



# COLORADO WATER CONSERVATION BOARD



## WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Armstrong Creek Restoration Project

### Name of Water Activity/Project

Routt County Conservation District

### Name of Applicant

Yampa/White

Amount from Statewide Account:

35,000.00

Amount from Basin Account(s):

15,000.00

Total WSRA Funds Requested:

50,000.00

### Approving Basin Roundtable(s)

Yampa-White Basin

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### Required Exhibits

- A. Statement of Work, Budget, and Schedule
- B. Project Map
- C. As Needed (i.e. letters of support, photos, maps, etc.)

### Appendices – Reference Material

- 1. Program Information
- 2. Insurance Requirements
- 3. WSRA Standard Contract Information (Required for Projects Over \$100,000)
- 4. W-9 Form (Required for All Projects Prior to Contracting)

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### **Instructions**

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCBC). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCBC staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCBC website at: <http://cwcb.state.co.us> Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: <http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf>

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Greg Johnson – WSRA Application  
Colorado Water Conservation Board  
1580 Logan Street, Suite 200  
Denver, CO 80203  
[gregory.johnson@state.co.us](mailto:gregory.johnson@state.co.us)

If you have questions or need additional assistance, please contact Greg Johnson at: 303-866-3441 x3249 or [gregory.johnson@state.co.us](mailto:gregory.johnson@state.co.us).

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### Part I. - Description of the Applicant (Project Sponsor or Owner);

1.	Applicant Name(s):	Routt County Conservation District		
	Mailing address:	1475 Pine Grove Road Suite 201a Steamboat Springs, CO 80487		
	Taxpayer ID#:	84-0658095		
	Primary Contact:	Jackie Brown	Position/Title:	District Manager
	Email:	Jackie.brown@routtcountycd.com		
	Phone Numbers:	Cell: (970) 819-2484	Office:	(970) 879-3225
	Alternate Contact:	Rick Henderson	Position/Title:	USFS Fisheries Biologist
	Email:	rhenderson01@fs.fed.us		
	Phone Numbers:	Cell: (970) 846-3348	Office:	(970) 870-2219

### 2. Eligible entities for WSRA funds include the following. What type of entity is the Applicant?

- ☐ Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
- ☒ Public (Districts) – authorities, Title 32/special districts, (conservancy, conservation, and irrigation districts), and water activity enterprises.
- ☐ Private Incorporated – mutual ditch companies, homeowners associations, corporations.
- ☐ Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
- ☐ Non-governmental organizations – broadly defined as any organization that is not part of the government.

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3. Provide a brief description of your organization

*The Routt County Conservation District (RCCD) has over a 50 year history of working with local landowners, ranchers, and community groups, as well as local, State, and Federal agencies. RCCD has recently begun working as the Upper Yampa Watershed coordinating group. Other major RCCD accomplishments include implementation of erosion control best management practices (BMPs) and water quality control projects, as well as public education. RCCD distributes newsletters; provides educational scholarships; holds workshops and meeting; and conducts individual consultation to work with, and educate, the public on the protection of watershed resources. RCCD has a demonstration “River Trailer”, which it uses to educate Routt County students, conservation groups, and interested parties on the importance of natural resource conservation and water quality preservation. RCCD partners with NRCS on numerous natural resource, stream channel restoration, wetland protection, and watershed conservation programs.*

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

☒ The Applicant will be able to contract with the CWCB using the Standard Contract

☐ The Applicant has reviewed the standard contract and has some questions/issues/concerns. Please be aware that any deviation from the standard contract could result in a significant delay between grant approval and the funds being available.

6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

*There are no relevant TABOR issues.*

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### Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

☒ Nonconsumptive (Environmental or Recreational)

☐ Agricultural

☐ Municipal/Industrial

☐ Needs Assessment

☐ Education

☐ Other

Explain:

2. If you feel this project addresses multiple purposes please explain.

By reducing erosion along Armstrong Creek (a headwater tributary to Elkhead Creek), this project will reduce the rate at which Elkhead Reservoir fills with sediment (i.e., loses water storage capacity). The three primary water rights owners in Elkhead Reservoir support the project and are providing funding (Tri-State Electric and City of Craig) or a letter of support (Colorado River Water Conservancy District).

3. Is this project primarily a study or implementation of a water activity/project? (Please check only one)

☐ Study

☒ Implementation

4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

New Storage Created (acre-feet)

New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)

Existing Storage Preserved or Enhanced (acre-feet)

5,913

Length of Stream Restored or Protected (linear feet)

Length of Pipe/Canal Built or Improved (linear feet)

Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)

Area of Restored or Preserved Habitat (acres)

Other -- Explain:

2.1 miles of improved habitat

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4. To help us map WSRA projects please include a map (Exhibit B) and provide the general coordinates below:

Latitude: 40.950863

Longitude: -106.825562

5. Please provide an overview/summary of the proposed water activity (no more than one page). Include a description of the overall water activity and specifically what the WSRA funding will be used for. A full **Statement of Work** with a detailed budget and schedule is required as **Exhibit A** of this application.

6.

*Restoration is intended to 1) improve resource conditions in reaches with poor stream health, 2) reduce inputs of sediment from eroding hillslopes and streambanks, 3) reduce stream temperatures, and 4) improve cutthroat trout habitat. Restoration actions are proposed for a 0.61-mile segment of stream within the 2.1 mile long project area. Following are key elements of the project:*

- *Lower reach - redirect the stream channel away from eroding hillslopes through channel relocation or floodplain development against the hillslope.*
- *Upper reach - construct a floodplain within the existing channel, reconnect old channel meanders, and/or create a new, stable stream and floodplain at the same or slightly higher elevation with the appropriate entrenchment ratio and riparian vegetation community.*
- *Aggressively re-vegetate disturbed soils with appropriate species to insure channel stability and minimize colonization by invasive species.*
- *Monitor channel stability and riparian vegetation to determine restoration success.*

*WSRA funds from the Yampa-White Basin Roundtable will be used to cover equipment and labor costs associated with restoration of the lower reach in 2013. The WSRA State funds will be used to hire a consultant to develop the restoration design for the upper reach.*

### Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria**. (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

a) *The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.<sup>1</sup>*

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<sup>1</sup> 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair,

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*This restoration project will not cause injury to vested water rights or decreed conditional water rights.*

- b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRT's evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

*See letter from the Yampa-White Basin Roundtable Chair.*

- c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.<sup>2</sup> The Basin Roundtable Chairs shall include in their approval letters for particular WSRA grant applications, a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

*This project meets the 2010 Statewide Water Supply Initiative recommendations in that it is a multi-purpose (consumptive and non-consumptive) project. Please see the attached letter from the Yampa-White Basin Roundtable Chair.*

- d) **Matching Requirement:** For requests from the **Statewide Fund**, the applicants is required to demonstrate a **20 percent** (or greater) match of the request from the Statewide Account. Statewide requests must also include a minimum match of **5 percent** of the total grant amount from Basin Funds. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the application was submitted to the CWCB. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

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limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.

<sup>2</sup> 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

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<i>Description</i>	<i>Existing Funds</i>	<i>WSRA Funds</i>	<i>Additional Funds Needed</i>	<i>Year Spent</i>
<i>Conceptual Design/NEPA</i>	\$25,000			2011
<i>Phase 1 – Lower Reach</i>	\$30,000			2012
<i>Phase 2 – Lower Reach</i>	\$25,000	\$15,000 (BRT)		2013
<i>Phase 3 – Upper Reach</i>	\$30,000	\$17,500 (State)*		2013
<i>Design</i>				
<i>Phase 3 – Upper Reach</i>	\$45,000	\$17,500 (State)*	\$60,000	2014
<i>Construction</i>				
<i>Monitoring</i>	\$15,000			2012 - 2020
<b>Total</b>	<b>\$170,000</b>	<b>\$50,000</b>	<b>\$60,000</b>	
<i>Existing Funding Sources</i>	<i>In-Kind</i>	<i>Year(s) Spent</i>		
<i>City of Craig</i>		2013		
<i>Colorado Parks and Wildlife</i>	\$15,000	2012 - 2014		
<i>Colorado River Water C. D.</i>		2013		
<i>Routt County Conserv. District</i>	\$10,000	2012 - 2014		
<i>Tri-State Electric</i>		2013		
<i>Trout Unlimited</i>	\$12,000	2011 – 2014		
<i>U.S. Forest Service</i>	\$35,000	2011 - 2014		
<i>Yampa-White Basin Roundtable</i>		2013		

\* Funds to be allocated towards design and construction; exact proportions TBD.

For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria**. (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

**Evaluation Criteria** – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three “tiers” or categories. Each “tier” is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

### Tier 1: Promoting Collaboration/Cooperation and Meeting Water Management Goals and Identified Water Needs

- The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).



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*The restoration project has both a consumptive and non-consumptive benefit. The restoration project will 1) improve habitat for a number of sensitive species, including Colorado River cutthroat trout, 2) restore recreational fishing opportunities in Armstrong Creek, and 3) improve water quality (e.g., temperature, sediment), and 4) reduce sediment loading in Elkhead Reservoir.*

- b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.

*This project address both non-consumptive and consumptive needs, as demonstrated by the eight diverse partners representing County, State, and Federal agencies; an NGO; and three water rights holders which include municipal and industrial uses. This project is located in a priority area identified by fifteen participants of a Local Working Group and the NRCS is in the planning phase for a similar project in the same watershed. As these two projects move forward, collaboration between agencies and NGOs will continue. In addition, existing partners will seek opportunities to involve other stakeholders. Because this project influences water storage capacity in an important reservoir of the Yampa Basin, it is effective in addressing intrabasin needs; it has no influence on interbasin issues.*

- c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

*The project will reduce the rate at which Elkhead Reservoir fills with sediment and will thereby maintain waters storage capacity (i.e., increase capacity relative to the current trend in loss of capacity).*

### Tier 2: Facilitating Water Activity Implementation

- d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).

*Through partnerships and cooperative funding we have acquired the funding necessary to complete restoration actions for the lower reach (in 2013 (\$70,000). In addition, we have acquired \$75,000 of the estimated \$170,000 needed to design and complete restoration actions on the upper reach.*

*The \$35,000 in State WSRA funds would be paired with \$30,000 in existing funds to pay a consultant to complete the restoration design for the upper reach in 2013. This money would also be leveraged as a non-federal match in funding proposals to the National Fish and Wildlife Foundation and National Fish Habitat Action Plan for the remaining \$60,000 needed to complete restoration actions in the upper reach. The total of Basin and Statewide funds are equal to 18% of the total project cost.*

The amount of matching funds provided by the applicant via direct contributions, demonstrable in-kind contributions, and/or other sources demonstrates a significant & appropriate commitment to the project.

*See Part III. 1)d)*

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### Tier 3: The Water Activity Addresses Other Issues of Statewide Value and Maximizes Benefits

- e. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs.

*The project will improve the quality of fishing opportunities and will address the following three environmental objectives:*

- *Improve stream and riparian ecosystem health. This includes improving water quality, decreasing stream temperatures, decreasing sediment inputs, restoring riparian vegetation, and re-connecting the stream and floodplain.*
- *Improve habitat for, and expand the range and long-term viability of, Sensitive species (e.g. Colorado River cutthroat trout).*
- *Increase the resilience and resistance of native aquatic organisms and their habitats to effects of climate change.*

- f. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.

*The project will reduce the rate at which Elkhead Reservoir fills with sediment and will thereby maintain available water storage (relative to the current trend).*

- g. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.

*The project will improve habitat conditions for the following Colorado State Species of Concern: Colorado River cutthroat trout, mountain sucker, northern leopard frog and boreal toad (State Endangered). In addition, because bluehead sucker are negatively impacted by siltation and sedimentation, the project may provide indirect, downstream benefits to this Tier 2 species of “greatest conservation need”.*

- h. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

*Total project cost is estimated at \$280,000. We are asking for \$50,000 in WSRA fund; only 18% of the total cost. The benefits include: improving habitat for five State Species of Concern, improving 2.1 miles of stream habitat and associated riparian wetlands, increasing watershed resilience and resistance to climate change, and reducing sedimentation in Elkhead Reservoir.*

- i. The water activity is complimentary to or assists in the implementation of other CWCB programs.

Continued: Explanation of how the water activity/project meets all applicable  
**Evaluation Criteria. Please attach additional pages as necessary.**

## **Part IV. – Required Supporting Material**

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1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

*This project will restore Armstrong Creek, a headwater tributary to Elkhead Creek. The only water rights within or upstream of the project area are Forest Service stock water developments which would not be affected by the project. The project will improve riparian conditions, and thus should increase storage in the spring and increase flows later in the summer. These changes would be small and are not expected to measurably affect downstream water rights.*

2. Please provide a brief narrative of any related studies or permitting issues.

*The conceptual restoration plan for the upper Elkhead Creek watershed was funded by Trout Unlimited and completed in 2011. The Forest Service completed an Environmental Assessment for the Armstrong Creek Restoration project in June of 2012. A 404 permit was attained from the U.S. Army Corps of Engineers for work completed in the lower reach in 2012. Wetland delineations have been completed for the rest of the lower reach and a 404 permit will be secured prior to construction in 2013. If deemed necessary, a 402 stormwater discharge permit will be secured as well.*

3. Statement of Work, Detailed Budget, and Project Schedule

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement.** All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

**Please provide a detailed statement of work using the template in Exhibit A.** Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

*See Appendix A – Statement of Work*

## REPORTING AND FINAL DELIVERABLE

**Reporting:** The applicant shall provide the CWCB a progress report every 6 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 any major issues that have occurred and any corrective action taken to address these issues.

**Final Deliverable:** At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

## PAYMENT

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Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

### PROJECT LEADS

*Bill Atkinson is an aquatic biologist with Colorado Parks and Wildlife. Bill has worked for the CPW for 14 years having worked on a wide variety of CRCT and native species restoration projects.*


*Brian Hodge is a restoration biologist with Trout Unlimited and has been working in the field of fisheries and aquatic resources for 10 years, during which time his work has focused on the study and conservation of inland and anadromous fishes. Brian holds a B.S. in Hydrobiology from the University of California at Davis and a M.S. in Natural Resources-Fisheries from Humboldt State University.*

*Jackie Brown is the Watershed Coordinator for the Upper Yampa River Watershed Group and is currently finishing a Masters Certificate in Water Resources at Colorado State University. She has a background in business development and has combined this with natural resource conservation in Routt County for the past five years.*

*Liz Schnackenberg has 20 years of experience working as a hydrologist for the US Forest Service. Her work focuses on the effects of land management activities on watershed hydrology and riparian areas, post fire rehabilitation, and watershed restoration. Liz has a bachelor degree in geology, and a M.S. in Watershed Science from Colorado State University.*

*Rick Henderson is a fish biologist with the U.S. Forest Service. Rick has 18 years of fisheries experience having worked throughout the west on monitoring the effects of land management activities and native species restoration.*

The above statements are true to the best of my knowledge:

Signature of Applicant: 

Print Applicant's Name: 

Project Title: 

**Return an electronic version (hardcopy may also be submitted) of this application to:**

Greg Johnson – WSRA Application  
Colorado Water Conservation Board  
1580 Logan Street, Suite 200  
Denver, CO 80203  
[gregory.johnson@state.co.us](mailto:gregory.johnson@state.co.us)

**Exhibit A**  
**Statement of Work**

**WATER ACTIVITY NAME – Armstrong Creek Restoration Project**

**GRANT RECIPIENT – Routt County Conservation District**

**FUNDING SOURCE – Water Supply Reserve Account**

**INTRODUCTION AND BACKGROUND**

*In 2010, Trout Unlimited funded a conceptual plan for restoration of aquatic resources in the upper Elkhead Creek watershed. The Restoration Plan analyzed 30 miles of perennial fish-bearing streams and provided recommendation for restoration of approximately 10 stream miles (estimated cost \$3.8M). An interagency team decided to begin restoration activities in the Armstrong Creek sub-watershed. An environmental assessment was completed in 2011. The restoration actions are intended to improve resource conditions in reaches with poor stream health, reduce inputs of sediment from eroding hillslopes and streambanks, and reduce stream temperatures. Five native fish and amphibian species of concern will benefit from the project.*

*Restoration actions will be completed in three phases. The first phase of work (restoration of 200 feet of stream channel) was completed in 2012. Phase 2—restoration of 1,400 feet of stream channel—will be completed in 2013 using Yampa White Basin Roundtable funds. Phase 3 requires the completion of a project design by a consultant in 2013 and construction of 1,800 feet of stream channel in 2014. Water Supply Reserve Account funds would help to fund Phase 3. The project is funded by eight diverse partners representing County, State, and Federal agencies; Trout Unlimited; and three water rights holders.*

**OBJECTIVES**

*Project objectives are to:*

- *Improve stream and riparian health. This includes improving water quality, decreasing stream temperatures, decreasing sediment inputs, restoring riparian vegetation, and re-connecting the stream and floodplain.*
- *Improve habitat for, and expand the range and long-term viability of, Species of Concern (e.g., CRCT).*
- *Increase the resilience and resistance of native aquatic organisms and their habitats to effects of climate change.*
- *Reduce the amount of sediment entering Elkhead Reservoir.*
- *Determine which stream and riparian restoration techniques are most effective in the Elkhead Creek watershed.*

**TASKS**

*Provide a detailed description of each task using the following format*

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### PHASE 1 – [Restoration Actions on Sites 1 and 5; Lower Reach]

#### Description of Task

*During Phase 1, we restored two sites where the stream was eroding into County Road 80. Wetland delineation, 404 permit, and project designs were completed in-kind by the Forest Service and Trout Unlimited. This work was completed in September 2012.*

#### Method/Procedure

*At Site 1, we constructed a new stream channel on the opposite side of the existing floodplain from the road (100 feet). This involved 1) plugging the existing channel with rootwads, fill, and sedge mats; 2) digging the new channel; 3) creating pools and riffles similar to those surveyed in reference reaches, and excavating a flood plain; 4) replacing sedge mats on the new streambanks and channel; 5) planting willows; and 6) placing excavated material at existing scarp to stabilize the road prism.*

*At Site 5, we constructed a hardened streambank and floodplain using a toe-wood sod mat design (100 feet). This involved 1) using logs and rootwads to create a streambank 30 feet from the road, 2) using excavated material and willow branches to create a floodplain between the new streambank and road, 3) placing sedge mats on the new streambank and floodplain, 4) planting willows, 5) constructing a stable slope between the road and floodplain to stabilize the road prism.*

*Restoration actions were completed using an excavator. Funding, project oversight, and revegetation were conducted by the Forest Service and Trout Unlimited.*

#### Deliverable:

*Restoration actions completed.*



*Figure 1 – Site 1 (left) with new channel construction and Site 5 (right) with hardened streambank and floodplain. The blue line represents the old (i.e., pre-restoration) channel.*

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### PHASE 2 – [Restoration Actions on Sites 2, 3, and 4; Lower Reach]

#### Description of Task

*Planned restoration actions at these sites include a combination of new channel construction and hardened floodplains similar to those constructed at Sites 1 and 5. Wetland delineations are complete and the project design is at 50%. Final design and the 404 permit will be completed by August 1 using in-kind contributions from various partners. Restoration actions will be completed in August and September 2013.*

#### Method/Procedure

*Restoration of Sites 2 and 3 will involve the construction of a new stream channel (600 feet and 200 feet, respectively). Currently the stream runs along an actively slumping hillslope resulting in extensive sediment moving into the channel. The new channels will be constructed on the opposite side of the valley from the eroding hillslopes. Construction methods will be similar to those described for Site 1. See Exhibit B for photograph of Site 2.*

*At Site 4, the stream currently runs along three slumping and eroding hillslope, and consequently introduces sediment erosion into the channel (400 feet). Restoration actions will involve the construction of a hardened streambank and floodplain using a toe-wood sod mat design similar to Site 5.*

*Temporary fencing will be constructed around Sites 1 – 5.*

#### Deliverable

*Restoration actions completed and fences constructed.*

### PHASE 3 – [Upper Reach]

#### Description of Task

*The upper reach is characterized by an incised channel (3 to 6 feet) and actively eroding streambanks. The design and implementation of Phase 3 will be more involved and complex than Phases 1 & 2. Therefore an aquatic restoration consultant will be hired to handle design. The conceptual restoration plan estimated that the design would cost \$60,000. The WSRA State funds would be paired with existing funds to complete the project design in 2013.*

#### Method/Procedure

*Restoration actions within the 1,800 foot long site will consist of a combination of constructing a floodplain within the existing channel, reconnecting old channel meanders, and/or creating a new, stable stream and floodplain at the same or slightly higher elevation. See Exhibit B for photograph of Reach.*

*In 2013, we will apply for \$60,000 in additional grant funding, and will pair these funds with the existing \$45,000 to fund the construction element of Phase 3. Construction will be completed by an experienced restoration contractor. Fencing will be completed with existing funds.*

#### Deliverable

*Completed project design in 2013, and restoration actions completed and fence constructed in 2014.*

### BUDGET

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, \$/unit of material for construction, etc.). A detailed and perfectly balanced budget that shows all costs is

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required for the State's contracting and purchase order processes. Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

*We secured the funding necessary to complete restoration of the lower reach in 2013 (\$70,000). In addition, we have acquired \$75,000 of the estimated \$170,000 needed to design and complete restoration actions on the upper reach. The \$35,000 in State WSRA funds (this proposal) would be paired with \$30,000 in existing funds to pay a consultant to complete the restoration design for the upper reach in 201; any remaining WSRA funds would go towards construction on the upper reach as per the design. This money would also be leveraged as a non-federal match in funding proposals to the National Fish and Wildlife Foundation and National Fish Habitat Action Plan for the remaining \$60,000 needed to complete restoration actions in the upper reach.*

*The template budget tables were not used as all of the funds from this proposal would be used to hire a consultant to complete the design. Part III 1) d) of this proposal outlines the overall project budget in more detail.*

### **SCHEDULE**

Provide a project schedule including key milestones for each task and the completion dates or time period from the Notice to Proceed (NTP). This dating method allows flexibility in the event of potential delays from the procurement process. Sample schedules are provided below. Please note that these schedules are examples and will need to be adapted to fit each individual application.

*A request for proposals for the phase 3 project design will be solicited in May, 2013. Final proposals will be due by July and a selection made by August 1<sup>st</sup>. The final project design will be due from the consultant by February 1<sup>st</sup>, 2014. This will allow time to develop a contract package for project construction in summer 2014.*



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### Exhibit B – Proposed Action from the Environmental Assessment.

Proposed actions are intended to 1) improve resource conditions in reaches with poor stream health, 2) reduce inputs of sediment from eroding hillslopes and streambanks, and 3) reduce stream temperatures. Restoration actions are proposed for a 0.61-mile reach of a 2.1-mile project area (Figures 1 and 2) and consist of the following key elements:

- Lower reach - redirect the stream channel away from eroding hillslopes through channel relocation and/or floodplain development against the hillslope.
- Upper reach - construct a floodplain within the existing channel, reconnect old channel meanders, and/or create a new, stable stream and floodplain at the same or slightly higher elevation with the appropriate entrenchment ratio and riparian vegetation community.
- Aggressively re-vegetate disturbed soils with appropriate species to insure channel stability and minimize colonization by invasive species.
- Monitor channel stability and riparian vegetation to determine restoration success.

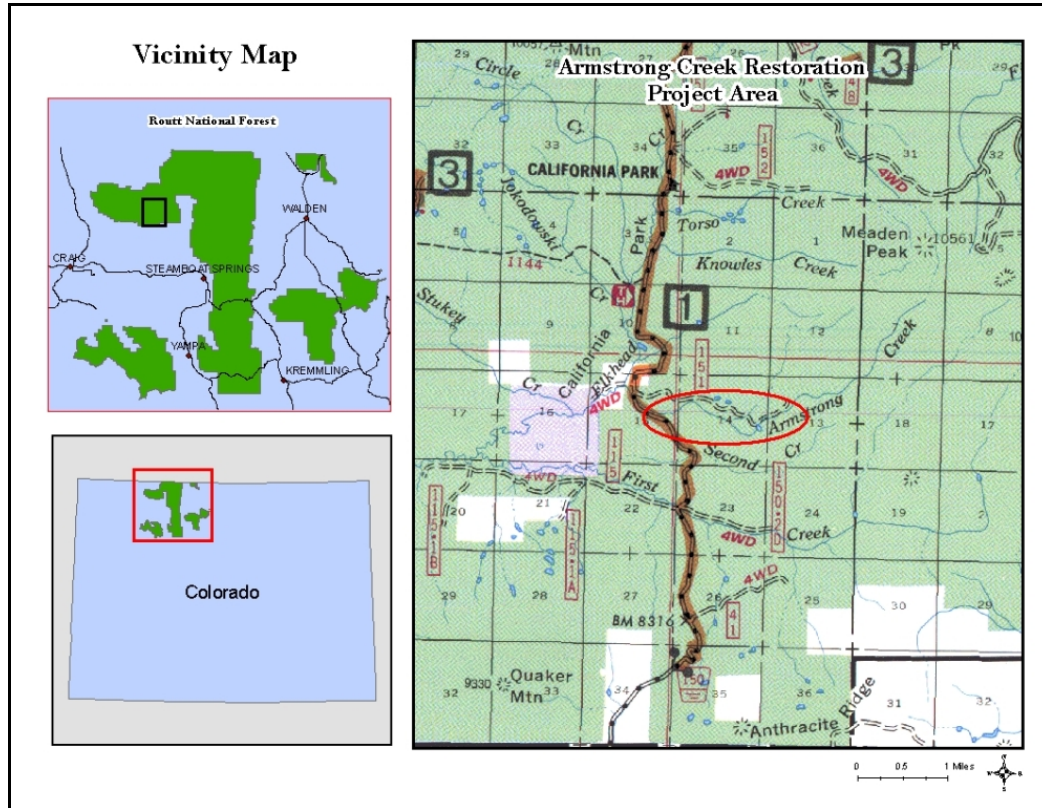


Figure 1. Site Map for the Armstrong Creek Restoration Project.

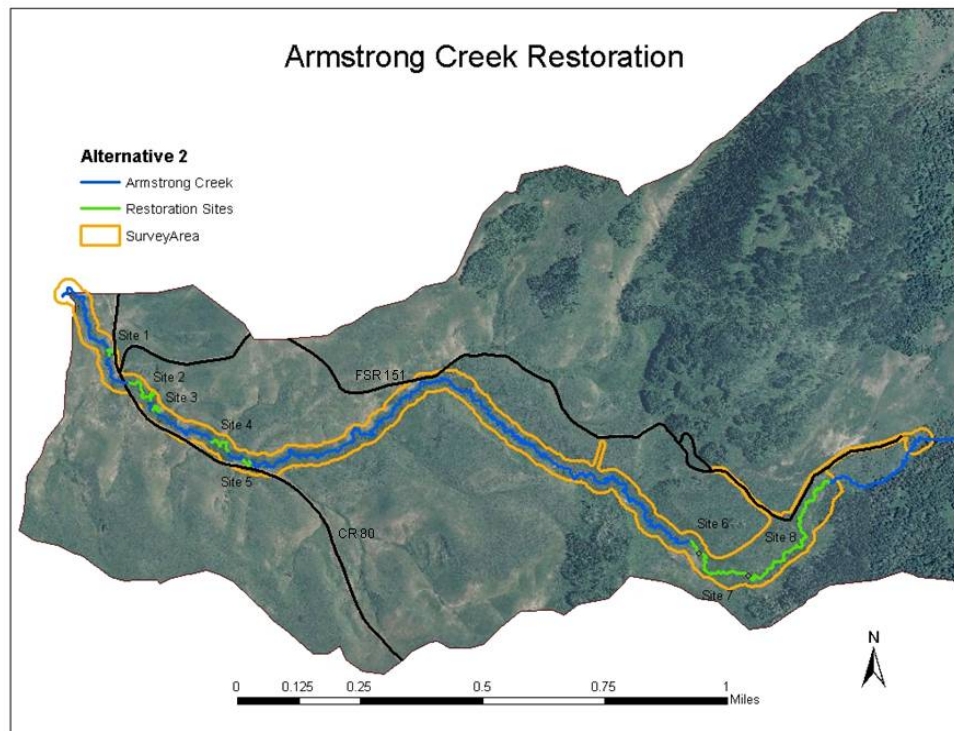


Figure 2: Map of restoration sites along Armstrong Creek.

### *Description of Restoration Actions*

#### *Lower Reach:*

The lower reach is 0.75 miles in length and includes three proposed restoration locations (sites 2 to 4) comprising a total of 0.23 miles of stream. This reach is generally characterized by healthy riparian vegetation, access to the floodplain during bankfull flows, and robust stream health. Conversely, the width of the riparian area is restricted by CR 80 near the road crossing, summer water temperatures are near the upper limit for native aquatic organisms, and the stream flows along numerous hillslopes resulting in sediment input. To remove the stream from eroding hillslopes, we will relocate the channel or develop a hardended floodplain. (Table 1; Figure 3).

#### Restoration will:

- Relocate the stream channel away from eroding hillslopes to reduce sedimentation.
- Construct a stable, vegetated floodplain against eroding hillslopes to filter sediment coming off of hillslopes.
- Create wetland/riparian habitat in the original channel.

The new channel will be designed with the appropriate dimension, pattern, and profile based on reference reach data and recommendation in the literature. Construction will occur within or immediately adjacent to the existing floodplain. Logs, rootwads, and/or rock may be used during construction to armor critical locations against erosion. Vegetation mats, soil, and streambed material removed during excavation will be used to fill in the existing channel, stabilize the toe of eroding hillslopes, and revegetate disturbed areas. The existing stream channel will be converted to riparian/wetland habitat. An excavator and loader will be used for construction.

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Table1. Description of restoration need and proposed actions for each site.

Reach	Site	Location by River Mile (RM)	Length (Feet)	Restoration Need/Actions
<b>Lower Reach</b>	Site 1 (completed 2012)	RM 0.2	150	At this location a stream meander was eroding into the road prism (CR 80) resulting in sediment input and threatening the integrity of road. The stream channel was moved away from the hillslope and a floodplain was constructed between the channel and hillslope.
	Site 2	RM 0.35 to RM 0.45	600	The hillslope on the North side of the stream is highly mobile resulting in small annual inputs and large periodic inputs of sediment into the stream. A new stream channel will be constructed through the existing floodplain opposite the eroding hillslopes.
	Site 3	RM 0.5	225	At this location there are two meanders where the stream is adjacent to eroding hillslopes. The stream channel will be moved away from the hillslope and a floodplain constructed between the channel and the hillslope.
	Site 4	RM 0.65	375	At this location there are three meanders where the stream is adjacent to eroding hillslopes. A combination of constructing a new stream channel and building a floodplain against the hillslope will occur.
	Site 5 (completed 2012)	RM 0.75	225	At this location a stream meander was eroding into the road prism (CR 80) resulting in sediment input and threatening the integrity of road. The stream channel was be moved away from the hillslope and a floodplain was constructed between the channel and the hillslope.
<b>Upper Reach</b>	Site 6	RM 1.70	150	At this location the stream is incised, streambanks are partially stable and a narrow floodplain has developed in some locations. Restoration actions will be conducted at specific locations within the site and would focus on widening the floodplain and moving the channel away from the hillslopes.
	Site 7	RM 1.8 to RM 1.9	900	At this location the stream has incised from 3 to 6 feet. There is no access to the floodplain and streambanks are bare, vertical and actively eroding. Restoration actions within the 300 yard long site

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				will consist of a combination of constructing a floodplain within the existing channel, reconnecting old channel meanders, and/or creating a new, stable stream and floodplain at the same or slightly higher elevation.
	Site 8	RM 1.9 to RM 2.1	600	At this location the stream is incised, streambanks are partially stable and a narrow floodplain has developed in some locations. Restoration actions will be conducted at specific locations within the site and would focus on widening the floodplain and moving the channel away from the hillslopes.



Figure 3: Site 2, where restoration actions will construct a new stream channel away from the eroding hillslope (where flooding is occurring on the left side).

### *Upper Reach:*

The upper reach is 0.63 miles in length and is characterized as At Risk or of Diminished stream health due to channel incision (three to six feet), little to no access to a floodplain, extensive streambank erosion, poor fish habitat, few riparian shrubs, and movement of upland vegetation into the historic floodplain. These conditions are most pronounced in a 900 foot long site near the middle/downstream end of the reach (Figure 4).

Restoration actions within the 900 foot long site will consist of a combination of constructing a floodplain within the existing channel, reconnecting old channel meanders, and/or creating a new, stable stream and floodplain



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(Figure 5). These activities will occur at the same or slightly higher streambed elevation with the appropriate channel dimensions (Table 1).

Restoration will:

- Restore a healthy riparian community within the new and historic floodplain.
- Increase floodprone area both to better accommodate flood flows and to reduce streambank erosion.
- Increase streambank stability from less than 10% to greater than 80%.
- Decrease average channel slope from 3.1 % to less than 2.7% which reduces the energy available for streambank erosion.
- Where old channel meanders are reconnected, create wetland/riparian habitat in the abandoned channel.



Figure 4: Photo of Site 7, showing channel incision, unstable streambanks, lack of a floodplain, and lack of riparian vegetation. Restoration actions will include a combination of constructing a floodplain within the existing channel and constructing a new stream channel at a similar elevation.

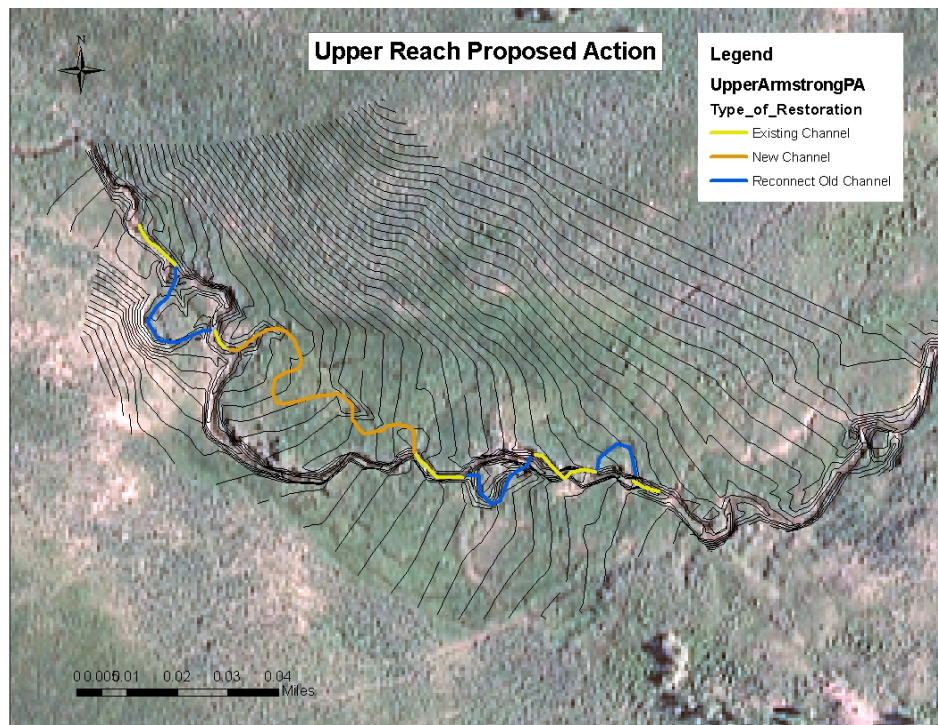


Figure 5: Map of proposed actions for Alternative 2 in the upper reach. Channel locations are approximate and may change with the final design.

Restoration actions elsewhere in the upper reach will focus on widening the floodplain in incised, but more stable locations and moving the channel away from eroding banks (similar to actions in the lower reach). These actions will occur at specific locations where restoration actions can occur without destabilizing existing streambanks. Small check dams or other grade control structures may be installed to match the channel elevation in the newly constructed channel in the degraded reach.

A new channel will be designed with the appropriate dimension, pattern, and profile based on reference reach data and recommendations in the literature to fit the valley gradient and width. Vegetation mats, soil, and streambed material removed during excavation would be used to fill in the existing channel, stabilize the toe of eroding hillslopes, and re-vegetate disturbed areas. Logs, rootwads, and/or rock may be used during construction to armor critical locations from erosion. An excavator and loader will be used for construction.

### ***Bioengineering***

Bioengineering refers to the integration of living woody and herbaceous materials with organic and inorganic materials to increase the strength and structure of the soil and in this project would be applied to streambank stabilization. Increased soil strength, soil structure, and bank stabilization is accomplished by establishing a dense matrix of roots and vegetation that hold the soil together, increasing resistance to flow, reducing flow velocities by dissipating energy and allowing sediment deposition due to low shear stress near the bank.

Bioengineering techniques include: brush layering, brush mattresses, brush or tree revetments, brush trenches, erosion control fabric, pole plantings, post planting, vertical willow bundles, willow wattles (or fascines) and vegetation plug plantings. Most of these techniques use dormant woody native species that develop roots and shoots to achieve the stabilization objectives. This project will apply a range of bioengineering techniques based on site-by-site needs.

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### ***Revegetation***

Past experience in the project area suggests that revegetation can be difficult due to soil properties and grazing by livestock and elk. Therefore, increased attention will be given to revegetation, which will include a combination of the following techniques:

1. Riparian vegetation and grass mats removed during channel excavation will be used to stabilize the new streambanks and revegetate the old channel or other disturbed areas.
2. Sedge, willow, and alder will be used to further revegetate disturbed areas. These plants will either be propagated in a nursery or collected nearby.

### ***Fencing***

Fencing will be constructed and maintained around all restoration sites until disturbed areas have been successfully re-vegetated and stabilized. At a minimum, fencing will be used while elk and livestock are present (May to October). If necessary, other types and/or operational periods of fencing will be implemented to protect restoration areas during recovery.

Two additional sections will be fenced from July to October. The fencing will exclude livestock from riparian areas to promote riparian shrub growth and streambank stabilization. The first section will extend from the lower reach upstream 0.5 miles. The second section will extend from the upper reach downstream 0.5 miles. Gaps in the fencing will exist to allow for livestock movement. The effectiveness and need for these fences will be evaluated as warranted.

### ***Staging Areas and Transportation***

Sites 2 - 4 are adjacent to CR 80 and will be accessed from the road. Staging will occur adjacent to the road at existing compacted areas. All supplies for the project (logs, rootwads, rock, etc.) will be moved to the worksites with an excavator or loader. The staging area for the upper reach will be at the end of NFSR 151 and is approximately 900 feet from Sites 6 to 8. Equipment will access the sites along the decommissioned portion of FSR 151 or along a 50 foot wide overland corridor to Site 6. No temporary or permanent roads will be constructed and all disturbed soils along the access routes will be reclaimed if necessary. Temporary delays on CR 80 are anticipated.

### ***Monitoring***

Monitoring will focus on evaluating the effectiveness of restoration actions as measured by:

- Stability of the new channel, channel-bed, and structures.
- Amount of erosion from disturbed sites and success of revegetation.
- Physical and biological integrity including stream channel dimensions, temperature, riparian vegetation, fish, and aquatic invertebrates.

Results will inform managers as to which restoration techniques are most effective and efficient in producing desired effects, and will thereby guide future efforts within the watershed.

### ***Information and Education***

A public information and education component will be integrated into the project. Precautionary signage will be placed along CR 80 during construction to inform the public of activities and restrictions. Staging areas along CR 80 and temporary closures will be coordinated with Routt County. Permanent, educational signage regarding the project and other educational information related to California Park is currently being discussed.

## **The Yampa, White, Green Basin Roundtable**

**C/O 221 West Victory Way, Suite 120**

**Craig, CO 81625**

January 23, 2013

Greg Johnston  
Colorado Water Conservation Board  
1580 Logan Street, Suite 600  
Denver, CO 80203

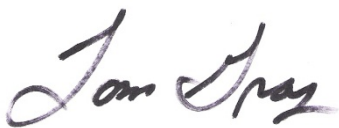
Dear Greg:

The Yampa, White, Green Basin Roundtable voted 12-3 at its January 16, 2013 meeting to approve one grant request and forward it to the CWCB staff and board for consideration for Water Supply Reserve Account potential funding. The dissenting three votes are opposed to using state funding to finance projects on federal lands. The project is located in the headwaters of the Elkhead Creek sub-basin on the USFS area of special interest referred to as "California Park."

The request is from the Routt County Conservation District for \$15,000 in Basin Funds and \$35,000 in Statewide funds for the Armstrong Creek Restoration Project in Routt County. The project itself is non-consumptive in that it will restore habitat and improve resource conditions, but reduction of sediment resulting from these practices will have a consumptive benefit for Elkhead Reservoir, which is a major water supply for the City of Craig. The project meets the Basin's Phase I Non-Consumptive Needs Assessment for protection and habitat improvement of the Colorado River cutthroat trout population in this priority area. Furthermore, the 2010 SWSI recommendations cite the importance of multi-use (consumptive and non-consumptive) projects.

The requested funding from the Statewide account will be used on the upper reach of Armstrong Creek to design and construct a floodplain within the existing channel, reconnect old channel meanders, and create a new, stable stream and floodplain at the same or slightly higher elevation with the appropriate entrenchment ratio and riparian vegetation community.

Sincerely,

A handwritten signature in dark ink, appearing to read "Tom Gray", with a stylized, cursive script.

Tom Gray  
Chair, Yampa, White, Green Basin Roundtable