

PROJECT PROPOSAL SUMMARY

Title: Upper San Juan River Basin Stream Management Plan, Phase I

Project location: Upper San Juan River Drainage from the west side of Wolf Creek Pass to Navajo Dam. (Attachment A)

Grant type: Stream Management Plan

Grant request/amount: \$45,090

CWCB WSRF match funding: \$22,545

Cash match funding: \$22,544

In-kind match funding: \$18,691

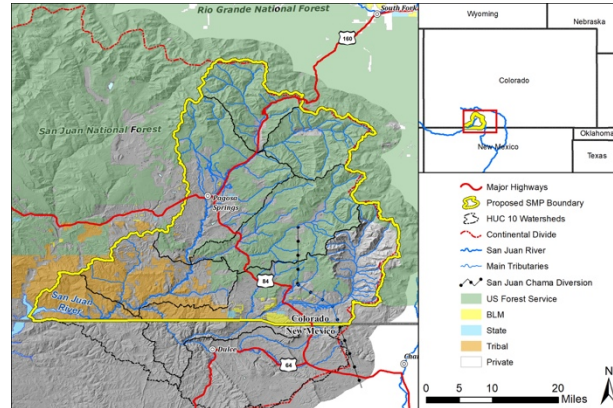
Project sponsor:

Mountain Studies Institute, a 501(c)3 nonprofit

Aaron Kimple, Program Director

akimple@mountainstudies.org, 970-387-5161

1309 E 3rd Avenue #106, Durango, CO 81301



Project partners: Trout Unlimited, Town of Pagosa Springs, Archuleta County, Weminuche Chapter of the Audubon Society, Pagosa Area Water and Sanitation District, San Juan Headwaters Forest Health Partnership, San Juan National Forest, and Bureau of Reclamation, plus partners (see Section C).

PROJECT DESCRIPTION:

Mountain Studies Institute (MSI, applicant) and Trout Unlimited (TU) propose convening a steering committee and stakeholder group to facilitate a community-led process to assess water needs and develop a Stream Management Plan (SMP) for the Upper San Juan River Basin. The Southwest Basin Roundtable's (SWBRT) Basin Implementation Plan (BIP) identifies a significant gap in information necessary to understand and protect environmental and recreational (E&R) water needs. This project will address the identified information gap by tackling the first critical step in the process: community engagement, the development of a stakeholder group and a review of existing data and information.

Envisioned as a three-phase process, the ultimate purpose of the proposed project is to initiate the SMP process to integrate values and seek opportunities to preserve the Upper San Juan Basin streams and their uses with wide-ranging community support and decisions based on current, relevant science and assessments.

OBJECTIVES & OUTCOMES: The outcomes of Phase I (this proposal) will be: (Task 1) an organized stakeholder group, led by a steering committee, with the structure, capacity and collective interest in pursuing a coordinated SMP; (Task 2) a review of current data and information; (Task 3) a work plan for moving forward with a stream assessment and SMP planning.

The timeframe for Phase I is 18 months (Timetable and Budget in Attachment B). The timeframe for the entire proposal is 36 months.

APPLICATION CRITERIA

I. Basic Applicant Qualifications

A. Applicants' Commitment

Mountain Studies Institute (MSI): MSI is a non-advocacy, research and education institute based in the San Juan Mountains of southwest Colorado. Through our ongoing role coordinating the San Juan Headwaters Forest Health Partnership (SJHFHP) in Pagosa Springs, MSI has been approached to address a growing need for and interest in furthering efforts to develop a SMP for the Upper San Juan Basin. MSI is committed to diverse representation and a community-driven process that incorporates conversations and assessment of consumptive and non-consumptive uses, to include E&R values.

Through its connections with the community and with the support of a community liaison (Western Wildscapes), MSI will recruit a local steering committee to assist in framing the stakeholder process, recruit participants from a wide range of water and community interests, and guide the SMP process.

B. Project Purpose

The overarching purpose of the project is to convene local stakeholders in a community-driven effort to identify priority values for planning and management of streams within the Upper San Juan Basin, assess existing data and information, and identify opportunities to address those gaps (see scope, Attachment C). This effort will seek to incorporate forest health and climate change considerations in its assessments, expanding on existing community efforts. In so doing, the proposed SMP is likely to serve as a model for incorporating these two critical components to SMPs elsewhere in Colorado. Guided by the stakeholder group process, Lotic is expected to assess consumptive and non-consumptive water use needs and values in a cooperative setting that responds specifically to the community and aligns with the Colorado Water Plan's goal to improve our understanding of E&R water needs throughout the state.

C. Broad Based Involvement and Support

Many stakeholders affected by the health and function of streams within the Upper San Juan River Basin have expressed interest in the process and support for this proposal. They include, but are not limited to: Pagosa Area Water and Sanitation District, San Juan Headwaters Forest Health Partnership, San Juan Water Conservancy District, Town of Pagosa Springs, Archuleta County, U.S. Forest Service, Colorado Parks and Wildlife, Stollsteimer Creek Watershed Steering Committee, Natural Resource Conservation Services, San Juan Soil and Water Conservancy, Bureau of Reclamation, Chama Peak Land Alliance, Southern Ute Indian Tribe, science organizations, outdoor industry companies and groups, interested members of the public and more. MSI and TU will closely coordinate their efforts with the Southwest Basin Roundtable and its E&R needs Subcommittee. Letters of support from these and other stakeholders are in Attachment D.

D. Inkind Support and Cash Match

MSI respectfully requests \$45,090 from the Colorado Watershed Restoration Program towards a total budget of \$108,870.20 (a 41% match). MSI has developed a funding plan to request \$22,544 from the Southwest Basin Roundtable (proposed, 21% match) and \$2400 from MSI general funds. Additionally,

MSI's team will seek \$19,885 in cash from local partners, including Town of Pagosa Springs, Archuleta County, San Juan Headwaters Forest Health Partnership, San Juan Conservation District, PAWSD, and others (20% match, unsecured). MSI anticipates in-kind contributions of 8-10 steering committee members (15 meetings) and 25-35 stakeholders (2-3 public meetings and 1-2 stakeholder working group meetings) as \$18,691 in-kind funding (based on Independentsector.org Colorado volunteer rate of \$25.96/hour, 17% match).

II. APPLICATION AND EVALUATION CRITERIA

A. Qualification Evaluation

MSI is the lead project sponsor, with support and assistance from Mely Whiting of TU and Al Pfister of Western Wildscapes. MSI will be the fiscal agent for this grant. The steering committee and stakeholder group will provide direction for the development of a SMP. MSI will work with identified partners, those listed above as well as Lotic to support administrative tasks and perform the data review (Lotic Scope of Work, Attachment E). Biographies and information for key personnel are included in Attachment F.

MSI will enlist the help of Mely Whiting and Al Pfister to engage the steering committee and work with the stakeholder group to ensure the successful completion of all tasks. Aaron Kimple will be the Senior Project Manager, overseeing MSI's responsibilities as coordinator and fiscal agent. Al Pfister will serve as the community liaison for the project, securing local leadership as part of MSI's team.

Lotic will be the principal contractor responsible for the data and information review, development of scope for Phase II, and early phases of assessment as set forth in its project proposal, and for a more comprehensive assessment anticipated for the second phase of this project (full project scope, Attachment E).

B. Organizational Capability

Mountain Studies Institute (applicant, fiscal agent) (MSI): In addition to MSI's long-standing relationships in the community and experience convening a group in the Pagosa Springs Community around forest health, MSI is a respected scientific research institute in the San Juan Mountains. Through efforts that range from youth education and outreach to specific and ongoing science and monitoring efforts, MSI has a varied and intimate knowledge of San Juan Mountain communities and the issues that affect them. MSI has been the coordinator for the San Juan Headwaters Forest Health Partnership for the past five years, during which time the partnership has leveraged over a million dollars in funding and accomplished over 5,000 acres of treatment around priority water resources for Archuleta County communities. This work was made possible by coordinating the interests and values of individual landowners, agencies and local interests. MSI is a non-partisan actor committed to convening stakeholders without a vested interest in a particular outcome. MSI will manage the project, engage and convene stakeholders, oversee Lotic's work, and conduct public outreach to secure broad support for the outcomes.

Trout Unlimited (TU): TU will provide organizational and strategic support for the effort and serve as liaison with the SW Basin Roundtable. Mely Whiting has extensive experience in stakeholder group efforts, including the Upper Colorado Wild and Scenic River Stakeholder Group and Learning by Doing (she's the co-chair of both), the Water Quality Forum, and the River Protection Workgroup. She is the SW Basin Roundtable's environmental representative and was instrumental in both reaching roundtable

consensus on an approach for identifying E&R water supply needs, as reflected in the roundtable's BIP, and developing the San Miguel SMP pilot project, the roundtable's first effort to address the identified needs. Mely is a resident of Pagosa Springs.

Al Pfister, Western Wildscapes: Al has over 36 years of experience dealing with stream and watershed management issues in seven western states. He has worked for and with Federal Agencies (USFWS, BLM, USFS, BOR, EPA, ACOE, Defense Department, WAPA, BIA), State, County and local government officials, Native American Tribes, and private landowners in their respective involvement and implementation of land use plans in their management of streams. Relying on this extensive experience, Al will act as a community liaison to support development and coordination of both the steering committee and stakeholder group, and will assist Lotic in technical, regulatory, and policy aspects of the Project. Al provides additional technical expertise from a faunal, floral and ecological perspective. Al is a resident of Pagosa Springs.

Lotic Hydrologic LLC (Lotic): MSI's team proposes to contract Lotic to carry out all technical aspects of the Project. Lotic provides technical expertise, water resource engineering services, and a firm commitment to scientific problem solving when engaged in both field data collection and complex quantitative analysis. They generate the high-quality data tools and interpretations necessary to inform science based decision-making in public policy development and natural resource management. Lotic helps clients implement strategies that protect diverse water user while maintaining high levels of environmental quality and contributing to the long-term stewardship of water resources. Seth Mason, founder of Lotic Hydrologic, is originally from Pagosa Springs and remains tied to the community.

C. Proposal Effectiveness:

The success and relevance of stream management planning efforts are highly dependent on stakeholder engagement. Because a stakeholder group to coordinate efforts in the Upper San Juan Basin does not currently exist, this proposal is a critical first step toward the success of any SMP efforts. In developing this proposal, MSI and partners conducted an assessment of historic efforts and will continue to build off of local efforts and findings. Some of these efforts include, but are not limited to: the Stollsteimer Creek Watershed Master Plan (2006), Rio Blanco restoration efforts, San Juan National Forest Plan (Pagosa and Columbine Ranger Districts), River Protection Workgroup (2011), the Town of Pagosa's efforts for river restoration, Town of Pagosa's Comprehensive Plan Revision, and Archuleta County Master Plan revision.

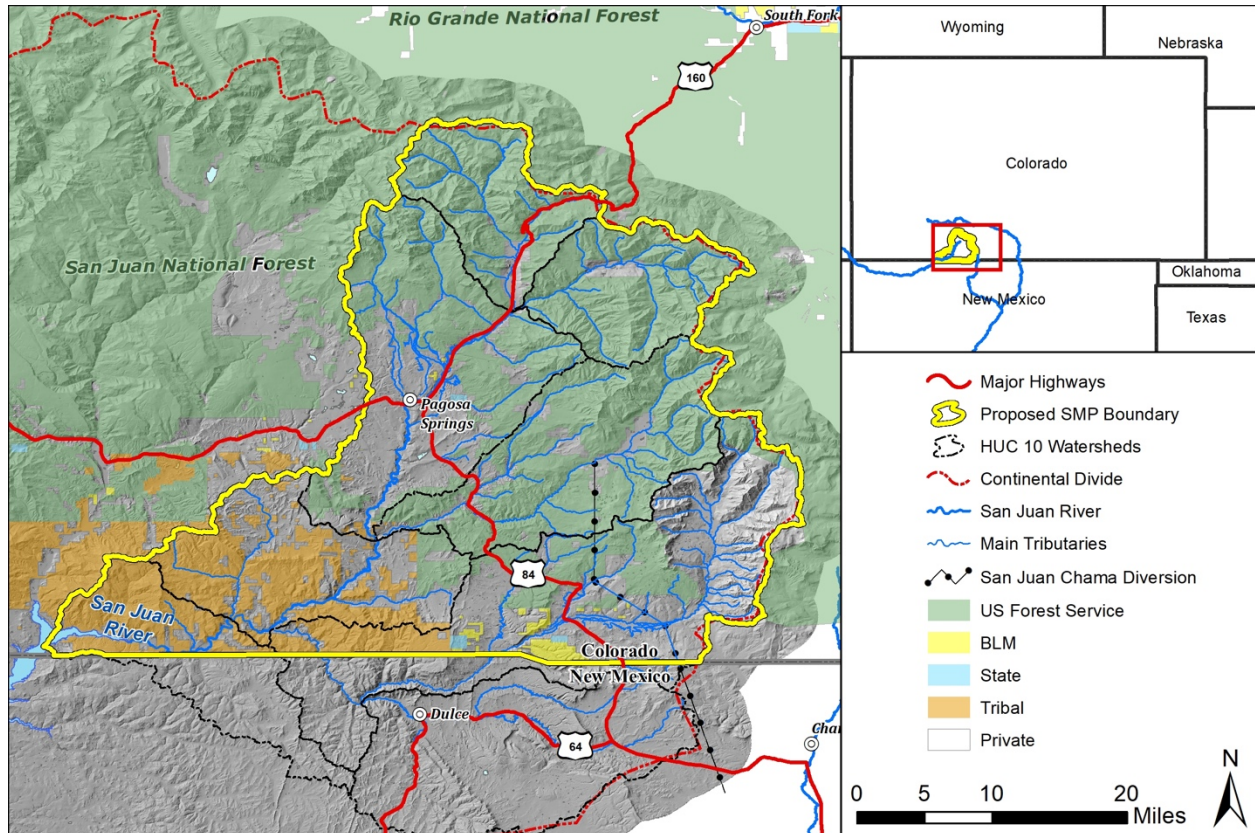
During the Phase I of the Upper San Juan River Basin stream management plan, MSI will convene a steering committee to help frame the stakeholder process, recruit participants from a wide range of water and community interests, and guide the SMP process. With the assistance of the steering committee, MSI will convene community stakeholders to assess consumptive and non-consumptive values, including E&R needs within the basin, and to identify gaps with the ultimate goal of outlining an assessment that can prioritize projects and processes to meet those needs.

While specific needs, gaps and opportunities will not be evaluated until Phase II of the project, this initial phase is critical; without the establishment of a committed and representative local stakeholder group, future efforts are not likely to be sustainable. As such, this initial work scope is committed to building and supporting said group.

ATTACHMENT A

Figure 1: Proposed study area of Upper San Juan Stream Management Plan.

The map below illustrates the potential scope of the proposed SMP (yellow boundary). However, the stakeholder group will determine the final geographic scope.



Streams and waterways proposed for evaluation include the San Juan River mainstem above Navajo Lake, East Fork of the San Juan River, West Fork of the San Juan River, Rio Blanco River, Navajo River, and the Piedra River below Highway 160. Other tributaries may be included following consultation with local stakeholders. These tributaries may include Mill Creek, Four Mile Creek, Martinez Creek, Cat Creek, and Stollsteimer Creek.

ATTACHMENT B: PROJECT BUDGET AND TIMETABLE

MSI respectfully requests \$45,090 from the Colorado Watershed Restoration Program towards a total budget of \$108,870 (a 41% match). MSI has developed a funding plan to request \$22,544 from the Southwest Basin Roundtable (proposed, 21% match) and \$2400 from MSI general funds. Additionally, MSI's team will seek \$20,144 in cash from local partners, including Town of Pagosa Springs, Archuleta County, San Juan Headwaters Forest Health Partnership, San Juan Conservation District, PAWSD, and others (20% match, unsecured). MSI anticipates in-kind contributions of 8-10 steering committee members (15 meetings) and 25-35 stakeholders (3 public meetings and 5 stakeholder working group meetings) as \$18,691 in-kind funding (based on Independentsector.org Colorado volunteer rate of \$25.96/hour, 17% match).

BUDGET, PHASE I

Task	Description	CWCB Funds	CWCB WSRF Funds	Other Funding Cash*	Other Funding In-Kind*	Total
1	Assemble & coordinate a steering committee	\$ 19,495	\$ 9,747	\$ 9,748	\$9,345	\$ 48,335
	Assemble & coordinate a stakeholder group	\$ 14,455	\$7,227	\$7,227	\$9,346	\$ 38,226
3	Review existing data & information	\$ 9,700	\$4,850	\$4,850		\$19,399
4	Development of work scope (Lotic/MSI)	\$ 1,440	\$720	\$720		\$2,880
	TOTAL	\$45,090	\$22,545	\$22,545	\$18,690	\$108,870

BUDGET, PHASE II & III*

Total estimate for Phase II & III: \$210,865

Total estimate for project: \$319,735

*(all projects for phase II & III are an estimate: actual scope and budget will be determined by stakeholder group in Phase I)

The requested funding for Phase I will support:

- **Labor** for coordination and community engagement (MSI \$33,280, Western Wildscapes \$24,624)
- **Travel** to steering committee meetings and stakeholder meetings (23 total trips) at \$1,000 each (\$2,000 total)
- **Supplies** for workshops, meetings, and public engagement (supplies, posters, refreshments) (\$2,000)
- **Contractor/Specialists** (Lotic Hydrologic) \$19,399 for Phase I for stakeholder engagement, data review and assessment, and travel to meetings.

SCHEDULE

The first two months will be spent convening the steering committee and garnering support for the first public meeting. Steering committee meetings will be conducted monthly for the duration of the project scope. Public will be invited to every other stakeholder meeting. Stakeholder meetings will be convened approximately every 3-4 months, or quarterly (expressed in the schedule below).

	Month Following Contract Initiation																		total # of meetings	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
MILESTONES																				Lotic Scope of work, coordinated timetable
Steering Committee Meeting	*	*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
Stakeholder Meeting						x			x			x		x				x		5
Public Meeting						x						x						x		3

ATTACHMENT C: SCOPE OF WORK

GRANTEE AND FISCAL AGENT: Mountain Studies Institute

PRIMARY CONTACT: Aaron Kimple

ADDRESS: 1309 E 3rd Avenue, Suite 106 Durango CO 81301

PHONE: 970-387-5161

PROJECT NAME: Upper San Juan Basin Stream Management Plan: Phase I

INTRODUCTION AND BACKGROUND:

Mountain Studies Institute (MSI) in coordination with Lotic Hydrological L.L.C (“Lotic”), Trout Unlimited (TU) and Western Wildscapes will facilitate Phase I of a three-phased approach to developing a Stream Management Plan (SMP) for the Upper San Juan River Basin. MSI will convene stakeholders to create a steering committee and stakeholder group, and will work with that group to identify priority values for the Upper San Juan River, including E&R attributes. In the process of identifying values and establishing a collective purpose, outcomes and priorities, MSI will work with and advise Lotic in conducting a review of existing data and information. MSI will share findings with the stakeholder group and coordinate stakeholder interests and Lotic efforts to develop a scope of work and funding proposal for moving forward with the Phase II of the SMP.

CRITERIA FOR STREAM MANAGEMENT PLANS:

The CWCB identifies gathering stakeholders to participate in plan development and identifying the plan’s objectives as the first necessary steps for a successful SMP; this proposal and MSI’s role as coordinator will fill those objectives. Contingent upon the success of these initial efforts, the stakeholder group, with support from MSI, TU and Western Wildscapes, will be well-positioned to move forward with other critical components of an SMP. In addition to convening the stakeholder group, this proposal includes the step of collecting and synthesizing existing data, a priority identified by the CWCB as a way to assess what new information is needed and the best method for obtaining that information. In the second and third phase of the project (see Attachment C), the by-then-established stakeholder group will quantify specific recommendations, identify constraints and opportunities, and implement a stakeholder-driven process to identify and prioritize projects and values, including E&R projects.

This projects alignment with CWCB stream management plan goals as is further described in Attachment C and Lotic’s Scope of Work (Attachment E).

OBJECTIVES

1. Assemble and coordinate a steering committee and stakeholder group to identify water-related values and attributes,
2. Review existing data and information, to determine data gaps for subsequent assessment
3. Support the stakeholder group to develop a process and supporting scope of work for an assessment to establish goals for stream management, identify flows and physical conditions needed to support E&R (Phase II), and prioritize alternative management actions (Phase III).

TASKS

Task 1- Assemble and coordinate a steering committee and stakeholder group

Description: MSI and partners will convene a diverse and representative steering committee and stakeholder group to guide and inform the development of an SMP.

Method: Identify and convene a steering committee that will meet monthly for the duration of the Phase I (18 months.) With support and direction from the steering committee, MSI and partners will outreach to community to convene appropriate stakeholders and hold regular meetings (five stakeholder meetings, three public meetings) and provide opportunities to identify shared values and coordinated project opportunities.

Deliverable: A steering committee that meets monthly and an engaged, informed stakeholder group and public. MSI's team will lead 15 steering committee and project team meetings; 3-5 meetings with stakeholders and the public. MSI will prepare two progress reports and one final report.

Task 2- Review Existing Data and Information Gaps

Description: Lotic Hydrologic will review existing data and information to identify gaps associated with E&R values and values identified by the steering committee and watershed group.

Method: See Attachment E, Lotic Scope of Work.

Deliverable: Lotic will develop a summary report and accompanying set of maps and graphics of relevant information and data sources that can be shared and interpreted for the group to inform identification of gaps, assessment of water resource values, and potential future projects. The report will suggest the likely drivers of and greatest risks to unsatisfied demand for ecosystem goods and services across the project area.

Task 3- Support the stakeholder group to develop goals and objectives and scope of work for subsequent assessments

Description: Support the stakeholder group to develop a scope of work for a subsequent assessment that can inform future projects, management decisions, and priority actions.

Method: MSI will work with the steering committee and stakeholder group to plan and guide assessment efforts, which will drive Phase II of this project (see full project scope, Attachment C.

Deliverable: A community-driven process for developing the Upper San Juan SMP and a scope of work for moving forward into Phase II and the SMP.

REPORTING AND FINAL DELIVERABLE

MSI will provide CWCB with a progress report every six months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of accomplishments, issues if any occurred, and any

corrective actions taken. At completion of the project, MSI will provide CWCB a final report that summarizes the project and documents how the project was completed.

Phase I of the Upper San Juan SMP is expected to commence in the spring of 2018 and continue for a period of approximately 18 months. A proposed timeline for various tasks is included in Attachment B.

ATTACHMENT D: LETTERS OF SUPPORT

Kindly find attached letters of support from:

- 1) Southwest Basin Roundtable
- 2) Town of Pagosa Springs
- 3) Pagosa Area Water and Sanitation District
- 4) San Juan Headwaters Forest Health Partnership
- 5) Audubon Society: Weminuche Chapter
- 6) Colonel Barris Samples, Five Rivers Chapter, Trout Unlimited
- 7) John Taylor, Archuleta County landowner

SOUTHWEST BASINS ROUNDTABLE**Michael Preston, Chair****c/o Dolores Water Conservancy District****P.O. Box 1150****Cortez, Colorado 81321****970-565-7562**

October 26, 2017

Chris Sturm

Watershed and Flood Protection Section

Colorado Water Conservation Board

1580 Logan Street, Suite 600

Denver, Colorado 80203

SUBJECT: Upper San Juan Basin Stream Management Plan, Phase 1

Dear Chris,

I am writing as Southwest Basin Roundtable Chair in support of the application from Mountain Studies Institute for the Upper San Juan Basin Stream Management Plan, Phase 1.

This Project was presented in concept at the October 11, Southwest Basin Roundtable meeting and there was unanimous consent to provide a letter of support from the Roundtable.

The proposed project addresses Southwest Basin Implementation Plan Goals:

- Meet Recreational Water Needs, Goal D1: Maintain, protect and enhance recreational values and economic values to local and statewide economies derived from recreational water uses such as fishing, boating, hunting, wildlife watching and hiking. [p. 15]
- Meet Environmental Water Needs, Goal E2: “Protect, maintain, monitor and improve the condition and natural function of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries, and to support native species and functional habitat in the long term, and adapt to changing conditions. [p. 16]

The project is consistent with SWBRT Multi-Basin IPP # 1-MB: “Environmental and Recreational Needs: Evaluation of environmental and/or recreational gaps is planned to be conducted for improvement of non-consumptive resources and/or in collaborative efforts with development of consumptive IPPs. . . .”

The SWBRT has begun to implement the above IPP with a Pilot Stream Management Plan on the San Miguel River. The Upper San Juan SMP is a next step in implementing IPP# 1-MB.

The proposed project is also consistent with Colorado Water Plan Environmental and Recreational Goals, specifically: “Understand, protect, maintain, and improve conditions of streams, lakes, wetlands and riparian areas to promote self-sustaining fisheries and functional riparian and wetland habitat to promote long term sustainability and resiliency.” [p. 6-157]

Please give this application your favorable consideration. If you have questions contact me at 970-565-7562, mpreston@frontier.net.

Sincerely,



Michael Preston
Southwest Basin Roundtable Chair



551 Hot Springs Boulevard
Post Office Box 1859
Pagosa Springs, CO 81147
P: 970.264.4151
F: 970.264.4634

Town of Pagosa Springs
Planning Department

October 26, 2017

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

Dear CWCB Board and Staff Members:

The Town of Pagosa Springs (Town) is writing to convey our support for Mountain Studies Institute's (MSI) proposed project: "Upper San Juan Basin Stream Management Plan, Phase I".

The Town is currently in the process of revising our Comprehensive Plan. Water use and availability in the Upper San Juan River Basin are critical resources needed by the Town to maintain our environmental and economic vitality. Tourism and associated recreation are key elements that depend on a healthy river basin.

We believe completion of this Stream Management Plan (SMP) will assist in meeting the State of Colorado's Water Plan's goal of seeking to understand the state's water needs, identifying gaps, and promoting projects and processes to meet those needs. This SMP will assist in identifying potential needs, gaps, and projects and processes to address those needs that can be incorporated into our Comprehensive Plan. We plan on being significantly involved in MSI's process.

The Town is particularly enthusiastic about the community involvement envisioned by the project. MSI will work with diverse partners to establish a representative steering committee and local watershed group that will guide a science-based assessment of the watershed. We greatly appreciate MSI's initiative and strongly support their proposal to the CWCB for funding of Phase 1, as well as for subsequent phases, and the ultimate goal of facilitating a stream management planning process for the Upper San Juan Basin.

If I can be of further assistance in supporting MSI's efforts to complete an SMP please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Don Volger", written over a horizontal line.

Mayor Don Volger

*Town of Pagosa Springs
Po Box 1859
551 Hot Springs Blvd.
Pagosa Springs, Co. 81147
970-264-4151 x226
ddvolger@gmail.com*

Jim Smith, President/Chairman
Blake Brueckner, Vice President
Gordon Mclver, Secretary



Paul Hansen, Treasurer
Michael Church, Director

November 2, 2017

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

Re: Upper San Juan Basin Stream Management Plan

Dear CWCD Board and Staff Members:

The Pagosa Area Water and Sanitation District (District) is writing to convey our support for Mountain Studies Institute's (MSI) proposed project: "Upper San Juan Basin Stream Management Plan, Phase I".

The Upper San Juan River Basin is a critical resource for the District. All water provided to our service area which exceeds 70 square miles comes directly from this river basin. Development in the basin, fire control and water quality will impact the District's ability to provide safe and reliable drinking water to our service area.

We believe completion of this Stream Management Plan (SMP) will assist in meeting the State of Colorado's Water Plan's goal of seeking to understand the state's water needs, identifying gaps, and promoting projects and processes to meet those needs. This SMP will assist in identifying potential needs, gaps, and projects and processes to address those needs that can be incorporated into our short and long term goals.

The District has supported other MSI projects such as the Forests to Faucets Teacher Training Workshop and the San Juan Headwaters Forest Health Partnership and will support this venture as well as being involved in the actual study.

If I can be of further assistance in supporting MSI's efforts to complete an SMP please contact me at justin@pawsd.org or (970) 731-7641.

If you have any questions or comments please do not hesitate to call or write.

Sincerely,

Justin O. Ramsey, P.E.
Pagosa Area Water and Sanitary District
Engineer/Manager

100 Lyn Avenue
P.O. Box 4610

www.pawsd.org
Pagosa springs, Colorado 81157

(970) 731-2691
FAX (970) 731-2693



Colorado Water Conservation Board
ATTN: Chris Sturm
1313 Sherman St.
Room 721
Denver, CO80203

October 30, 2017

Dear Mr. Sturm,

I am writing on behalf of the San Juan Headwaters Forest Health Partnership (SJHFHP) to express support for the Mountain Studies Institute's proposed project: "Upper San Juan Basin Stream Management Plan, Phase I".

The San Juan Headwaters Forest Health Partnership works with local stakeholders to address forest and watershed health issues in and around Archuleta County, Colorado. The area encompasses the project area proposed by MSI, including the headwaters of the San Juan River. SJHFHP has recognized the influence forest health has on water quality and is encouraged that the proposal presented by MSI includes the discussion of forests in planning for water resource needs.

The Colorado State Forest Service and the Colorado Water Conservation Board have acknowledged the connection between forests and water in recent planning documents. The proposed project will take critical steps to understand the connection in the San Juan Basin and meet the Colorado Water Plan's goal to understand the state's water needs, identify gaps, and promote projects and processes to meet those needs.

The success and relevance of watershed planning efforts will be dependent on stakeholder engagement and the inclusion of diverse interests. SJHFHP is excited to represent local forest interests in the hopes of informing future planning efforts.

SJHFHP encourages the board to consider funding this proposal. The proposed project will help to coordinate watershed planning community-wide, and support the efforts of the SJHFHP group to identify areas where forest health and water quality concerns overlap and prioritize future thinning activities that could mitigate the impacts of wildfire.

Thank you!

Sincerely,

A handwritten signature in blue ink that reads "Aaron Kimple".

Aaron Kimple
Program Coordinator



November 2, 2017

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

Dear CWCB Board and Staff Members:

The Weminuche Chapter of the Audubon Society (Chapter) is writing to convey our support for Mountain Studies Institute's (MSI) proposed project: "Upper San Juan Basin Stream Management Plan, Phase I".

The Chapter is very interested in how our limited water resources are conserved to meet the many demands placed on those resources. We believe completion of this Stream Management Plan (SMP) will assist in meeting the State of Colorado's Water Plan's goal of seeking to understand the state's water needs, identifying gaps, and promoting projects and processes to meet those needs. We applaud the collective efforts to assess the environmental and recreational needs of our area, and how those needs can be met and kept in balance with the other agricultural, municipal and industrial demands on our water resources. Water use and availability in the Upper San Juan River Basin are critical resources needed to maintain our environmental and economic vitality. Our natural resources, including wildlife and wildlife habitat, are key elements of our community's assets that depend on a healthy river basin.

Completion of this SMP will assist in identifying potential needs, gaps, and projects and processes to address those needs that can be incorporated into the various planning efforts occurring throughout the area on Federal, State, County and private lands. We plan on being involved in what we anticipate to be a very open and multi-discipline process that will drive a balanced use and conservation of our water resources.

If I can be of further assistance in supporting MSI's efforts to complete an SMP please contact me at becky.herman98@gmail.com or (970)264-2171.

A handwritten signature in cursive script that reads "Becky Herman".

Sincerely,
Becky Herman, Board President
Weminuche Audubon Society

5 Rivers Trout Unlimited
72 Encantado Ct.
Durango, CO 81303

Colorado Water Conservation Board
1313 Sherman St., Suite 721
Denver, CO 80203

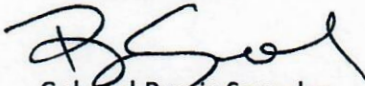
Members of the Colorado Water Conservation Board,

5 Rivers Trout Unlimited, the TU chapter supporting water conservation in SW Colorado, supports this effort to create a stream management plan for the Upper San Juan River. This proposed study and plan seeks to provide management for water quality, fisheries and wildlife through this watershed. Currently, Trout Unlimited has over fifty members in the Pagosa Springs area. This team of volunteers is prepared to provide essential assistance with stream studies and salmonid viability. With the current and future challenges of climate change, especially with increased air and water temperatures, a San Juan management plan could provide direction for adaptation and mitigation efforts.

Trout Unlimited is at the forefront of SW Colorado stream issues by developing a Coldwater Fisheries Management Plan for the Dolores River Watershed and by leading the efforts for reintroduction of the native Colorado River Cutthroat Trout on Hermosa Creek. For over 25 years, TU has been a major stakeholder in preserving, conserving and protecting SW Colorado water resources.

The Upper San Juan River Stream Management Plan is in harmony with Trout Unlimited and our efforts to continue to improve on our invaluable watersheds. This plan will benefit our community, our wildlife and our children into the far future. We wholeheartedly endorse these efforts for the San Juan Basin.

Very Sincerely,



Colonel Berris Samples
President
5 Rivers Trout Unlimited

November 11, 2017

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

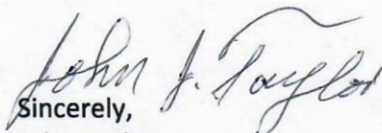
Dear CWCB Board and Staff Members:

I am writing as a private landowner and rancher on the Upper Piedra River to show my support for Mountain Studies Institute's (MSI) proposed project: "Upper San Juan Basin Stream Management Plan, Phase I".

I am an active participant in the SW Basin Roundtable and the San Juan Forest Health Partnership here in Southwest Colorado . As an 86 year resident of the area, I am very protective of irrigation water rights and am sensitive to other uses. Our water resources here are the lifeblood of our livelihoods, be it ranching, fishing, boating, or our domestic use. Using a Stream Management Plan (SMP) to assess our needs, identify gaps, and promote projects and processes to meet those needs is an excellent way to ensure a healthy river for our future.

The open processes used by the Roundtable and Partnership are good examples of having a balanced cross section of our community involved in developing the SMP. My experience with MSI has been a very positive one, and I trust them to create a fair and balanced program for this project also. I understand the SMP will emphasize environmental and recreational needs, but will do so in recognition and respect of existing water rights such as my own. I am very supportive of this effort and look forward to participating in developing and implementing the SMP.

If I can be of further assistance in supporting MSI's efforts to complete an SMP please contact me at jtaylor034@hughes.net or (970)731-5765.


Sincerely,
John Taylor
Local Resident and Rancher

ATTACHMENT E: LOTIC HYDROLOGICAL SCOPE OF WORK

This scope of work from Lotic Hydrological represents all three phases of the project proposal. Because Phase II and Phase III will largely be determined by the steering committee and stakeholder group established in the first phase, the attached proposal is an estimate that will likely change and is informed by Lotic's extensive experience developing SMP's.

Most relevant to the proposal at hand is Lotic's scope for this first phase, which is excerpted here and included in its entirety with the full scope below.

C.1 Phase I

C.1.1 Engage Local Stakeholders

Description

Evaluation of the project scope by local stakeholders will provide meaningful context for development of a purpose statement and set of planning principles that will guide the remainder of the planning effort.

Deliverables:

1. Memorandum outlining a purpose statement and set of guiding principles for the planning effort
2. A stakeholder engagement plan for refinement and implementation by MSI and TU.

C.1.2 Review Existing Data and Information

Description

Local organizations, federal and state agencies, the SWBRT and others have produced information and data relevant to characterizing E&R needs on streams and rivers throughout the Southwest Basin. Some need exists to aggregate this information for the San Juan River and its major tributaries to ensure that planning activities are informed by and grounded in the rich historical context of assessment activities.

Deliverables:

1. Technical report summarizing the availability data relevant to environmental and recreational needs assessments. Report will highlight previously-identified resource management needs or critical data gaps relevant to subsequent planning steps.
2. Map of known high-value aquatic biota attributes throughout the project area.
3. Map of known high-value riparian attributes throughout the project area.

C.1.3 Characterize Ecosystem Services Delivery

Description

Local communities derive an array of goods and services from riverine ecosystems. Relevant categories of ecosystem services include regulating services (e.g. flood abatement, groundwater recharge, water purification), provisioning services (e.g. agricultural production, drinking water supply, capture fisheries), and cultural services (e.g. boating recreation, angling recreation, aesthetic values). Where mismatches exist between demand for an ecosystem service and the ability of the

river to provide it, need and opportunity for water management planning may exist.

Deliverables:

1. Report and accompanying maps and graphics summarizing the relative priorities that local communities assign to the delivery of ecosystem goods and services from streams reaches throughout the project area. The report will suggest the likely drivers of and greatest risks to unsatisfied demand for ecosystem goods and services across the project area.

C.1.4. Refine Scope of Work for Phase II Efforts

Description

Completion of Phase I of this multi-year project will provide evidence, experience, and a history of stakeholder engagement that will allow MSU and TU to develop a refined scope of work for Phase II.

Deliverables:

1. Revised scope of work for inclusion in future grant requests for Phase II planning.

Project Proposal

Environmental and Recreational Water
Supply Needs Assessment and Integrated
Water Management Plan: San Juan River,
Colorado



REVISED: 10/29/17

Prepared For:



Mountain Studies Institute
1305 Snowden St.
Silverton, CO 81433



Southwest Colorado Basin Roundtable
841 Second Avenue, West Building
P.O. Box 475
Durango, CO 81302



Trout Unlimited
1536 Wynkoop Street
Denver, CO 80202

A. INTRODUCTION AND BACKGROUND

The Colorado Water Plan seeks to understand the state's water needs, identify gaps and promote projects and processes to meet those needs. While developing its Basin Implementation Plan (BIP), the Southwest Basin Roundtable (SWBRT) identified a significant gap in information necessary to understand environmental and recreational (E&R) water needs. Understanding E&R water needs is particularly challenging given the size of the area and diversity of the nine basins that make up the SWBRT's area of interest. Given these challenges, the SWBRT began supporting efforts to gather and collate E&R water needs information in 2016. Trout Unlimited and the Mountain Studies Institute are interested in convening a stakeholder process representing a wide range of interests in the area to develop an understanding of E&R water needs and to identify and evaluate opportunities for cooperative resource management or project development to meet the diversity of water use needs present in the San Juan River Basin.

B. PURPOSE STATEMENT

This project aims to provide a framework for identifying environmental and recreational water supply needs and developing cooperative efforts to manage riverine resources in the San Juan watershed to optimize support for said needs. This project specifically responds to recommendations included in the 2015 Southwest Basin Implementation Plan (BIP):

“With respect to the Southwest Basin’s Environmental and Recreational values and water needs, the Roundtable recognizes that there are significant gaps in the data and understanding regarding the flows and other conditions necessary to sustain these values. The Roundtable also recognizes that the tools currently available to help maintain those conditions are limited. The Roundtable has identified two methods that it hopes can help address and bridge this need for additional information and tools. These are:

- 1. Evaluation of environmental and or recreation gaps is planned to be conducted for improvement of non-consumptive resources and/or in collaborative efforts with development of consumptive IPPs. The evaluations may be conducted by a subgroup of the Roundtable or by individuals, groups, or organizations with input from the Roundtable. The evaluation may utilize methodologies such as the southwest attribute map, flow evaluation tool, R2 Cross, and any other tools that may be available.*
- 2. Where environmental and/or recreational gaps are identified, a collaborative effort will be initiated to develop innovative tools to protect water identified as necessary to address these gaps.”*

These efforts will be conducted in the San Juan basin on a subset of river and streams in Archuleta, Mineral and Hinsdale Counties. Waterways subjected to evaluation will include the San Juan River mainstem above Navajo Lake, the East Fork of the San Juan River, the West Fork of the San Juan River, the Rio Blanco River, Navajo River, and the Piedra River below Highway 160. Other tributaries may be included following consultation with local stakeholders. These tributaries may include Mill Creek, Four Mile Creek, Martinez Creek, Cat Creek, and Stollsteimer Creek.

C. OBJECTIVES

The anticipated tasks associated with this project are summarized through extension of the Rational Planning Model (Taylor, 1998) (Figure 1). This effort will begin with refinement of the purpose and scope detailed in this document and will conclude with the evaluation and prioritization of alternative actions. It is our expectation that MSI and TU will be responsible for convening and managing the stakeholder group that will guide the process. Based on our experience with the dynamic nature of efforts to evaluate E&R needs and conduct integrated water management planning in other areas of the State, the specific tasks associated with each planning phase listed below may require supplementation, modification or removal prior to completion of the proposed work. The tasks and objectives will be completed in three distinct phases. The first phase will focus on 1) assembling a group of stakeholders to guide planning activities and 2) identifying important environmental and recreational attributes present on streams and rivers in the basin. The second phase of work will involve 1) assessing ecosystem condition and environmental flow needs and evaluating recreational use preferences and 2) characterizing the type and location of E&R attributes at risk and working with stakeholders to identify specific planning goals around them. The final phase of work will entail 4) working with stakeholders to identify collaborative opportunities for projects and processes that may help meet the diversity of use needs present in the basin and 2) evaluating the relative effectiveness and feasibility of each identified opportunity to prioritize them according to their anticipated implementation success. Implementation, monitoring, and adaptive management of planning recommendations will occur after the third phase is completed.

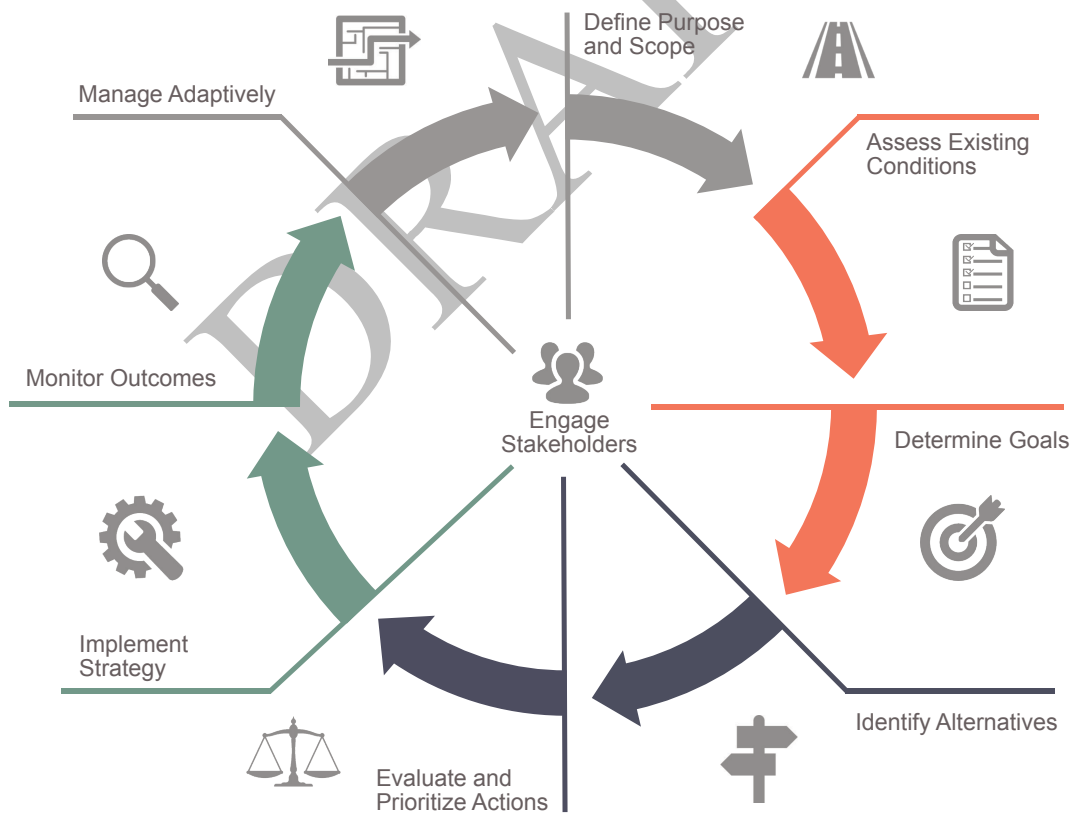


FIGURE 1. MODIFICATION OF THE RATIONAL PLANNING MODEL (TAYLOR, 1998) TO ACCOMMODATE THE UNIQUE NEEDS OF INTEGRATED WATER MANAGEMENT PLANNING ON COLORADO STREAMS AND RIVERS.

The three phases of work will occur over several years, with the first phase beginning after successful procurement of funding from the CWCB and the Basin Roundtable in the spring of 2018. Work on Phase I is expected to result in development of a scope of work and a set of funding requests for Phase II. We expect that these deliverables from Phase I will be completed by November of 2018. The anticipated start date for Phase II is April of 2019. This effort will last for approximately one year, but will produce sufficient information to allow MSI, TU, and local stakeholders to determine whether or not it is appropriate to develop work plans and pursue funding for Phase III by November of 2019. We expect that Phase III will begin in April of 2020 and last approximately one year.

C.1 Phase I

C.1.1 Engage Local Stakeholders

Description

Evaluation of the project scope by local stakeholders will provide meaningful context for development of a purpose statement and set of planning principles that will guide the remainder of the planning effort.

Methods/Procedures

Over the course of several months, TU and MSI will endeavor to identify relevant stakeholders to the planning process through targeted outreach to individuals and organizations in Pagosa Springs and the surrounding areas. It is anticipated that the stakeholder group will include representatives from conservation organizations, water utilities, town and county staff, agricultural producers, and recreational users of streams and rivers. MSI and TU will engage these stakeholders to review the proposed planning project approach to identify and revise any tasks or objectives that do not adequately respond to local needs and expectations. Discussions with stakeholders will also identify any specific issues that planning efforts should respond to. These issues may include anticipated impacts of climate change, in-basin demand growth, development of conditional water rights. Lotic will subsequently assist TU and MSI in the development of a stakeholder engagement plan that responds to the revised scope of work. This plan will include the list of stakeholders that should be included in subsequent planning discussions, the principals that should guide these discussions, and a general schedule for stakeholder meetings over the life of the planning process. TU and MIS will be responsible for and all activities related to scheduling, organizing, convening and facilitating stakeholder meetings over the lifetime of the project.

Deliverables:

1. Memorandum outlining a purpose statement and set of guiding principles for the planning effort
2. A stakeholder engagement plan for refinement and implementation by MSI and TU.

C.1.2 Review Existing Data and Information

Description

Local organizations, federal and state agencies, the SWBRT and others have produced information and data relevant to characterizing E&R needs on streams and rivers throughout the Southwest Basin. Some need exists to aggregate this information for the San Juan River and its major tributaries to ensure that planning activities are informed by and grounded in the rich historical context of assessment activities.

Methods/Procedures

Lotic will review the BIP, the Non-consumptive Needs Assessment included in the 2010 Statewide Water Supply Initiative, Colorado Natural Heritage Program riparian assessments, resource management agency (e.g. USGS, USFS, CPW, etc.) reports and other data/information sources for the San Juan watershed. Lotic will endeavor to summarize findings from existing reports or studies that relate land and water use activities to conditions of ecological or recreational attributes along streams and rivers in the project area. Lotic will also highlight designated high-value ecological areas (e.g. native trout habitat, rare and significant plant communities, etc.) within the San Juan watershed.

Deliverables:

1. Technical report summarizing the availability data relevant to environmental and recreational needs assessments. Report will highlight previously-identified resource management needs or critical data gaps relevant to subsequent planning steps.
2. Map of known high-value aquatic biota attributes throughout the project area.
3. Map of known high-value riparian attributes throughout the project area.

C.1.3 Characterize Ecosystem Services Delivery

Description

Local communities derive an array of goods and services from riverine ecosystems. Relevant categories of ecosystem services include *regulating services* (e.g. flood abatement, groundwater recharge, water purification), *provisioning services* (e.g. agricultural production, drinking water supply, capture fisheries), and *cultural services* (e.g. boating recreation, angling recreation, aesthetic values). Where mismatches exist between demand for an ecosystem service and the ability of the river to provide it, need and opportunity for water management planning may exist.

Methods/Procedures

MSI, TU, and Lotic will work with local stakeholders to characterize and prioritize the ecosystem goods and services that local communities derive from the riverine landscape. This assessment will largely rely on qualitative information (e.g. local perceptions and anecdotal evidence) but may be informed by readily-available quantitative data (e.g. hydrological time series, consumptive use water demands, proximity of infrastructure to floodplains, recreational use surveys, etc.) to characterize the relative demand for ecosystem goods and services on stream reaches throughout the project area and the ability of the system to meet those demands. All results will be compiled into visuals and tables that depict the relative demand for goods and services at different points in the watershed, juxtaposed against the perceived ability of the ecosystem to deliver those goods and services in high demand.

Deliverables

1. Report and accompanying maps and graphics summarizing the relative priorities that local communities assign to the delivery of ecosystem goods and services from streams reaches throughout the project area. The report will suggest the likely drivers of and greatest risks to unsatisfied demand for ecosystem goods and services across the project area.

C.1.4. Refine Scope of Work for Phase II Efforts

Description

Completion of Phase I of this multi-year project will provide evidence, experience, and a history of stakeholder engagement that will allow MSU and TU to develop a refined scope of work for Phase II.

Method/Procedure

MSI, TU, and Lotic will reflect on geographic areas within the San Juan watershed, experiences with stakeholders, and high-priority issues identified by the local community to determine which streams/reaches in the watershed are good candidates for focused planning. Critically, this task will include consideration of how to integrate ongoing efforts to characterize forest health and impacts of forest management on waterways in the San Juan watershed.

Deliverables

1. Revised scope of work for inclusion in future grant requests for Phase II planning.

C.2 Phase II

C.2.1 Characterize Hydrological Regimes

Description

River systems subject to hydrological change under human management are vulnerable to shifts in the composition and resiliency of both structural and biological components of the ecosystem. The Natural Flow Paradigm (Poff et al., 1997) postulates that streamflows represent the key driver of riverine structure and function. Changes in the timing and magnitude of various elements of the hydrological regime can produce cascading effects (or positive feedback loops) between: 1) the availability and quality of aquatic habitat, 2) the condition and extent of riparian zones, and 3) the dynamics and evolutionary trajectory of channel structure. Therefore, a detailed understanding of the hydrological regime at various locations throughout a watershed provides important context for understanding changes to other ecosystem components. Critically, in order to provide this understanding in Colorado, it is necessary to characterize the administrative and operational conditions that govern the way that water is stored, diverted, consumed, and returned to river systems in time and place.

Methods/Procedures

Lotic will refine the Colorado Decision Support System StateMOD simulation model for the Southwest Basin to enable daily streamflow simulations at all major reservoirs and or surface water diversion points within the project area. This model will be used to simulate several hydrological scenarios: natural conditions, existing conditions, and, possibly, climate change or in-basin demand growth futures.

Deliverables:

1. Data tables containing statistical characterizations of hydrological regime behavior at major tributary junctions, reservoirs, and surface water diversions throughout the study area.
2. Graphics characterizing typical hydrographs under wet, average, and dry conditions at major tributary junctions, reservoirs, and surface water diversions throughout the study area.

C.2.2 Classify Fluvial Geomorphological Forms and Processes

Description

Stream channel morphology and evolution tend to reflect the dominant boundary conditions present in each landscape. Channels respond in varying degrees to regional and local conditions, including: local topography, patterns of hillslope erosion, wildlife or stock browsing in riparian areas, precipitation regimes, and patterns of peak and low-flow discharges. In many areas, local channel dynamics reflect changes in land use/land cover or water management across short, medium, and long timescales. Classifying river channel types provides a useful framework to understand the dominant physical processes at a position in the stream network. This process based understanding of channel form is useful for contextualizing historical impacts to riverine ecosystem function or for anticipating future shifts in ecosystem function following some altered condition. In this way, river classification not only simplifies communication about the ways that dynamic physical processes manifest themselves across the landscape, but also aids in natural resource use decision-making.

Methods/Procedures

Lotic will implement a process-based channel classification framework for delineating channel form and function throughout in the project area. Lotic will use stream geometry, planform, and geomorphic features of the floodplain and instream segments to classify stream reaches in terms of channel behavior, not just current physical character. The implemented classification framework is a hierarchical classification tree that begins broadly with valley characteristics and increases in specificity with floodplain geomorphic features, in-stream geomorphic features, and substrate types.

Deliverables:

1. Map of channels classified down to the level of the floodplain and instream geomorphic features for the entire project area.

C.2.3 Characterize Water Quality

Description

The chemistry and physical characteristics (e.g. temperature, salinity, etc.) of streams and rivers largely dictates they structure of the biological communities that can inhabit them, and the way in which local communities can utilize surface water as municipal drinking water supply or irrigation for agricultural production.

Methods/Procedures

Lotic will evaluate historical stream temperature and water chemistry data against State of Colorado water quality standards for streams and rivers in the project area to develop an index of water quality concern. This index will be based on nonparametric statistical characterizations that identify multiple impairment thresholds (e.g., satisfactory, concern, poor, impaired) for each water quality parameter relevant to aquatic life or recreational use. Particular attention will be paid to water quality parameters that are somewhat controlled by use and management of water (e.g. water temperature, selenium). Results from this assessment will provide important context for understanding the dominant climatic, land cover, and land use controls on a suite of water quality parameters that constrain ecological function or recreational use opportunities.

Deliverables:

1. Table of water quality impairment thresholds for all historical water quality data collection locations throughout the project area.

C.2.4 Characterize Environmental Flows

Description

Landscape and channel scale processes play a significant role in driving the condition of ecological resources that local communities typically derive value from. Interactions between hydrology, channel morphology, water quality, and sediment transport mediate riparian conditions and aquatic habitat quality and availability. We will apply desktop assessment methods (e.g. GIS and aerial photography analysis, hydrological time series evaluation, etc.) and rapid assessment field techniques to corroborate and supplement existing information regarding the hydrological conditions necessary for supporting resilient ecological systems. The specific type and number of methods applied will be based on data availability, refinement of project geographic scope and scale (see C.1), and preferences expressed by stakeholders. These methodologies may include the following:

Methods/Procedures

Lotic will utilize a suite of methods to characterize the hydrological and hydraulic conditions required to maintain channel forms, riparian recruitment, and aquatic habitat. All assessments will utilize relatively coarse methodologies in order to economically characterize flow needs across large areas. Lotic will implement the wetted perimeter and R2Cross methodologies to characterize low flow thresholds for aquatic life use needs. Hydrologic time series information will be used to evaluate the timing, duration, and magnitude of non-optimal minimum conditions across the project area. These assessment results will be combined with a survey of structural impediments (e.g. culverts, diversion structures, etc.) to upstream-downstream movement of fish and other species throughout stream networks in the project area and an identification of streamflow states that enable/prohibit aquatic organism passage through these structures. Lotic will utilize hydrological change metrics, assessment of floodplain inundation extent and frequency, and/or the "Recruitment Box" model of (Mahoney and Rood, 1998) to identify the hydrograph peak and receding limb characteristics necessary to support riparian vegetation recruitment and groundwater-surface water interactions on floodplains. Characterization of channel maintenance and flushing flow needs will require collection of sediment size distribution on stream reaches throughout the project area and development and use of 1D hydraulic simulation models.

Deliverables:

1. Technical report summarizing environmental flows assessment methodologies and results.

C.2.5 Characterize Recreational Flows

Description

MSI, TU and Lotic will work with stakeholders to map high-value recreational attributes throughout the project area and characterize community preferences for flows supporting whitewater boating tourism, and popular locations for angling by boat, wading or bank fishing.

Methods/Procedures

Lotic will contract with American whitewater (AW) to develop and distribute whitewater boater streamflow preference surveys for rivers in the project area. AW will compile results from these surveys to create user preference curves that can inform assessments of the timing and number of days available to whitewater enthusiasts under optimal and sub-optimal use conditions. Lotic will work with staff from land and water resource management agencies and with local anglers and guiding services to collect similar information about angler streamflow preferences for float, wade,

and bank fishing on the high-priority planning reaches. Results from both survey efforts will be summarized to characterize the number of “boatable days” and “fishable days” available to users on stream reaches in the study area. Lotic will subsequently work with stakeholders to characterize perceptions about the primary constraints on recreational use opportunity on each reach. Identified constraints may include: streamflow variability, access, structural impediments, etc.

Deliverables:

1. Map of known high-value recreational attributes on the priority stream reaches
2. Technical report detailing the results from the whitewater boating surveys and the “boatable days” assessment and discussing the primary constraint(s) on recreational use on various reaches.
3. Technical report detailing the results from the angler surveys and the “fishable days” assessment and discussing the primary constraint(s) on recreational use on various reaches.

C.2.6 Identify High-Priority Management Issues and Locations

Description

Significant consideration will be given to language in the BIP and companion IPP list. Stakeholders may want to consider management issues that 1) reflect existing conditions (i.e. reactive planning) and 2) anticipate some altered future condition (i.e. proactive planning). Reactive planning may consider protection of high-value attributes not currently at risk or projects and processes designed to improve the condition of some degraded attribute(s). Conversely, proactive planning may consider the design elements, mitigation measures or operational principles necessary to minimize negative future impacts to E&R uses that result from water (or land) development projects or changes in climate.

Methods/Procedures

MSI and TU will host several stakeholder meetings to discuss the results of all planning efforts to date. Specifically, discussions with focus on areas where local communities and resource management agencies identify high-value environmental and recreational attributes, or where gaps exist between the demand for ecosystem goods and services and the capacity for streams and rivers to produce them. Lotic will help MSI guide stakeholders through a structured process for prioritizing management issues and geographic locations across the planning area.

Deliverables:

1. Memorandum detailing high-priority planning issues identified by stakeholders
2. Map of high-priority stream reaches

C.2.7 Develop Management Goals and Objectives

Description

The characterization of planning goals and objectives is necessary to direct the type of focused study needed to identify alternatives that respond to high-priority issues identified by stakeholders.

Methods/Procedures

MSI, TU, and Lotic will work with stakeholders to articulate specific management goals and objectives that respond to the high-priority issues identified previously. This effort will include discussions of morphologically-based, biologically-based, or flow-based management targets used

as a direct or indirect measure of riparian area health, recreational use opportunity, or health of aquatic biota.

Deliverables:

- Memorandum detailing planning goals and objectives identified by stakeholders

C.3 Phase III

C.3.1 Identify alternatives and assemble relevant stakeholders

Description

Project coordinators, consultants, and stakeholders will identify candidate structural projects, collaborative processes or management actions that respond to the planning goals and objectives. These actions may include, but will not be limited to, protection measures for high-value attributes, diversion structure improvements, agricultural efficiency improvements, in-channel habitat restoration, reservoir development and release schedule recommendations, and water leasing programs. Candidate actions will be drawn from several sources.

Methods/Procedures

Lotic will initially identify alternatives through internal assessment of hydrological conditions, water use and administration, and ecological needs. Discussions with local stakeholders and reference to the Southwest BIP list of IPPs may additionally provide candidate actions for implementation in the project area. While there may be a significant number of candidate projects suggested or identified, Lotic and MSI will use a high-level, expert assessment of feasibility and effectiveness to limit the list to only those actions that have the greatest chance of occurring and/or succeeding. Following the identification of actions, it is important to identify stakeholders with the greatest ability to exert control on outcomes or who are likely to be impacted by the direct or indirect effects of the proposed alternatives. MSI and TU will identify the stakeholders that should be primarily engaged in discussions about the relative merits of the identified alternatives.

Deliverables:

1. Table identifying up to ten candidate structural projects, collaborative processes or management actions that respond to the planning goals and objectives. Table will reference candidate actions against high-priority planning reaches and the management issues present on those reaches. Table will also include the list of stakeholders critical to successful evaluation of effectiveness and feasibility of each alternative action.

C.3.2 Characterize Effectiveness of Alternatives

Description

The ability of an action to meet a stated planning goal or objective characterizes its effectiveness. Assessing effectiveness is, therefore, a critical first step in a cost-benefit analysis used to prioritize the identified alternatives.

Methods/Procedures

Where identified alternatives are expected to impact hydrology, Lotic will use the simulation tools developed in Phase II to assess the likely hydrological effects of the proposed actions. For structural projects (e.g. diversion structure improvements), Lotic will use conceptual level engineering assessments to evaluate hydraulic effects. Environmental Flows assessment results and

recreational use flow preference survey results will be used to help predict ecological and recreational use outcomes of each alternative. Predicted outcomes will be assessed against stakeholder-identified management goals and objectives to characterize their relative effectiveness. Actions will then be ranked against each other based on their ability to meet stated goals and objectives.

Deliverables:

1. Expansion of the table developed in C.3.1 to include the relative effectiveness rank assigned to each alternative.
2. Technical report discussing the employed methodologies and assessment results characterizing the effectiveness of each proposed alternative.

C.3.3 Characterize Feasibility of Alternatives

Description

The characterization of feasibility for each alternative is a social exercise that requires careful evaluation of administrative, legal, financial, and institutional constraints on a given action.

Methods/Procedures

Lotic will initially utilize streamflow records, hydrological simulation products, records from the Colorado Department of Water Resources, existing engineering reports, and discussions with local water users to characterize the demands, efficiencies, and use shortages associated with various uses of water from the high-priority reaches. We will utilize available engineering assessments or secure new conceptual level assessments to provide important information about the costs of structural projects. We will work with the local Water Commissioner to identify critical administrative constraints on water management alternatives. We will also work with stakeholders to further characterize land ownership and institutional constraints and understand local perceptions of equitable cost allocation for E&R use projects. Through this process, we hope to identify likely proponents/champions for specific issues and areas of broad stakeholder interest and support. We will subsequently work with the project coordinators and local stakeholders to rank alternatives according to their relative feasibility.

Deliverables:

1. Expansion of the table developed in C.3.2 to include the relative feasibility rank assigned to each alternative.
2. Technical report discussing the employed methodologies and stakeholder discussions characterizing the feasibility of each proposed alternative.

C.3.4 Prioritize Actions

Description

Some highly-effective actions may have limited feasibility and some highly feasible actions may not be very effective. Stakeholders will consider the tradeoffs associated with each proposed alternative in an effort to prioritize them against each other.

Methods/Procedures

MSI, TU, and Lotic will work with stakeholders to integrate the results from the effectiveness and feasibility assessments above and identify up to three high-priority actions for protecting or improving environmental and/or recreational flows. Lotic will identify a conceptual level

E. ESTIMATED PROJECT COSTS

Lotic Hydrological estimates a fee of \$161,414.00 to complete all three phases of work. Of this total, we estimate that it will cost \$16,225.00 to complete the objectives and tasks outlined in Phase I. This cost estimate includes periodic participation in project coordination meetings, travel to Pagosa Springs for three stakeholder meetings and associated travel time. Further refinement or adjustment of tasks following project coordinator and stakeholder discussions may lead to concomitant adjustment of estimated project costs.

Task	Subtask	Description	Estimated Fee
Project Management		Stakeholder Meetings, Phone calls with project coordinators, etc.	\$ 12,150.00
Phase I	1	Engage Local Stakeholders	\$ 11,325.00
	2	Review Existing Data and Information	
	3	Characterize Delivery of Ecosystem Services	
	4	Develop Scope for Phase II	
Phase II	1	Characterize Hydrological Regimes	\$ 92,250.00
	2	Classify Geomorphological Form and Processes	
	3	Characterize Water Quality	
	4	Characterize Environmental Flows	
	5	Characterize Recreational Flows	
	6	Identify Priority Management Issues	
	7	Develop Management Goals and Objectives	
Phase III	1	Identify Alternatives and Relevant stakeholders	\$ 33,615.00
	2	Characterize Effectiveness	
	3	Characterize Feasibility	
	4	Prioritize Actions	
Labor Subtotal			\$ 149,340.00
Direct Costs	Per-diem (Full Days)		\$ 1,377.00
	Per-diem (Half Days)		\$ 1,836.00
	Lodging		\$ -
	Mileage		\$ 3,861.00
	Subcontracts		\$ 5,000.00
Direct Costs Subtotal			\$ 12,074.00
Project Total			\$ 161,414.00

F. QUALIFICATIONS

Lotic Hydrological, LLC provides technical expertise, water resource engineering services and a firm commitment to scientific problem solving when engaged in both field data collection and complex quantitative analysis. We generate the high-quality data tools and interpretations necessary to inform science based decision-making in public policy development and natural resource management. Our goal is to help clients implement strategies that protect diverse water uses, while maintaining high levels of environmental quality and contributing to the long-term stewardship of our regional water resources.

Our firm employs a diverse technical skill set, strong leadership, interpersonal, and communication skills, and a broad knowledge base for considering the multi-faceted nature of natural resource management issues. We are practiced and effective at engaging stakeholders and presenting technical material to diverse audiences in a variety of formats. We work independently or collaboratively to implement various phases of natural resource project management, including: problem identification, environmental data collection and management; quantitative data analysis; synthesis of results; and technical reporting.

We work with city and county governments, State and Federal agencies, nonprofit organizations, and specialized subcontractors. A small staff and flexible business model allow us to remain highly responsive to clients as we execute projects. These characteristics and our focus on producing high-quality and timely work products also help us create and maintain long-term relationships with the clients we serve.

F.1 Key Personnel

Seth Mason, M.S. completed his graduate level training in Land Resources and Environmental Sciences at Montana State University. He received his B.A. in Environmental Studies from the University of Colorado, Boulder. He specializes in hydrological modeling; stream characterization; deployment and operation of data collection and management systems; and development and coordination of water quality monitoring and assessment activities. Seth works extensively with city and county governments, federal agencies, and 501(c)3 organizations.

Publications and Presentations

- Mason, S.J.K., Payn, R., Izurieta, C. (In Preparation) An extensible object oriented metamodel for describing, sharing, and integrating data in the earth and ecological sciences. *Environmental Modeling and Software*.
- Mason, S.J.K., Cleveland, S., Izurieta, C., Llovet, P., Poole, G.C. (2014) The VOEIS Data Hub: A Centralized Tool for Managing, Archiving, and Serving Data in Ecological Research Laboratories. *Environmental Modeling and Software*.
- Mason, S.J.K., B.L. McGlynn, and G.C. Poole. 2012. Hydrologic response to channel reconfiguration on Silver Bow Creek, Montana. *Journal of Hydrology* 438-439: 125-136. DOI: 10.1016/j.jhydrol.2012.03.010
- Mason, S.J.K., Cleveland, S., Izurieta, C., Llovet, P., Poole, G.C. (2012) The Virtual Observatory and Ecological Informatics System (VOEIS): Using RESTful architecture and an extensible data model to provide a unique data management solution. *Spring Runoff Conference* (April 3-4, Logan, UT)
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- Mason, S.J.K., B.L. McGlynn, and G.C. Poole. 2010. Assessing hydrologic response to channel reconfiguration. *NABS/ASLO Annual Conference* (June 6-12, 2010).
- Mason, S.J.K., B.L. McGlynn, and G.C. Poole. 2010. Assessing hydrologic response to channel reconfiguration. *RRNW Annual Symposium* (February 1-4, 2010).
- Mason, S.J.K., B.L. McGlynn, and G.C. Poole. 2009. Assessing groundwater-surface water interactions before and after stream channel reconstruction: science to inform the restoration process, Silver Bow Creek, Montana. *Montana Section AWRA Conference* (October 1-2, 2009).

Field and Technical Proficiencies

Solar array and battery bank setup, Meteorological tower set-up, Radio telemetry communication systems, Bathymetric mapping, Data collection equipment:, Campbell Scientific CR1000, CR10X, and CR10 dataloggers, Acoustic Doppler Current Profilers, RTC GPS surveying.

Methodological Proficiencies

Stream discharge measurements (ADCP, dilution gauging, velocity-area techniques), stream tracer experiments (NaCl, Rhodamine WT), benthic macroinvertebrate sampling, synoptic stream temperature gauging, stream metabolism experiments, numerical solute transport modeling, geostatistical analysis, numerical hydrological modeling, numerical ecosystem function modeling.

Programming and Computing Proficiencies

Python, ArcGIS, Matlab, Excel, R, Loggernet, CR-Basic, and Edlog (Campbell Scientific), Microsoft Office, Javascript, HTML

Jessica Mason, P.E., M.S. completed her advanced degree in Civil Engineering at Montana State University where she focused on water resources engineering. She has a background in hydrological analysis of surface and groundwater systems, hydraulic modeling, analysis and design, floodplain delineations, water quality sampling and evaluations, water supply and water rights engineering, stormwater management design, field instrumentation and measurement, and remote data collection.

Continuing Professional Education:

Waterway Construction, Storm Water Management and Basic Wetland Identification and Delineation, Streamwater Restoration, Sediment and Erosion Control, Storm Drain Design, Scour Analysis, Open Channel Hydraulics, Watershed Hydrology, Closed Conduit Design, Groundwater Contamination Remediation, Geographic Information Systems, Advanced Environmental Science Data Acquisition and Analysis, Quantitative Methods for Environmental Modelers, Professional Engineering Review

Computing and Programming Skills:

RiverWare, MODSIM, MS Office (Word, Excel, Power Point), HEC-RAS, ArcGIS, AutoCAD, MicroStation, MathCAD, Visual Basic programming, Matlab programming, Campbell Scientific datalogger programming, QGIS, ArcGIS.

Professional Memberships and Credentials:

American Society of Civil Engineers (ASCE), *Member* (1999-present)
Fundamentals of Engineering (EIT) (4/2008)
Professional Engineer (PE) (10/2010)

Nathan Fey is the Director of American Whitewater's Colorado River Stewardship Program. A 6th generation Coloradoan, Nathan grew up in Weld and Boulder Counties and is an active paddler across the region. Nathan has been a member of American Whitewater since 1990 and was hired by the organization in 2007 to oversee the organization's Conservation, Access, and Safety Programs in Colorado. Today, Nathan oversees project staff, teams of engineering, legal, and hydrology consultants, over 20 local paddling clubs, and over 700 volunteers. Nathan actively serves as the lead recreation representative in several high-level stakeholder efforts working on collaborative river and resource Management Plans for the Colorado, Dolores, Yampa, and Arkansas basins, including negotiations for Alternatives to Wild and Scenic River designation. Nathan serves on several technical committees formed under Colorado's Water for the 21st Century Act, and is assisting Basin Roundtables with the development of the Colorado Water Plan. Nathan is also a founding partner of Outdoor Alliance Colorado, and is serving as liaison for American Whitewater in OAC initiatives.

Mark Beardsley, the principal at EcoMetrics, is responsible for the design and execution of ecological research projects, hundreds of site-scale assessments, watershed inventories, and several stream and wetland restoration projects that focus on design approaches that promote natural processes and functions. Mark's experience is grounded in a diverse educational background and more than 20 years hands-on field experience as a stream, riparian and wetlands scientist. EcoMetrics is a leader in the development, testing, and implementation of Colorado's [FACWet](#), [FACStream](#), and Stream Health Assessment Framework (SHAF) functional assessment methods and their staff is well-versed in a wide variety of other common ecological and geomorphological assessment frameworks. The systems thinking and organizational framework development experience that EcoMetrics brings to this project will help ensure identification of a well-formulated approach that integrates well with other commonly applied tools, methods, and frameworks.

G. RELEVANT PROJECTS

Yampa River Stream Management Plan, City of Steamboat Springs

Status: Ongoing

Link: <http://steamboatsprings.net/index.aspx?NID=587>

Implemented the Stream Health Assessment Framework to identify and prioritize constraints on ecological function in the section of the Yampa River that flows through Steamboat Springs. Evaluated conditions for channel morphology, hydrologic regime behavior, riparian health and extent, water quality, and aquatic biota. Worked with city staff, NGOs, water resource management agencies, and other stakeholders to identify alternative projects and processes that may help alleviate problematic conditions. Assessed likely outcomes of each alternative to develop a prioritized restoration, conservation, and water management plan for the City of Steamboat Springs.

Upper Colorado River Basin Resource Guide, Colorado Mesa University

Status: Ongoing

Link: <http://www.coloradomesa.edu/water-center/colorado-basin-roundtable-integrated-water-management-planning-framework-project.html>

Developed a data visualization dashboard for presenting diverse hydrological, water quality, water rights, and aquatic biota in an interactive web application. Worked with stakeholders from the Colorado Basin Roundtable to determine likely user workflows and data needs. Leveraged existing Colorado Decision Support Tools (CDSS) and simulation modeling projects to support efforts to identify locations in the basin in need of focused planning around environmental and/or recreational needs.

Upper Roaring Fork River Management Plan, City of Aspen and Pitkin County

Status: Ongoing

Link: <http://www.aspencommunityvoice.com/upper-roaring-fork-river-management-plan>

Synthesized existing research, characterized environmental and recreational use needs, and evaluated management opportunities for meeting those needs on the Upper Roaring Fork River near Aspen. Considered channel maintenance flows, riparian conditions, aquatic habitat quality and

connectivity, and recreational use preferences. Managed a team of consultants, including aquatic biologists, water rights experts, and a dialog facilitation organization to implement the planning effort. Planning outcomes will inform management of City and County owned properties and water rights, development of policy and regulations, and participation in other regional water planning efforts (e.g. Twin Lakes Exchange) with diverse groups of stakeholders.

San Miguel Pilot Project, Trout Unlimited

Status: Ongoing

Link: Not Available

Prototyped an approach for assessing non-consumptive use needs and evaluating management opportunities for meeting those needs in Colorado's Southwest Basin using the San Miguel watershed as a test-case. Considered channel maintenance flows, riparian conditions, aquatic habitat quality and connectivity, and recreational use preferences. Use field data to develop and refine hydrological and hydraulic simulation models that characterize existing conditions and enable evaluation of 'what-if' scenarios. Engaged stakeholders to guide selection of management opportunities for evaluation in the assessment framework. Planning outcomes intend to instruct future water planning, granting and approval processes.

Crystal River Stream Management Plan, Roaring Fork Conservancy

Status: Completed 2016

Link: <http://www.roaringfork.org/publications/2016-crystal-river-management-plan/>

Produced a guidance document for implementing high-priority projects and executing feasible water resource management alternatives in the Crystal River watershed aimed at addressing late season low-flow conditions that impair stream health. This work responded to questions articulated by a diverse group of stakeholders in the Crystal River watershed by conducting six interdisciplinary evaluations of existing physical, biological, and resource management conditions and developing a structured decision support framework for guiding management decisions. The resulting decision support system explicitly simulated watershed hydrology; allocation and administration of water under Colorado's water rights system; 2-dimensional channel hydraulics along 8 miles of the lower Crystal River; and the interplay between channel form, changes in streamflow, and the quality and availability of aquatic habitat. Results from this effort identified, prioritized, and provided initial project scoping for alternative management actions and/or structural solutions available to improve ecological conditions and functions in the Crystal River while recognizing the management constraints imposed by the competing objectives of various local stakeholder groups.

Learning By Doing, Northwest Colorado Council of Governments

Status: Ongoing

Link: <http://www.grandcountylearningbydoing.org>

Participated in an adaptive management program to operate Denver Water's Moffat transmountain diversion system in a manner that mitigates and enhances environmental conditions in the Fraser and upper Colorado River basins. Developed annual operating plans, reviewed stream condition monitoring results and prioritized restoration projects.

Water Quality Sampling and Analysis Plan, City of Aspen

Status: Completed 2015

Link: Not available

Developed a guidance document and set of standard operating procedures for assessing long-term water quality trends on the Roaring Fork River, estimating event mean concentrations for various pollutants in stormwater discharges, and identifying illicit discharges and other water quality impairments within the City of Aspen.

Gore Creek Strategic Action Plan, Town of Vail

Status: Completed 2016

Link: <https://lovevail.org/wp-content/uploads/2016/09/gore-creek-strategic-action-plan.pdf>

Developed a strategic action plan for addressing observed water quality impairments on Gore Creek near the Town of Vail. Evaluated and prioritized an array of tasks that fell within five primary categories: education and outreach campaigns, regulatory changes, implementation of best management practices, streambank restoration and structural BMP projects, and ongoing data collection and study.

Water Quality Monitoring and Assessment Program, Eagle River Watershed Council

Status: Ongoing

Link: <http://www.erwc.org/research/water-quality-monitoring-assessment/>

Coordinated water quality monitoring and assessment activities, provided data interpretation and technical assistance to local governments and resource managers, identified data gaps, and suggested actions to remedy perceived water quality impairments in the Eagle River watershed. Compiled annual technical reports assessing current water quality conditions and trends. Coordinated watershed-wide data collection efforts among multiple agencies to maximize efficiency and fill data gaps. Engaged stakeholders and the general public to enhance community-wide understanding of water quality issues. Developed a long-term water quality monitoring plan for data collection entities within the watershed. Developed a data access portal water quality data collected and analyzed by the program partners (erwc.wqcourier.com).

H. PROJECT REFERENCES

Mely Whiting
Legal Counsel
Trout Unlimited
720-470-4758

Kristen Bertuglia
Environmental Sustainability Manager
Town of Vail
970-477-3455

April Long
Stormwater Manager
City of Aspen
970-429-2781

Rick Lofaro
Executive Director
Roaring Fork Conservancy
970-927-1290

ATTACHMENT F: BIOGRAPHIES AND EXAMPLES OF WORK

1.1 Biographies

Mr. Aaron Kimple, Mountain Studies Institute (applicant, fiscal agent) is a Program Director of Forest Health for Mountain Studies Institute (MSI). He has more than 10 years of experience in project management, nearly 20 years of experience with landscape ecology and environmental monitoring, and 7 years of experience in public facilitation and community outreach. In his role at MSI, Aaron facilitates partnership development and promotes community involvement. He manages MSI watershed projects, forest health initiatives, and facilitates community stakeholder groups (see San Juan Headwaters Forest Health Partnership & Connecting for Conservation below). Aaron works with the United States Forest Service, Bureau of Land Management, National Park Service, regional tribal entities, and the local governments of Archuleta, San Juan, La Plata and San Miguel Counties. Aaron will administer the grant and coordinate both the steering committee and stakeholder group.

Ms. Mely Whiting, Trout Unlimited Amelia (Mely) Whiting is legal counsel and project manager for Trout Unlimited, where she focuses on projects to protect, reconnect and restore Colorado's coldwater fisheries and their habitat. She has practiced water, public lands and environmental law in Colorado for over 25 years. She was an Assistant Attorney General for the Colorado Attorney General's office in the early 1990s, was in private practice in the late 1990s, and before joining Trout Unlimited, was regional legal counsel with the Solicitor's Office of the Department of the Interior. She has also taught environmental law courses to undergraduate students at Colorado Mountain College. Over the last three years, Mely's primary focus has been on working with partners to fund and implement habitat improvement projects. Mely was born in Montevideo, Uruguay, moving to the United States in the early 1980s. Mely's projects include The Upper Colorado River Wild & Scenic Stakeholder Group and the San Miguel Stream Management Plan. She serves on the Southwest Basin Roundtable as the environmental representative.

Mr. Al Pfister, Western Wildscapes Al is a natural resources manager and certified wildlife biologist that received his Masters from Washington State University working on Postfire Avian Ecology in Yellowstone National Park. He has spent the past 36 years specializing in balancing sensitive and endangered species habitat needs with the surrounding communities' needs. These efforts have involved extensive interaction with Federal, State, County, and local governmental officials; private landowners; Tribal representatives; numerous user groups (recreation, ranching, energy, etc), resolving aquatic and terrestrial management issues.

Mr. Seth Mason, Lotic Hydrological, (Attachment F), Seth completed his graduate level training in Land Resources and Environmental Sciences at Montana State University. He received his B.A. in Environmental studies from the University of Colorado, Boulder. He specializes in hydrological modeling, stream characterization, deployment and operation of data collection and management systems, and development and coordination for water quality monitoring and assessment activities. Seth works extensively with city and county governments, federal agencies, and 501 (c) 3 organizations.

1.2 Examples of Work

a) San Juan Headwaters Forest Health Partnership (MSI)

The San Juan Headwaters Forest Health Partnership (SJHFHP) was established to provide a venue for stakeholders to share perspectives and develop science-based collaborative priorities for management and monitoring of mixed-conifer forests on the Pagosa Ranger District (PRD) of the San Juan National Forest in Southwestern Colorado. The groups focus has broadened to include other vegetation types and forest health issues. The SJHFHP identifies its current purpose as: 1) strengthening regional understanding of methods for improving forest health and watershed resilience; 2) broadening knowledge of forest conditions and needs; 3) generating viable management approaches; 4) initiating projects to address identified needs, and; 5) monitor treatments to guide adaptive management practices. The partnership members are people and groups representing business interests, conservation organizations, local and state governments, federal agencies, recreation interests, ranchers, homeowners associations and scientists, as well as many interested citizens. . MSI has been the coordinator for the San Juan Headwaters Forest Health Partnership for the past five years, during which time the partnership has leveraged over a million dollars in funding and accomplished over 5,000 acres of treatment around priority water resources for communities in Archuleta County.

b) Connecting for Conservation (MSI)

Since 2014, Connecting for Conservation (C4C) has provided networking opportunities and workshops to encourage partnerships and coordinate collection action across a range of non-profit, agencies, owners and disciplines in the Four Corners. C4C was an idea borne from the realization that many organizations in the Four Corners share conservation goals and interests, but lack the resources to bring these goals to fruition as singular, isolated efforts. C4C is the proactive answer to the need for organizational collaboration and shared resources among conservation-minded entities in the Four Corners. Partners come together to identify issues and develop relationships that can address those issues. MSI (applicant) has coordinated C4C efforts since 2012.

c) San Miguel Stream Management Plan (TU)

Trout Unlimited and the San Miguel Watershed Coalition partnered up to develop this stakeholder-driven effort to identify environmental and recreational water supply needs in the San Miguel basin and explore opportunities to cooperatively address identified gaps.

d) USFWS Region 6 Representative on San Juan River Recovery Implementation Committee – Southwestern Colorado, Southeastern Utah, Northwest New Mexico (WW)

Western Wildscapes has served as USFWS representative on interregional committee comprised of Federal and State agencies, Tribal Nations, and environmental organizations directing management and implementation of endangered fish recovery program and water management.

e) Cutthroat Trout Management Efforts (WW)

Mr. Pfister served as USFWS representative in working with numerous stakeholder groups and Federal and State agency representatives in water, land use, and species management issues involving federally listed Lahontan and greenback cutthroat trout, and sensitive Colorado River and Rio Grande cutthroat trout.

f) Pagosa Skyrocket Working Group (WW)

Mr. Pfister facilitating and organizing local stakeholder group comprised of Federal, State, Archuleta County representatives, and private landowners, towards the long-term conservation and eventual delisting of the federally endangered Pagosa skyrocket, a local endemic plant.

g) Gunnison Basin Strategic Committee—Gunnison and Saguache Counties, Colorado (WW)

Served as the USFWS's representative on a 13-member committee comprised of Federal, state, and county representatives; stakeholder and environmental group representatives appointed by Gunnison County Commissioners to deal with issues related to Gunnison Sage-grouse management. Proclamation of Al Pfister Day in Gunnison County, CO. on June 15, 2011 in recognition of efforts with Gunnison Basin Sage-grouse Strategic Committee.

h) Sage-grouse Local Working Groups—Western Colorado (WW)

Served as the USFWS's representative on 11 working stakeholder groups dealing with management issues for activities conducted within greater and Gunnison sage-grouse habitats. USFWS signatory for 5 greater sage-grouse local working group plans.