriving economy as well as the natural systems, habitats, and species that our state is renowned for; and have a public that better understands the dynamics of our water supply and the water rights system they rely upon every day.

The SRWG planning process will additionally build from large landscape approach being taken to address issues in the Crown of the Continent Ecosystem (CCE). The CCE is a large, jurisdictionally complex, and environmentally and socially important landscape. Efforts have coalesced to encourage partnerships, information sharing, and coordination management across the CCE. The Crown Managers Partnership has published a Strategic Conservation Framework will help guide the SRWG is assessing how the watershed exists as part of a landscape and regional scale.

Evaluation Criterion D: Building Resilience to Drought

Task B—Further Development of an Existing Watershed Group.

- As the following chart shows, the Sun River has faced frequent drought conditions. Drought conditions impact the ability to maintain instream flows as well as impacts the economic potential of local agriculture. The GFID alone averages more that \$45 million in economic output. Drought, and persistent drought conditions are like to be present in the future. This project takes seriously the need to address and plan for drought impacts so that even in low water years the Sun River is able to meet multiple beneficial uses.



Chart# 2- Drought conditions per the U.S. Drought Monitor

LETTERS OF PROJECT SUPPORT

See attachment

REQUIRED PERMITS OR APPROVALS

N/A

APPLICANT/WATERSHED RESOLUTION

See attachment

PROJECT BUDGET

BUDGET PROPOSAL

Funding Sources	Funding Amount
Non-Federal Entities	
1. Sun River Watershed Group	\$41,500
2.	
3.	
Non-Federal Subtotal	\$41,500

Funding Sources	Funding Amount
Other Federal Entities	
1.	
2.	
3.	
Other Federal Subtotal	\$0
Requested Reclamation Funding	\$31,000
Total Study Funding	\$72,500

Budget Item Description	Computation		Quantity Type (hours/days)	Total Cost
	\$/Unit	Quantity		
Salaries and Wages				
In-kind contribution - partners	\$40/hr	1000	Hours	\$ 40,000
				\$ -
				\$ -
Fringe Benefits				
				\$ -
Travel				
Local Travel for coordinator	\$0.50	1000	Miles	\$ 500
				\$ -
				\$ -
Equipment				
				\$ -
Materials/Supplies				
Copies	\$0.20	5000	Pages	\$ 1000
				\$ -
Contractual/Construction				
Coordinator	\$25.00	1000	Hours	\$ 25,000
Facilitator for Outreach Event	\$175.00	34.3	Hours	\$ 6,000
Other				
Total Direct Costs				\$ 72,000
Indirect Costs - %				\$ 0
Total Project Costs				\$ 72,000

- **Salaries and Wages** - The SRWG through our watershed partners will contribute \$40,000 in-kind services. This will be accomplished by all watershed partners contributing 1,000 hours at approximately \$40 per hour for all tasks. Tasks details below:

- *Information gathering* - The SRWG will review and expand its comprehensive library of past studies and reports. SRWG will participate in two collaborative learning workshops. To accomplish this task the SRWG partners will spend the 100 hours working in the period from October 2016 through January 2017.
 - Partners in-kind match - 100 hours @ \$40/hour = \$4,000
- *Outreach* - The SRWG will ensure a true diversity of members continue to participate in the watershed effort by developing an outreach and engagement plan which will include hosting an outreach and engagement event in January 2017. To accomplish this task the SRWG partners will spend the 200 hours working with watershed partners from October 2016 through January 2017 to prepare the plan and host the event.
 - Partners in-kind match - 200 hours @ \$40/hour = \$8,000
- *Identify problems* - The SRWG will expand the current list of known problems as shown in attachment showing a review of previous studies, outreach and engagement, and collaborative learning workshops. To accomplish this task the SRWG partners will spend the 200 hours working from October 2016 through March 2017.
 - Partners in-kind match - 200 hours @ \$40/hour = \$8,000
- *Develop watershed restoration plan* - The SRWG will use the problems list compiled from above tasks to develop a 10-Year Watershed Plan. To accomplish this task the SRWG Workgroups will work from April through September 2017 to identify which problem items they are able to establish goals, objectives, and project tasks with clear outcomes. The SRWG partners will spend 400 hours during April through September 2017 assisting Workgroups and the full SRWG to develop the 10-Year Watershed Plan.
 - Partners in-kind match - 400 hours @ \$40/hour = \$16,000
- *Create plan of action for implementation timing* - While working on the project the full SRWG and Workgroups will establish realistic timelines to implement the proposed activities. The SRWG partners will spend 50 hours during October 2016 through September 2017 assisting the Workgroups and full SRWG develop and maintain the implementation timeline.
 - Partners in-kind match - 50 hours @ \$40/hour = \$2,000
- *Develop final report* - The workgroups will assist the full SRWG from August through September 2017 to create a final report. The SRWG partners will spend 50 hours assisting writing the final report.
 - Partners in-kind match - 50 hours @ \$40/hour = \$2,000

- **Fringe Benefits** - Combined in the approximate wage calculation above

- **Travel** -

- *Information gathering* - The SRWG coordinator will travel to the partner's offices and meeting sites to work on information gathering activities. No travel anticipated for partners.
 - SRWG cash match for SRWG coordinator - 200 miles @ \$.50/mile = \$100
- *Outreach* - The SRWG coordinator and partners will travel to the meetings to accomplish outreach and event.
 - SRWG cash match for SRWG coordinator - 200 miles @ \$.50/mile = \$100
- *Identify problems* - The SRWG coordinator will travel to meetings to work on problems and goals report.
 - SRWG cash match for SRWG coordinator - 200 miles @ \$.50/mile = \$100
- *Develop watershed restoration plan* - The SRWG coordinator will travel to meetings to work on the 10-Year Watershed Plan.
 - SRWG cash match for SRWG coordinator - 200 miles @ \$.50/mile = \$100
- *Create plan of action for implementation timing* - Everyone's travel for this task will be combined with their work on other tasks. No costs. \$0
- *Develop final report* The SRWG coordinator will travel to meetings to work on final report.
 - SRWG partners in-kind match for staff - 200 miles @ \$.50/mile = \$100

- **Equipment** - No special equipment will be used - \$0

- **Materials and Supplies**

- *Information gathering* - Copying documents, many are color copies @ \$.20 each
 - SRWG cash match for copies - 1,000 pages at \$.20 per copy = \$200
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0
- *Outreach* - Copying documents
 - SRWG cash match for copies - 1,000 pages at \$.20 per copy = \$200
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0
- *Identify problems* - Copying documents
 - SRWG cash match for copies - 500 pages at \$.20 per copy = \$100
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0
- *Develop watershed restoration plan* - Copying documents
 - SRWG cash match for copies - 500 pages at \$.20 per copy = \$100
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0

- Create plan of action for implementation timing - Copying documents
 - SRWG cash match for copies - 500 pages at \$.20 per copy = \$100
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0
- Develop final report - Copying documents
 - SRWG cash match for copies - 1,500 pages at \$.20 per copy = \$300
 - Reclamation watershed grant for copies - 0 pages at \$.20 per copy = \$0

Contractual - The SRWG coordinator will accomplish all tasks totaling 1,000 hours at \$25 per hour. Tasks details below:

- *Information gathering* - The SRWG will review and expand its comprehensive library of past studies and reports. SRWG will participate in two collaborative learning workshops. To accomplish this task the SRWG coordinator will spend the 120 hours working in the period from October 2016 through January 2017.
 - Reclamation watershed grant - SRWG coordinator 100 hours @ \$25/hour = \$2,500
- *Outreach* - The SRWG will ensure a true diversity of members continue to participate in the watershed effort by developing an outreach and engagement plan which will include hosting an outreach and engagement event in January 2017. To accomplish this task the SRWG coordinator will spend the 160 hours working with watershed partners from October 2016 through January 2017 to prepare the plan and host the event, and to launch website engagement tool. Preparing data to present at the forum will be a key coordinator task. The Sun River Watershed Group will contract with a qualified neutral facilitator to provide services for the outreach and engagement event. Rates for facilitator contract is based on analysis of the National Roster of ECR Professionals provided by the US Institute for Environmental Conflict Resolution.
 - Reclamation watershed grant - SRWG coordinator 160 hours @ \$25/hour = \$4,000
 - Reclamation watershed grant - Facilitator 34.3 hours @ \$175/hour = \$6,000
- *Identify problems* - The SRWG will expand the current list of known problems as shown in attachment based on review of previous studies, outreach and engagement, and collaborative learning workshops. To accomplish this task the SRWG coordinator will spend the 160 hours working with watershed partners from October 2016 through March 2017 to compile a final list of known problems and goals.
 - Reclamation watershed grant - SRWG coordinator 160 hours @ \$25/hour = \$4,000
- *Develop watershed restoration plan* - The SRWG will use the problems list compiled from above tasks to develop a 10-Year Watershed Plan. To accomplish this task the SRWG Workgroups will work from April through September 2017 to identify which problem items they are able to establish goals, objectives, and project tasks with clear outcomes. The SRWG coordinator will spend 400 hours during April through September 2017 assisting Workgroups and the full SRWG to develop the 10-Year Watershed Plan.
 - Reclamation watershed grant - SRWG coordinator 400 hours @ \$25/hour = \$10,000
- *Create plan of action for implementation timing* - While working on the project the full SRWG and Workgroups will establish realistic timelines to implement the proposed activities. The SRWG coordinator will spend 100 hours during October 2016 through September 2017 assisting the Workgroups and full SRWG to develop and maintain the implementation timeline.
 - Reclamation watershed grant - SRWG coordinator 100 hours @ \$25/hour = \$2,500
- *Develop final report* - The workgroups will assist the full SRWG from August through September 2017 to create a final report. The SRWG coordinator will spend 80 hours assisting writing the final report.
 - Reclamation watershed grant - SRWG coordinator 80 hours @ \$25/hour = \$2,000

Reporting: The Sun River Watershed coordinator will be responsible for all reporting.

- Reclamation watershed grant - SRWG coordinator - 20 hours @ \$25/hour = \$500

Other - No other costs - \$0

Indirect Costs - No indirect costs - \$0

Total Project Cost: \$72,500

- SRWG in-kind match = \$40,000

- SRWG cash match = \$1,500

- Reclamation watershed grant = \$31,000



Sun River Watershed

RESOLUTION
Sun River Watershed Group
Executive Committee
Great Falls, MT 59404

RESOLUTION SPONSORING BUREAU OF RECLAMATION 2016 COOPERATIVE WATERSHED MANAGEMENT PROGRAM GRANT

WHEREAS, Sun River Watershed Group is the local non-profit authority formed to work collaboratively with all interested groups on issues in the Sun River Watershed, and

WHEREAS, Sun River Watershed Group's overall role is to find consensus to resolve natural resource issues in the Sun River Watershed, therefore

BE IT RESOLVED, the Sun River Watershed Group's Executive Committee has reviewed and authorizes Kevin Stone, the SRWG coordinator to be the key contact and to pursue a 2016 Bureau of Reclamation grant through the Cooperative Watershed Management Program, that Kevin Stone has legal authority to enter into an agreement. And,

BE IT FURTHER RESOLVED, the Sun River Watershed Group's Executive Committee by the authority given to it by the State of Montana is committing the necessary resources and funds to complete the project on the timeline presented in the proposal and that the Sun River Watershed Group will work with Reclamation to meet established deadlines for entering into a financial assistance agreement.

Dated this 2nd day of May, 2012.



President



550 7th Lane NE
Fairfield, MT 59406

April 28, 2016

Sun River Watershed Group
816 Grizzly Drive
Great Falls, MT 59404

To Whom It May Concern:

I would like to go on record supporting the Sun River Watershed Group's (SRWG) Bureau of Reclamation Cooperative Watershed Management Program grant application for long-term planning of the needs and necessary projects to maintain and improve the Sun River Watershed. The health of this watershed is vital to the agriculture economy through its irrigation practices, livestock watering, and municipal use. In addition this resource is required for wetland protection, waterfowl habitat, other wildlife habitat, and recreation. In summary the demand for quality water is great and ever-increasing. There is no substitute for it.

The SRWG's mission of using teamwork to protect and enhance this resource is a valuable asset to the surrounding communities. The Group seeks to achieve win-win solutions in conserving, protecting and managing the use of the water. The SRWG is the most effective entity in bringing the water users together to compromise and achieve a common good.

Therefore, I am in full support and will actively participate in the effort to plan and improve the SRWG's efforts.

Sincerely,



Michael Konen
Agriculture producer and SRWG Executive Committee Member

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION



STEVE BULLOCK
GOVERNOR

DIRECTOR'S OFFICE (406) 444-2074
TELEFAX NUMBER (406) 444-2684

STATE OF MONTANA

WATER RESOURCES DIVISION (406) 444-6601
TELEFAX NUMBERS (406) 444-0533 / (406) 444-5918
<http://www.dnrc.mt.gov>

1424 9TH AVENUE
PO BOX 201601
HELENA, MONTANA 59620-1601

May 4, 2016

Sun River Watershed Group
816 Grizzly Drive
Great Falls, MT 59404

To Whom It May Concern:

I am writing this letter to express the Montana DNRC's support for the Sun River Watershed Group's WaterSMART Cooperative Watershed Management Program grant application. The Sun River Watershed Group is one of the oldest and most active watershed groups in Montana and has been working with a diverse group of stakeholder since 1994 to implement, by consensus, projects that enhance Sun River flows, reduce suspended sediments, and improve irrigation water management. Under the direction of its recently retired long-term coordinator Alan Rollo, the group has achieved many successes but there is still much work to do.

With the hiring of a new watershed group coordinator and changes in key land owners and other major stake holders in the watershed, it's time to take a long-term approach by developing a 10-year plan that defines the water management goals for the Sun River Watershed Group. As is the case for many of our streams, water demands from the Sun River often exceed the available water supply and improving the flow of the Sun River is an unfinished task that the group will need to continue to monitor and incrementally work on into the foreseeable future.

The funding provided by this grant will be crucial in sustaining the group's organization and efforts. Please give this grant application the highest consideration so that the Sun River Watershed Group can continue improving water management in the Sun River basin for the benefit of all users.

Sincerely,

A handwritten signature in black ink, appearing to read "Tim Davis", with a long horizontal flourish extending to the right.

Tim Davis
Water Resources Division Administrator



Laura Ziemer
Senior Counsel and Water Policy Advisor

May 2, 2016

Kevin Stone, Coordinator
Sun River Watershed Group
816 Grizzly Drive
Great Falls, MT 59404
Via electronic mail kevin.srwg@gmail.com

Re: Trout Unlimited Letter of Support for Sun River Watershed Group Proposal

Dear Bureau of Reclamation:

Trout Unlimited has partnered with the Sun River Watershed Group since 1998, soon after its inception, to find solutions to difficult water scarcity problems in ways that work for both agriculture and conservation. Trout Unlimited believes that the most durable gains for conservation are achieved when solutions are forged through collaborative, creative work. The Sun River Watershed Group has put this idea into practice and recently made important strides in restoring flows to the dewatered Sun River through collaboration with Reclamation's WaterSMART funding of upgrades to the Fort Shaw Irrigation District's water delivery infrastructure together with other state and private funding.

The success of the recently-completed WaterSMART infrastructure projects lies in their multi-sector benefits. In addition to increasing the reliability of irrigation water supply and delivery, the projects put more water in the chronically-dewatered Sun River. The wild trout fishery of the Sun River has already shown improvement as a result. The careful, transparent, multi-stakeholder planning process behind these recently-completed WaterSMART projects is the key to their success. This intact watershed process would not have been possible without the Sun River Watershed Group. Now looking to the future, this kind of multi-stakeholder, inclusive, and transparent dialogue is vital to continued success in creating solutions to the thorny problems of water scarcity in the West. The support of the requested Cooperative Watershed Management Act proposal is vital to continuing the impressive track-record of success by the Sun River Watershed Group. As a committed partner in the watershed-based dialogue that has produced past results, Trout Unlimited whole-heartedly supports the requested proposal.

Please don't hesitate to contact me at lziemer@tu.org or (406) 522-7695 if I can answer any questions or otherwise help in your review of the Sun River Watershed Group's proposal.

Yours truly,

Laura Ziemer

Greenfields

IRRIGATION DISTRICT

May 3, 2016

Sun River Watershed Group
Kevin Stone, Coordinator
P.O. Box 568
Choteau, MT 59422

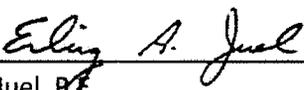
To Whom It May Concern,

The staff and management of Greenfields Irrigation District are pleased to offer this letter of support for the Sun River Watershed Group's (SRWG) effort to secure grant assistance from the Bureau of Reclamation's Cooperative Watershed Management Program. Water is a critical and irreplaceable resource that many residents of the Sun River Basin, unfortunately take for granted. Fortunately, the collective group of stakeholders that comprise the SRWG have worked tirelessly to protect and improve both water quality and quantity in the Sun River basin. In the past, the SRWG has been instrumental in developing a strategy to identify areas for improvement including reducing erosion, mitigating saline seeps, improving water conservation through better management. Many successes in the Sun River Basin over the last 25 years can be attributed to the group's efforts. This is critical for those of us who rely on this water for irrigation, livestock watering, municipal use, wetland protection, waterfowl habitat, other wildlife habitat and recreation. Downstream water users in the upper Missouri River Basin also benefit from the SRWG's successes.

This important grant being sought from the Bureau would enable the group to develop the next 10-year strategic plan to build on past accomplishments and maintain momentum of the group. This is important as the SRWG has recently hired a new coordinator to replace our previous coordinator who recently retired. This 10-year plan will help identify and prioritize those factors which impact water availability and quality.

The SRWG's approach to public awareness and proactive problem solving has fostered a cooperative spirit among the major stakeholders that rely on the Sun River Watershed. Greenfields Irrigation District (GID) is proud to be a charter member of the group and the GID Board believes it is critical to maintain and continue this support and to actively participate in the SRWG's efforts. This grant will help the SRWG continue their important work.

Respectfully,
Greenfields Irrigation District



Erling A. Juel, P.E.
District Manager

Cc: Allan Rollo



Montana Fish, Wildlife & Parks

28 April 2016

4600 Giant Springs Road
Great Falls, MT 59405
Phone (406) 454-5855

Bureau of Reclamation
Montana Area Office
PO Box 30137
Billings, MT59107

To Whom It May Concern,

The Fisheries Bureau of Montana Fish, Wildlife and Parks supports the Sun River Watershed Group grant request for the Cooperative Watershed Management Program. The grant will be used for developing an updated 10-year workplan to guide the future work of the Sun River Watershed Group. Recent turnover has occurred with a new Sun River Watershed Group coordinator and changes in leadership of major landowners and water users. This project to develop an updated workplan is critical to guide future management of the watershed and to continue the long-term teamwork of the Sun River Watershed Group. Furthermore, this project will provide future direction toward meeting or exceeding instream flows and for developing a healthier watershed.

Montana Fish, Wildlife and Parks is excited to support this project by participating in developing and implementing a new workplan that will benefit the three counties that make up the Sun River Watershed. It is our goal that this workplan will use past accomplishments of the Sun River Watershed Group to continue to improve water management in the Sun River to the benefit of aquatic resources and water users.

Thank you again for your consideration of the watershed grant request by the Sun River Watershed Group. Support for this project will benefit everyone along the entire river, and the aquatic resources.

Sincerely,

A handwritten signature in black ink that reads "J. A. Mullen". The signature is written in a cursive, flowing style.

Jason Mullen
Fisheries Biologist

Listing of Key Water Management Studies

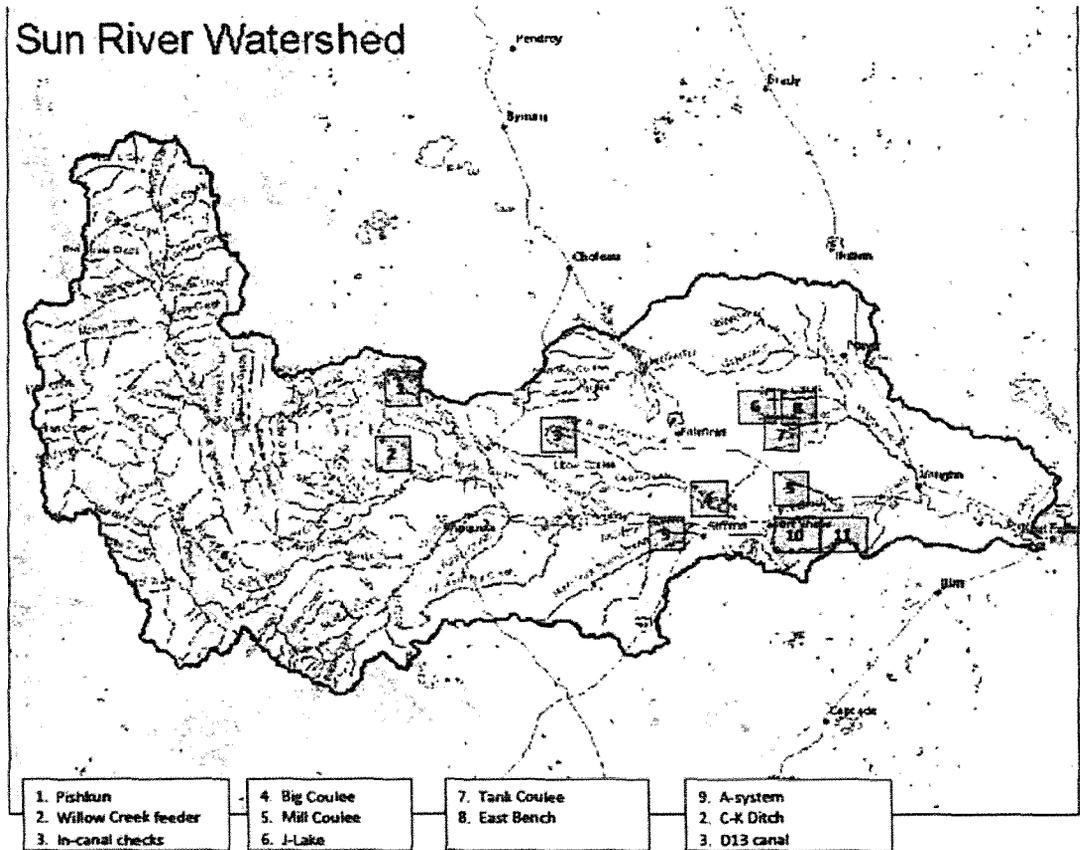
Sun River Watershed Group - February 1, 2020

Entry Number	Title	Major topic category	Sub category	Org prepared for	Author	Author Affiliation	Year	Filename	Brief Summary
1	Sun River Watershed Background Information	Watershed	topography, geology, geography, land use, climate, soils, socioeconomic	Unknown	Unknown	Unknown	Unknown	watershed information.doc	Document provides a brief description of the watershed in terms of watershed location (road area by county), topography and geology, land ownership and use, community population, historic info, climate, soils, and socioeconomic.
2	Water Rights, Allocation, and Use	Water Rights	Sun River surface water rights, Sun River ground water rights	Unknown	Unknown	Unknown	Unknown	Sun River Water Rights Narrative 3-23-09.doc	Provides a summary of Montana Water Rights system and Sun River water rights under the Montana law. Describes Sun River users and uses, including the USBR and Greenfields and Fort Shaw Irrigation Districts. Includes discussion and table of reservoir water rights, as well as a table of surface and ground water rights by use.
3	Sun River Water Supply and Demand	Hydrology	flow rates, hydrographs, water user demand	Unknown	Unknown	Unknown	Unknown	Sun River Water Supply and Demand 2003-2007.doc	Summarizes an analysis of Sun River flows at various points throughout the river system. Flow data for the period 2003 to 2007 were compared against long term (>1990) flow record. Discussion of basin-wide water budget, and basin-wide delivery and field efficiencies. Data is summarized in a number of graphs (hydrographs) and an allocation chart.
4	Nisan Reservoir Overview	Reservoir	DNRC, Nisan Water Users	Unknown	Unknown	Unknown	Unknown	NisanOperation.doc	Provides an overview of Nisan Reservoir. Gives general ownership, location, age, dams, canals, service, size (volume, area), source waters and conveyance features, flow rates, water users, operating strategy.
5	Sun River Project Water Operations	Water Management	reservoir, reservoir operations, water rights, hydrology, weather/climate,	Greenfields Irrigation District	USBR - Montana Area Office	USBR	2008	Gibson Guide Apr08 public.pdf	Training document with information on these reservoirs (Gibson, Willow Creek, Puhlan). Includes general reservoir data (pool volume, dead storage, crest and bed elevations, age, and a timeline of major modifications) as well as summary of water rights associated with waters impounded by reservoir, as well as stream gauging / hydromet stations. Brief discussion of inflow forecasting and precipitation / SNOTEL sites used in the forecast. Additionally, there is a brief discussion on filling and releasing procedures for the reservoir.
6	Sun River Sub-Basin -- 10090104	Conservation Practices	NRCS	General Information	NRCS	NRCS	2008	NRCS practices in Sun Basin.pdf	Table of NRCS Practices by year with Code, Practice Name, Applied Amount, Units, and Year Practices Applied
7	Proposed Non-irrigation Season Release Criteria for Gibson Dam Sun River Project	Reservoir	reservoir operations, hydrology, irrigation, drought	General Information	USBR - Great Plains Region	USBR	2007	Final - Sun River Non-irrigation Season Release Criteria 05 July '07.pdf	Provides background info about the Sun River Project. Study purpose is to determine a method or criteria to establish non-irrigation releases from Gibson to benefit environmental health of Sun River while still providing adequate protection for stored water in Gibson Reservoir. Hydrologic analyses resulted in a water balance method to address non-irrigation season flows, with consideration to potential ice jam issues. Generally, the approach used October flows into Gibson as a predictor for November-March flows into Gibson, with verification and subsequent adjustments made by using November inflows as a predictor for December-March flows. Includes discussion and provisions for filling requirements for Gibson Reservoir, dry year storage and irrigation demand.
8	Fort Shaw Irrigation District Water Management and Water Conservation Plan	Irrigation	FSID, water rights, conservation, irrigation supply, irrigation efficiency, water quality, education, funding,	Unknown	FSID - Alan Kunkard	FSID	2009	2009 - FSID Water Mgt Plan - vs 3.doc	Provides summary of FSID from history, physical characteristics, farming details, water supply and rights, to water measurement. Also includes efficiency/waste analyses and previous water conservation measures. The document includes a substantial list of water management problems and opportunities (e.g. measurement, seepage, degraded infrastructure, watershed assets, etc.), as well as near-term (5-year) and long-term goals. Conservation measures are discussed, and a 4 year implementation schedule/budget is provided. Maps with project sites and flow records (by year) for the main canal are included in the document.

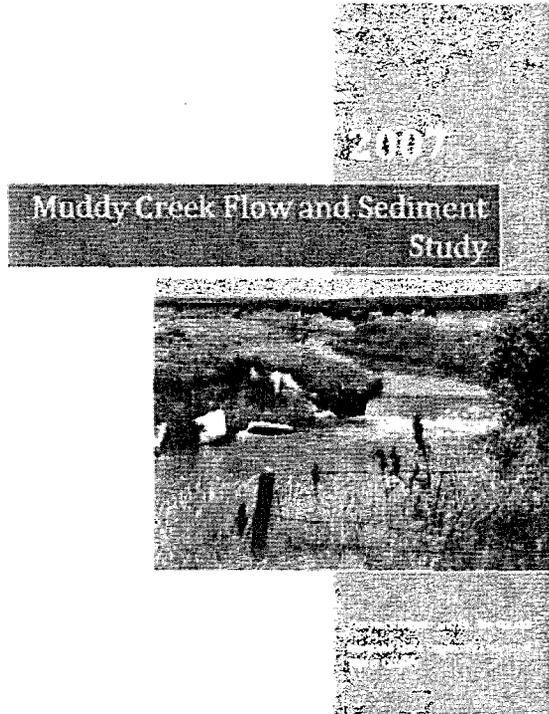
List of Major Problems/Issues Previously Identified during Public Meetings and Workplan Review

PROBLEMS/ISSUES	GENERAL STATUS	Go/ No/go
Groups not understanding real issues facing them	SRWG bringing groups together	OK
Potential for catastrophic fires on Forest Service lands	F.S. working on controlled fires	OK
Noxious weeds out of control	Some projects moving forward	OK
Climate change affecting runoff and land use	SRWG monitoring program	Starting
Wildlife issues	Not enough time and resources AND cannot find win-win solutions	No/go
Land use/growth regulations	Counties unwilling to discuss - need different approach	No/go
Fisheries - not enough water	Some projects moving forward	OK
Elk Creek water quality and quantity	Some projects moving forward	OK
Nilan Water Users - not enough water	Some projects moving forward	OK
Upper Sun River - diversions and stream modifications	Some projects moving forward	OK
Willow Creek erosion issue	Some projects moving forward	OK
Broken O Ranch - water management issues	Some projects moving forward	OK
Broken O Ranch - wastewater affecting streams	Some projects moving forward	OK
Middle Sun River - diversions and stream modifications	Some projects moving forward	OK
Pishkun Reservoir enlargement	Engineering study in-progress	OK
Greenfields Irrigation District - water management issues	Some projects moving forward	OK
Greenfields Irrigation District - wastewater affecting streams	Some projects moving forward	OK
Fort Shaw Irrigation District - water management issues	Some projects moving forward	OK
Fort Shaw Irrigation District - wastewater affecting streams	Some projects moving forward	OK
Freezout - water quality	Some projects moving forward	OK
Water quality entering Teton River	Some projects moving forward	OK
Big Coulee water quality and quantity	Some projects moving forward	OK
Simms Creek water quality and quantity	Some projects moving forward	OK
Adobe Creek water quality and quantity	Some projects moving forward	OK
Rocky Reef water users - water management issues	Some projects moving forward	OK
Town of Fairfield - sewage lagoon	Some projects moving forward	OK
Town of Fairfield - drinking water	Some projects moving forward	OK
Fairfield Bench - water quality and quantity	Some projects moving forward	OK
Mill Coulee water quality and quantity	Some projects moving forward	OK
Town of Power - drinking water	Some projects moving forward	OK
Upper Muddy Creek - Animal waste	Some projects moving forward	OK
Muddy Creek - water quality and quantity	Some projects moving forward	OK
Sun River Valley Ditch Company - water management issues	Some projects moving forward	OK
Sun River Valley Ditch Company - wastewater issues	Some projects moving forward	OK
Town of Vaughn - sewage lagoon	Engineer review	No/go
Town of Sun Prairie - drinking water problems	Engineer review	OK
Lower Sun River water quality and quantity	Some projects moving forward	OK
Lower Sun River - riparian health	Some projects moving forward	OK

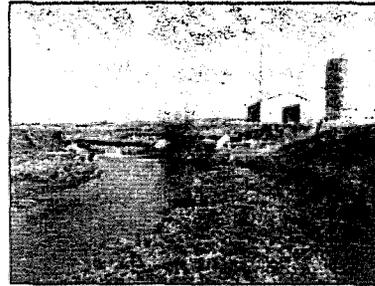
SRWG 2012 WORKPLAN MAJOR WATER CONSERVATION PROJECTS SRWG PURSUING NOW



PREVIOUS STUDIES APPLICABLE TO THIS PROJECT



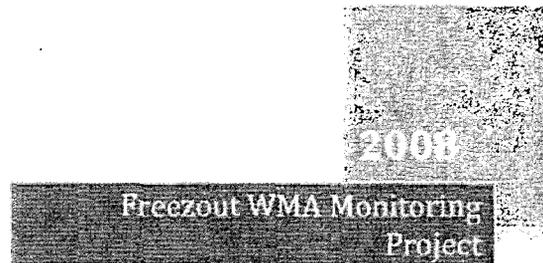
Upper Muddy Creek
Water Quality Investigation 2010



Measurements and reporting by Adam Slight
Montana State University Extension Water Quality
February 2011

Big Coulee
Flow and
Sediment
Study 2008

Chris Hershberger and Dr. Jim Blanton
Montana State University Extension Water Quality



EXAMPLE of ONE
Montana State University Flow and Sediment Studies Chart
Used for defining specific project needs

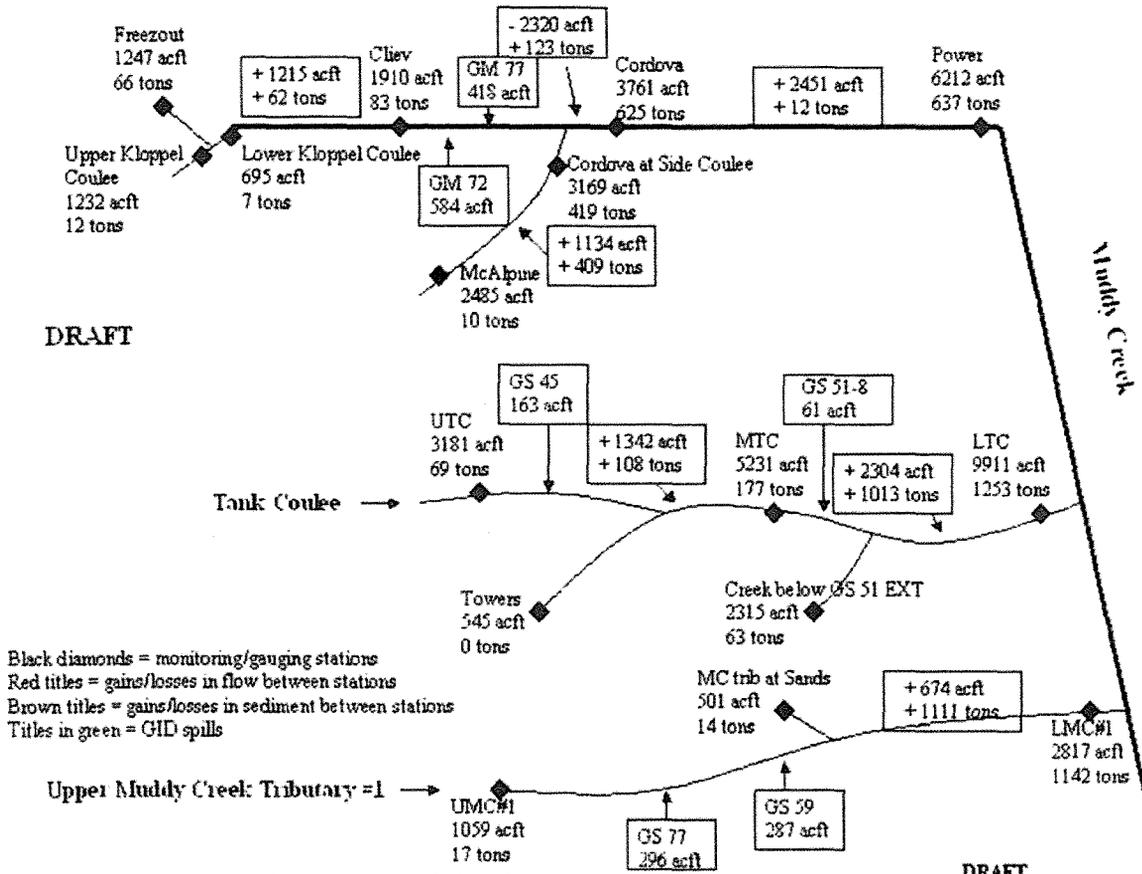


Figure 2. Flow and sediment calculations with GID spills and gains and losses in sediment and flows for Muddy Creek tributaries.

MONTANA TMDL for the SUN RIVER PLANNING AREA

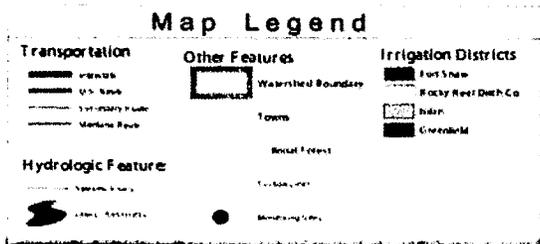
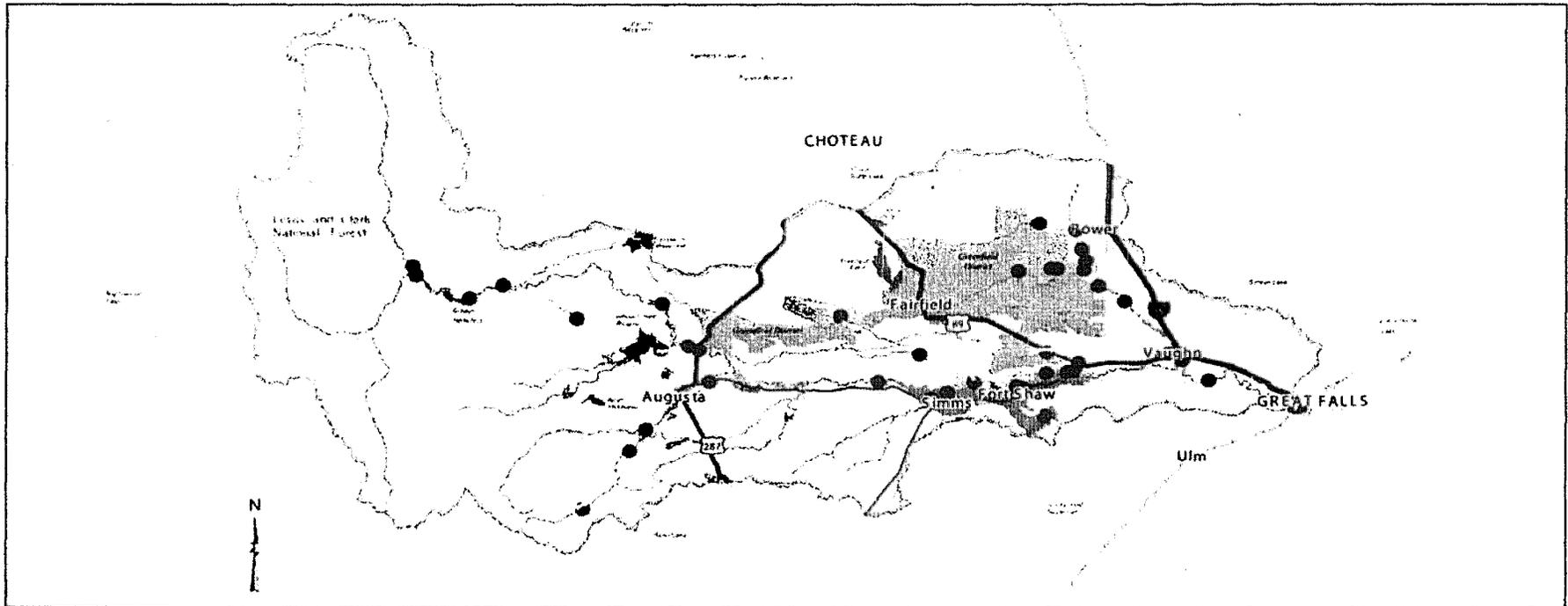
**WATER QUALITY RESTORATION PLAN AND TOTAL
MAXIMUM DAILY LOADS FOR THE SUN RIVER PLANNING
AREA**



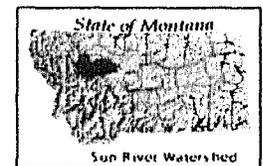
DECEMBER, 2004



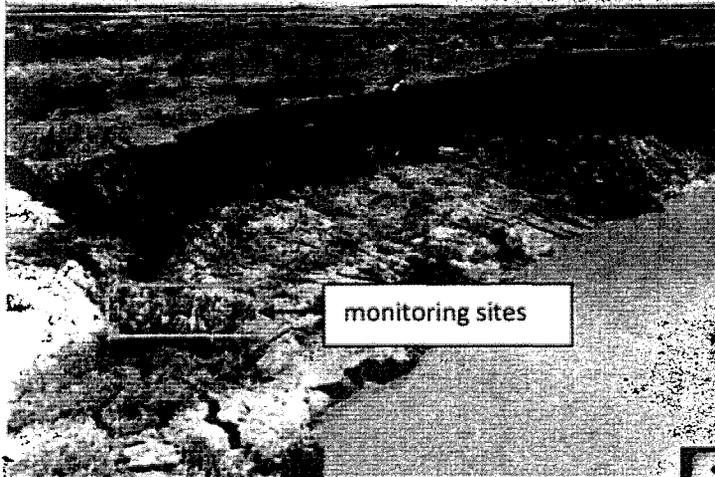
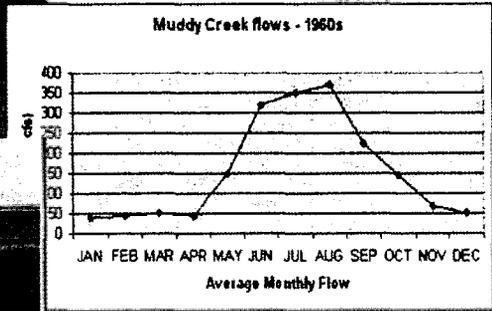
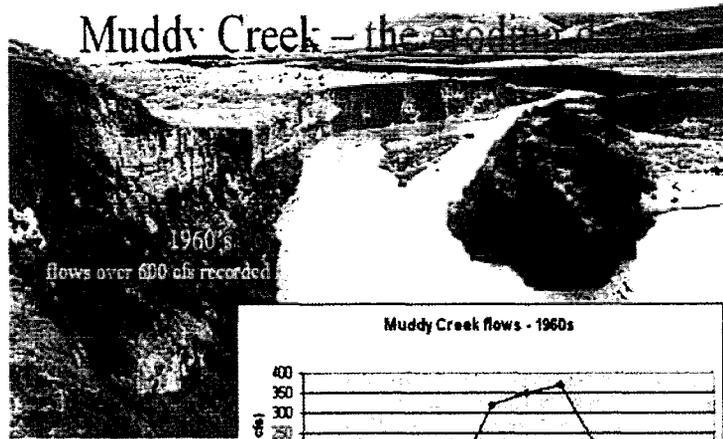
SUN RIVER WATERSHED MONITORING SITES



Sun River Watershed Irrigation Districts With Monitoring Sites



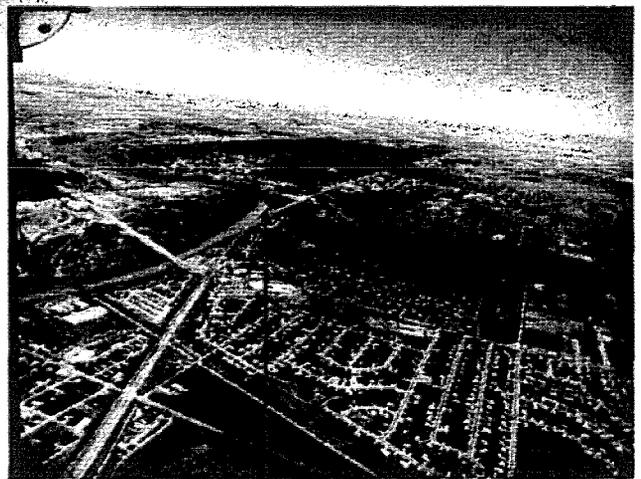
SRWG SUCCESS STORIES



The ugly days of
Muddy Creek

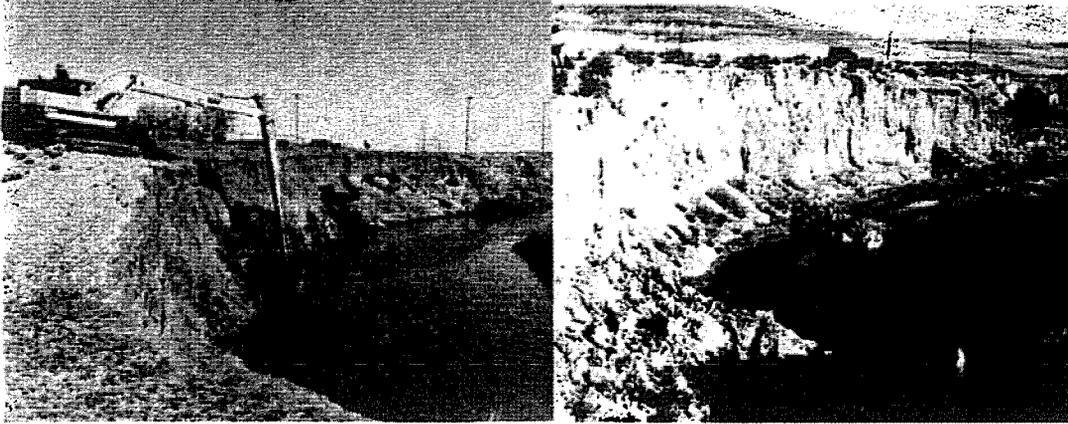


Muddy Creek entering Sun River



Sun River entering Missouri
River at Great Falls

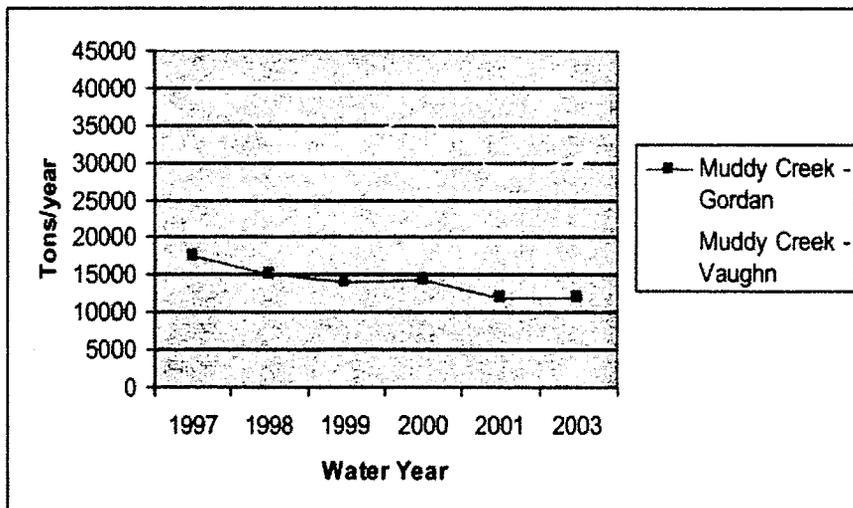
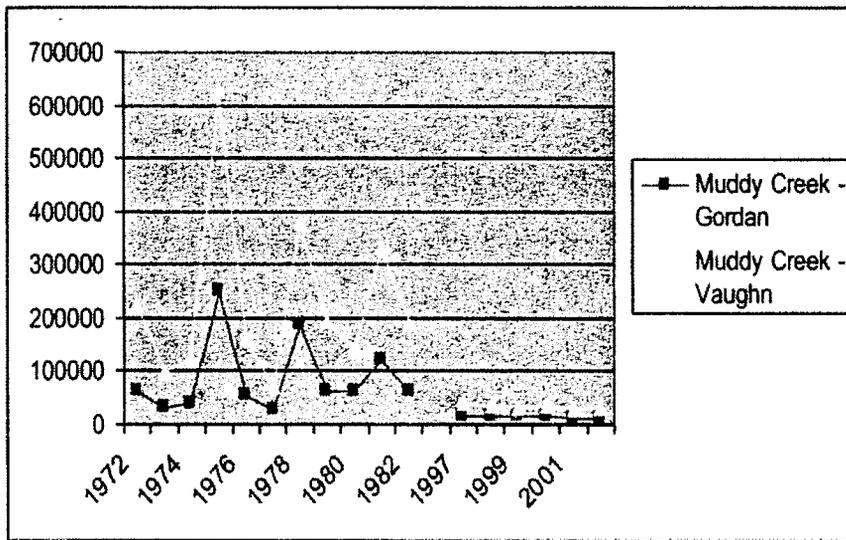
THE RESULTS of TEAMWORK on MUDDY CREEK



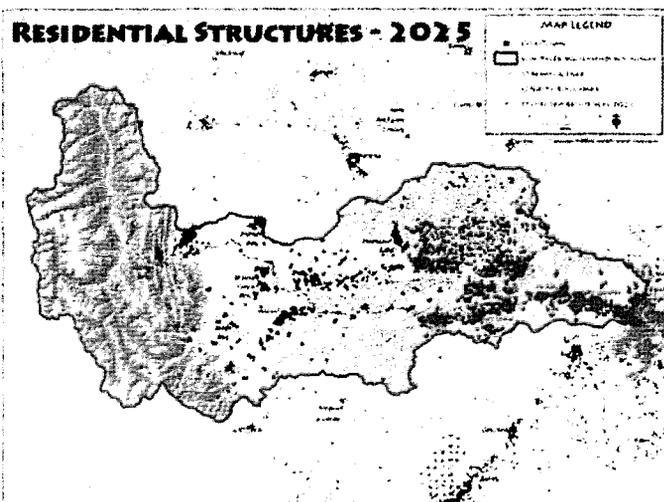
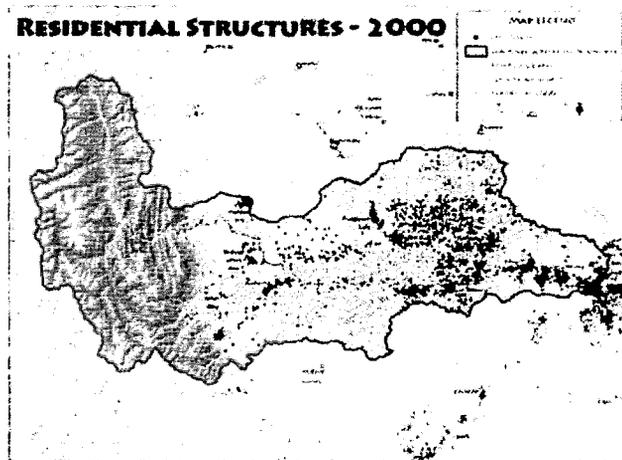
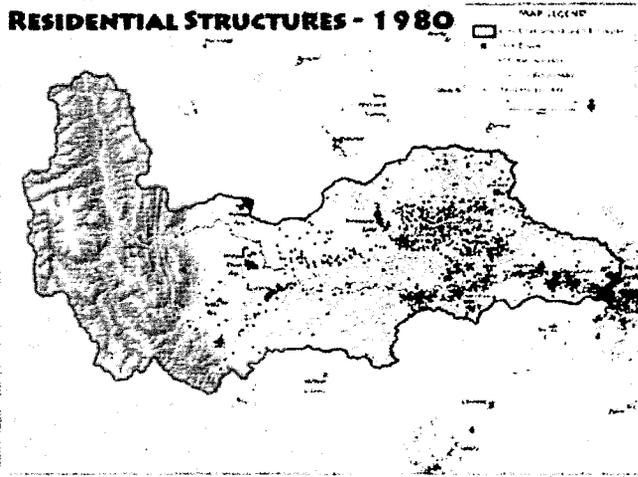
Installing rock barbs to slow erosion

Rock barbs working after first year

Sediment



**Known and Planned Growth in Sun River Watershed
to be Proactive in Future Water Demands and Potential Conflicts**



Forest Service map tracking burned areas over time Be Proactive in Where Next Major Fire Problems May be

