**Water Supply Reserve Account – Grant and Loan Program**
**Water Activity Summary Sheet**
**March 16-17, 2016**
**Agenda Item 14(j)**

| | |
|---|---|
| **Co-Applicants:** | Trout Unlimited / American Rivers |
| **Fiscal Agent:** | Trout Unlimited |
| **Water Activity Name:** | Irrigators of Lands in the Vicinity of Kremmling (ILVK) - Upper Colorado River Irrigation and Restoration Project - 2016 |
| **Water Activity Purpose:** | Multipurpose |
| **County:** | Grand |
| **Drainage Basin:** | Colorado |
| **Water Source:** | Colorado River |
| **Amount Requested/Source of Funds:** | $50,000 Colorado Basin Account<br>$415,400 Statewide Account<br>$465,400 Total Grant Request |
| **Matching Funds:** | Basin Account Match ($50,000) = 10.7% of total grant request (meets 5% min);<br>Applicant/3rd Party Match ($465,400) = 50% of total project costs ($930,800)<br>Basin Account & Applicant Match ($495,400) = 106% of total grant request<br>(refer to *Funding Summary/Matching Funds* section) |

| **Staff Recommendation:** |
|---|
| Staff recommends approval of up to $50,000 from the Colorado Basin Account; and $415,400 from the Statewide Account to help fund the project titled: Irrigators of Lands in the Vicinity of Kremmling (ILVK) Upper Colorado River Irrigation and Restoration Project – 2016. |

**Water Activity Summary:** WSRA funds, if approved, will be expended to fund the project titled: Irrigators of Lands in the Vicinity of Kremmling (ILVK) Upper Colorado River Irrigation and Restoration Project – 2016. The ILVK Project seeks to restore aquatic habitat and improve irrigation systems along 12 miles of the Colorado River in Grand County, Colorado.

This application seeks funds for the first phase in a long-term, regional effort to restore segments of the Colorado River and agricultural operations impacted by trans-mountain diversions. With support from an array of partners, the goals of the ILVK Project are to implement specific on-the-ground measures that address both irrigation and aquatic habitat issues and demonstrate that a healthy river is capable of providing multiple benefits to sustain agricultural irrigation, aquatic and wildlife habitat, and recreation.

This phase of the project, which is expected to be completed in 2016, follows the original ILVK Upper Colorado River Irrigation and Restoration Assessment Phase 1. The Project 2016 list is based on priority within the ILVK reach.

Funding for 2016 work includes the following:

- Topographic Survey of the river corridor through the entire ILVK project reach
- Yust Family Blue River Assessment (Loback Ditch to Colorado River confluence)
- Blue River irrigation infrastructure emergency repair
- Final engineering design and construction of the Grade Control Riffle to stop head-cut, stabilize river elevations for the McElroy pump systems, and improve aquatic habitat just above the confluence of the Blue and Colorado Rivers
- Bank stabilization and 400 LF new pipe line for ditch system for water delivery out of the Orr #2 irrigation pump
- Engineering, bank stabilization and 1800 LF new pipeline for ditch system for water delivery out of the KB Ditch System
- Engineering, bank stabilization, and habitat improvements on the Petersen Ranch; it includes 3 specific locations where ditch infrastructure is jeopardized based on bank erosion and a habitat project that targets a wide portion of the river to a low flow channel by the construction of a point bar riffle
- Final design engineering, bank stabilization, and habitat improvements on the Bruchez Ranch; it includes design and construction of 2 riffle veins for habitat, a low flow channel and to direct water velocities away from eroding banks; includes design and construction of 1540 LF of bank stabilization using a variety of techniques to study and monitor for progression of ILVK project.

**Discussion:** This project serves multiple purposes and uses, and aligns with Themes 1 and 2 of the Colorado River Basin Implementation Plan: to "protect and restore healthy streams, rivers, lakes, and riparian areas" and to "sustain agriculture." The ILVK Upper Colorado River Irrigation and Restoration Project is also listed as one of Grand County Region's top 4 priority projects in the Colorado Basin Implementation Plan.

This project also aligns with several of the critical actions identified in Colorado's Water Plan.

***D3:*** **"**Provide grants, loans, and technical support to update and improve Colorado's aging agricultural infrastructure, especially where improvements provide multiple benefits."

**Previous Funding:** The proposed activity can be considered a continuation of the applicant's efforts begun in 2013 with a WSRA Colorado Basin Account grant of $50,000 approved by CWCB in September 2013, of which the applicant completed successfully.

**Issues/Additional Needs:**

- The applicant should provide staff with a detailed monitoring plan that describes geomorphic and vegetative monitoring methodologies.
- The monitoring plan should conform to the CWCB Measurable Results Program's Standard Operating Procedures for Topographic Survey of Stream Channels. http://cwcb.state.co.us/environment/watershed-protection-restoration/Documents/Survey_SOP_CWCB.pdf

**Threshold and Evaluation Criteria:**
The application meets all four Threshold Criteria.

**Tier 1-3 Evaluation Criteria:**
This activity has under gone review and evaluation and staff has determined that it satisfies the Evaluation Criteria. Please refer to WSRA Application for applicant's detailed response.
**Funding Summary/Matching Funds:**

| Funding Source | Cash | In-kind | Total |
|---|---|---|---|
| ILVK Cash Funds | $465,400 | $0 | $465,400 |
| WSRA Colorado Basin Account | $50,000 | n/a | $50,000 |
| WSRA Statewide Account | $415,400 | n/a | $415,400 |
| **Total Project Costs** | **$930,800** | **$0** | **$930,800** |

**CWCB Project Manager:** Chris Sturm

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 will help promote the development of a common technical platform. In accordance with the revised WSRA Criteria and Guidelines, staff would like to highlight additional reporting and final deliverable requirements. The specific requirements are provided below.

**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 scope 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.

**Engineering:** All engineering work (as defined in the Engineers Practice Act (§12-25-102(10) C.R.S.)) performed under this grant shall be performed by or under the responsible charge of professional engineer licensed by the State of Colorado to practice Engineering.

# *THE COLORADO BASIN ROUNDTABLE*

***C/O P.O. BOX 1120***
***GLENWOOD SPRINGS, COLORADO***
***81602***

Nov. 30, 2015

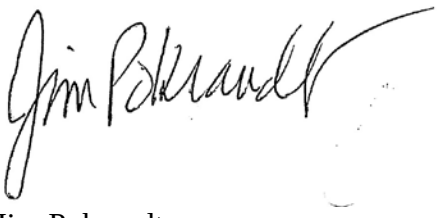
**Craig Godbout**
**Colorado Water Conservation Board**
**Water Supply Planning Section**
1313 Sherman Street
(303) 866-3441, ext 3210 (office)
(970) 218-9407 (cell)
craig.godbout@state.co.us

Dear Craig:

The Colorado Basin Roundtable voted unanimously on Nov. 30, 2015 by email balloting to support the Irrigators of Lands in the Vicinity of Kremmling Upper Colorado River Irrigation and Restoration Project. The amounts are $415,400 from the Statewide Account and $50,000 from the CBRT Basin Account. Fiscal agents are Trout Unlimited and American Rivers.

This project advances priorities in our Basin Implementation Plan. To wit, it will address agricultural sustainability while creating environmental and recreational benefits. The project will create irrigation intake structures to get water to irrigation pumps by techniques that will address channel head-cutting, bank erosion and channel aggradation. This reach of the Colorado River is heavily impacted by transmountain diversions that changed historical irrigation practices. Methods employed to get water to irrigation pumps have had unintended negative consequences to the river corridor.

This project is listed in the BIP as one of four priorities for the Grand County Region.



Jim Pokrandt
Chair, Colorado Basin Roundtable

# COLORADO WATER CONSERVATION BOARD

## WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

**Today's Date:** **October 25, 2015**

Irrigators of Lands in the Vicinity of Kremmling (ILVK) Upper Colorado River Irrigation and Restoration Project – 2016

**Name of Water Activity/Project**

Trout Unlimited, American Rivers

**Name of Applicant**

Colorado River Basin Roundtable

**Amount from Statewide Account:** $ 415,400

**Amount from Basin Account(s):** $ 50,000

**Total WSRA Funds Requested:** $ 465,400

**Approving Basin Roundtable(s)**
*(If multiple basins specify amounts in parentheses.)*

**FEIN:**

## Application Content


| | |
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| Part I – Description of the Applicant | page 3 |
| Part II – Description of the Water Activity | page 5 |
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| Water Rights, Availability, and Sustainability | page 10 |
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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)

## 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 (CWCB). 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 CWCB 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 CWCB 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. In addition, the applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests .

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:

Craig Godbout - WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
Craig.godbout@state.co.us

If you have questions or need additional assistance, please contact Craig Godbout at: 303-866-3441 x3210 or craig.godbout@state.co.us.

**Water Supply Reserve Account – Application Form**
**Revised October 2013**

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

| | | | | |
|---|---|---|---|---|
| 1. | Applicant Name(s): | Trout Unlimited<br>American Rivers | | |
| | Mailing address: | Trout Unlimited: P.O. Box 1544, Pagosa Springs, Colorado 81147<br>American Rivers: 24 S. Meadow View Ct., Glenwood Springs, CO 81601 | | |
| | FEIN #: | | | |
| | **Primary Contact**: | Mely Whiting | Position/Title: | Legal Counsel, Colorado Water Project |
| | Email: | mwhiting@tu.org | | |
| | Phone Numbers: | Cell: 720-470-4758 | Office: | Same |
| | **Alternate Contact**: | Paul Bruchez | Position/Title: | ILVK Project Coordinator |
| | Email: | reedercreekranch@gmail.com | | |
| | Phone Numbers: | Cell: 970-531-2008 | Office: | 970-725-3568 |

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. |
| X | Non-governmental organizations – broadly defined as any organization that is not part of the government. |

3. Provide a brief description of your organization:

*Trout Unlimited:* Trout Unlimited is a national, non-profit organization with over 150,000 members nation-wide, approximately 12,000 members in Colorado. Our volunteers and staff engage in partnerships and stakeholder driven efforts with the goal of conserving, protecting, and restoring cold water fisheries and their habitat in a cooperative, constructive setting.

*American Rivers:* Is the nation's largest river conservation organization with Colorado offices in Denver and Glenwood Springs. AR works with local, state and regional stakeholders to create policies and projects that will restore and protect the rivers of the Colorado River basin and the communities and economies that depend on them.

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

Contracting entity will be Trout Unlimited and/or American Rivers

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.

[X] 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.

Applicants are non-governmental organizations not subject to TABOR.

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

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

| | |
|---|---|
| X | Nonconsumptive (Environmental or Recreational) |
| X | Agricultural |
| | Municipal/Industrial |
| | Needs Assessment |
| | Education |
| | Other Explain: |

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

The Project will create structures that will improve both irrigation and riparian/aquatic habitat. The ranchers have been experiencing issues with the elevation of the intakes and pump operations. Throughout this reach of the Colorado River there is evidence of channel head-cutting, bank erosion, and channel aggradation. Historically this reach of river has experienced significant hydro-modifications in the way of trans-basin diversions, in-channel and off-channel dams, channelization, and the loss of riparian vegetation. The issues with the elevations of the pump intakes are directly related to the historic hydro-modification of the Colorado River and its associated geomorphic response. The solution(s) to the irrigation problems need(s) to work within the overall river system to be sustainable, cost effective and reduce long-term operations and maintenance. A systems-based approach to resolving the irrigation issues will directly impact other functions of the river such as flood conveyance, riparian and aquatic habitat, and sediment transport.

This project is listed in the Colorado River Basin Roundtable's Implementation Plan (BIP) and was one of four priority projects for the Grand County Region. This project ranks high because it addresses all six of the Roundtable's BIP themes, primarily Themes 1 and 2.

Theme 1 - Protect and Restore Healthy Streams, Rivers, Lakes and Riparian Areas
Theme 2 - Sustain Agriculture
Theme 3 - Secure Safe Drinking Water
Theme 4 - Develop Local Water Conscious Land Use Strategies
Theme 5 - Assure Dependable Basin Administration
Theme 6 - Encourage a High Level of Basinwide Conservation

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

| | | | |
|---|---|---|---|
| | Study | X | 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) |
| 63,360 | Length of Stream Restored or Protected (linear feet) |
| 2,200 | 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: |

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

Latitude: 40°2’55.19” Longitude: 106°19’40.30”W

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.

The ILVK Project seeks to restore aquatic habitat and improve irrigation systems along 12 miles of the Colorado River in Grand County, Colorado. Several trans-mountain diversions divert over 60 percent of the Colorado River’s native flows upstream of the project area across the Continental Divide for use in the Front Range and Northern Colorado. These projects have had a major effect on the stability and health of irrigation systems and the Colorado River in the project area. Low river flows, which are caused by the trans-mountain diversions, have made it difficult for irrigators to divert water; particularly during drought. Reduced river flows have also reduced the river’s ability to transport sediment, making the river prone to aggradation and eliminating aquatic habitat. Other problems include increased stream temperatures and degraded riparian habitat.

This application seeks funds for the first phase in a long-term, regional effort to restore segments of the Colorado River and agricultural operations impacted by trans-mountain diversions. With support from an array of partners, the goals of the ILVK Project are to implement specific on-the-ground measures that address both irrigation and aquatic habitat issues and demonstrate that a healthy river is capable of providing multiple benefits to sustain agricultural irrigation, aquatic and wildlife habitat, and recreation.

This phase of the project, which is expected to be completed in 2016, follows the original ILVK Upper Colorado River Irrigation and Restoration Assessment Phase 1. The Project 2016 list is based on priority within the ILVK reach.

Funding for 2016 work includes the following:

- Topographic Survey of the river corridor through the entire ILVK project reach
- Yust Family Blue River Assessment (Loback Ditch to Colorado River confluence)
- Blue River irrigation infrastructure emergency repair
- Final engineering design and construction of the Grade Control Riffle to stop head-cut, stabilize river elevations for the McElroy pump systems, and improve aquatic habitat just above the confluence of the Blue and Colorado Rivers
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- Final design engineering, bank stabilization, and habitat improvements on the Bruchez Ranch; it includes design and construction of 2 riffle veins for habitat, a low flow channel and to direct water

velocities away from eroding banks; includes design and construction of 1540 LF of bank stabilization using a variety of techniques to study and monitor for progression of ILVK project.

See Exhibit A for a full Statement of Work, including a detailed budget and schedule.

**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.[1]

   The Project is consistent with the statute in that it will not supersede, abrogate or otherwise impair the system of allocating water in the State.

   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 BRTs 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 Roundtable Chair

   c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] The Basin

[1] 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, 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.

[2] 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

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 is a multi-purpose project that will further the BRT's goals. It primarily addresses Themes 1 and 2 of the Colorado Basin Roundtable BIP, to "protect and restore healthy streams, rivers, lakes and riparian areas" and to "sustain agriculture." It also has an impact on the other four Themes.

d) Matching Requirement: For requests from the **Statewide Fund**, the applicants will be required to demonstrate a **25 percent** (or greater) match of the total grant request from the other sources, including by not limited to Basin Funds. A minimum match of 5% of the total grant amount shall be from Basin funds. A minimum match of 5% of the total grant amount must come from the applicant or 3rd party sources. 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 contract or purchase order between the applicant and the State of Colorado is executed. 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)

Applicants anticipate a 50% match ($465,400 total) from individual ILVK Project participants. A detailed budget is attached as Exhibit A and shows all expected matching sources of funds.

2. 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. The applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests. 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

a. 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).

Charter.

The Project addresses two high priority areas identified by the CBRT: agriculture and environmental/recreational use. The structures to be constructed will improve irrigation diversions while at the same time creating aquatic habitat and restoring riparian health. Please see Scope of Work (Exhibit A) for more detail on the specific features of the Project.

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.

The application represents a joint effort of irrigators and conservation and angler organizations. The Project uses techniques designed to promote both agricultural and environmental/recreation interests. The Project will enable continued use of decreed water rights, of which approximately 70% are pre-Compact irrigation water rights. See description of water rights in Part IV, section 1.

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 ILVK Upper Colorado River Irrigation and Restoration Project is listed as one of Grand County Region's top 4 priority projects in the Colorado Basin Implementation Plan.

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).

Approximately 50 % of the cost of the Project is expected to be borne by individual irrigators participating in the ILVK Project. Applicants are non-profit, non-taxing entities which offer in-kind contributions but cannot finance the remainder of the project. ILVK Project participants do not have enough funding to address all repair work. Without grant assistance, the project would temporarily address the irrigation abilities of the ranchers. With a cost share partner, the funds will stretch to both sustain agriculture and address environmental concerns of the river. See Exhibit A for a budget description, including sources of funding.

e. 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.

Please see Exhibit A.

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

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

By improving irrigation diversions and bank stability, the Project will help sustain agricultural activity and open space in the area. By improving aquatic habitat and reducing excessive bank erosion, the project will help meet environmental and recreational needs identified by the CBRT.

g. 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.

By improving irrigation diversions and bank stability, the Project will facilitate the exercise of decreed pre-Compact water rights. See description of water rights in Part IV, section 1.

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

The Project will benefit historic ranchlands identified by Colorado Parks & Wildlife as critical habitat for the greater sage-grouse and for a diversity of species.

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

The Project will restore a reach of the Colorado River that has been severely impacted by transmountain diversions. With other restoration and protection efforts occurring upstream (Windy Gap Reservoir bypass and stream restoration upstream of the confluence with Williams Fork) and downstream (Upper Colorado River Wild & Scenic Stakeholder Group Plan), the ILVK Project, when completed, will restore approximately 12 miles of the Colorado River connecting upstream and downstream efforts. The benefits to the Colorado River will be extensive and 50% of the cost will be borne by private parties.

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

$2 million have been approved as part of the CWCB Construction Fund to restore approximately one mile of the Colorado River currently inundated by Windy Gap Reservoir (the Windy Gap Reservoir Bypass). The project subject to this application will restore riparian habitat downstream of Windy Gap Reservoir, expanding the benefits of the proposed Bypass down to Kremmling and below.

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

## Part IV. – Required Supporting Material

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.

The Project will occur primarily in the Colorado River with a portion occurring in the Blue River and will directly address the impacts transmountain diversions have had on the following irrigation rights:

**Water Rights Owned by Applicants**

| *Water Right Name* | *DIV* | *WD* | *ID* | *Admin No* | *Decreed Ammount [cfs]* | *Appropriation Date* |
|---|---|---|---|---|---|---|
| McElroy No 1 Ditch | 5 | 50 | 612 | 32335.11971 | 12 | October 10, 1882 |
| McElroy No 2 Ditch | 5 | 50 | 613 | 32335.11677 | 11 | December 20, 1881 |
| | 5 | 50 | 613 | 32335.11677 | 1 | December 20, 1881 |
| TA Engle Ditch No 1 | 5 | 51 | 925 | 34241.18263 | 10 | January 1, 1900 |
| TA Engle Ditch No 2 | 5 | 51 | 926 | 34241.18263 | 2 | January 1, 1990 |
| TA Engle Ditch No 3 | 5 | 51 | 651 | 34241.18263 | 4 | January 1, 1990 |
| Thompson Pump No 1 | 5 | 51 | 1148 | 34241.18263 | 13.84 | January 1, 1990 |
| McElroy State Pump No. 1 | 5 | 50 | 755 | 39095.18414 | 8 | June 1, 1900 |
| Ennis Pump Ditch System | 5 | 50 | 566 | 34762.18414 | 8 | June 1, 1900 |
| Holdcroft Pump No. 1 (A.K.A. Orr No. 1) | 5 | 51 | 1274 | 33063.12023 | 24 | December 1, 1882 |
| | 5 | 51 | 1274 | 34241.18263 | 4 | January 1, 1900 |
| | 5 | 51 | 1274 | 46020.40907 | 10 | December 31,1961 |
| Holdcroft Pump No. 2 (A.K.A. Orr No. 2) | 5 | 51 | 1275 | 33063.12023 | 24 | December 1, 1882 |
| | 5 | 51 | 1275 | 34241.18263 | 4 | January 1, 1900 |
| | 5 | 51 | 1275 | 46020.40907 | 10 | December 31,1961 |
| Kinney Barriger Ditch (Partially owned by applicants) | 5 | 51 | 763 | 20676.13818 | 11 | December 1, 1882 |
| | 5 | 51 | 763 | 33063.12023 | 24 | January 1, 1900 |
| | 5 | 51 | 763 | 33433.33151 | 10 | January 1, 1900 |
| | 5 | 51 | 763 | 34241.18263 | 2 | January 1, 1900 |
| | 5 | 51 | 763 | 34241.18263 | 18 | January 1, 1900 |
| Loback Ditch | 5 | 36 | 709 | 30184.29584 | 18.33 | August 22, 1932 |
| | 5 | 36 | 709 | 32075.11444 | 3 | May 1, 1881 |
| | 5 | 36 | 709 | 32075.18262 | 17.85 | December 31, 1899 |
| | 5 | 36 | 709 | 45290.45144 | 36.62 | August 7, 1973 |

**Other Water Rights potentially benefiting from Project**

| *Water Right Name* | *DIV* | *WD* | *ID* | *Admin No* | *Decreed Ammount [cfs]* | *Appropriation Date* |
|---|---|---|---|---|---|---|
| Thompson Pump No 2 (BLM) | 5 | 51 | 1149 | 34241.18263 | 13.84 | January 1, 1990 |

The Project will have no negative impacts on water rights.

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

The Project is part of the larger ILVK Project which will apply similar techniques to improve irrigation and aquatic habitat in a total of 12 miles of the Colorado River. With the assistance of funds from the CBRT, a 30% design for the ILVK Project was completed earlier this year.

*Colorado River Aquatic Resources Investigations Federal Aid Project F-237R-18, Nehring, R. Berry, Heinold, B., and Pomeranz, J., Colorado Division of Wildlife, Aquatic Wildlife Research Section, June 2011.* This detailed report presents the results of an investigation into the relative abundance and distribution of aquatic invertebrate fauna, and the mottled sculpin of the upper Colorado River between the confluence with the Blue River and Windy Gap Dam west of Granby, Colorado. The study shows that the health of the river has been severely degraded and identifies critical issues that need to be address to reverse the trend of degradation, including A bypass channel around Windy Gap Dam and a major investment in stream channel reconfiguration for the Colorado River below WGD. Much of the proposed work is expected to either be

exempted from 404 permit requirements or subject to nationwide or regional permits. No significant permitting issues are expected.

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 see Exhibit A.

## REPORTING AND FINAL DELIVERABLE

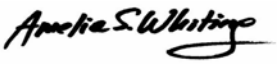
Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that 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

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 10 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.

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

**Signature of Applicant**: 
**Print Applicant's Name**: Mely Whiting, Trout Unlimited
**Project Title**: ILVK Project – Phase I
**Date**: October 30, 2015

**Signature of Applicant**: 
**Print Applicant's Name**: Matt Rice, American Rivers
**Project Title**: ILVK Project – Phase I
**Date**: October 30, 2015

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

Craig Godbout – WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
303-866-3441, ext. 3210 (office)
303-547-8061 (cell)
craig.godbout@state.co.us

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

**WATER ACTIVITY NAME:** ILVK 2016 River Restoration Projects

**GRANT RECIPIENT:** Trout Unlimited and/or American Rivers

**FUNDING SOURCE:** Colorado River Basin Roundtable and Statewide Account

## INTRODUCTION AND BACKGROUND

Transbasin diversions have impacted this reach of the Colorado River for over 100 years. Senate Document 80, which authorized the Colorado-Big Thompson project in 1937, included a requirement that an "adequate system as determined by the Secretary of the Interior * * * shall be provided for the irrigation of the lands in the vicinity of Kremmling, now irrigated by either natural or artificial means, and the installation made therefor shall be a part of this project. The rights to the use of water for the irrigation of these lands shall be considered to have a date of priority earlier than that of the rights to the use of water to be diverted through the works of this project to the Eastern Slope." This was in response to concerns voiced by Grand County irrigators that low water flows, which are caused by trans-mountain water diversions, create a lack of positive pressure in ditch heads and natural flood irrigation making the irrigation systems harder and more labor intensive. Senate Document 80 resulted in the installation of a number of irrigation pumps. Over the decades these pumps have become crucial to the success of ranching along this reach of the Colorado River despite continued operational issues. After years of negotiation with Northern Colorado Water Conservancy District, the Ranchers have reached a settlement regarding the continued operation and maintenance of the Senate Document 80 irrigation pumps in which the Ranchers have agreed to own and maintain the pumps. The Settlement will partially fund the river improvements necessary to improve irrigation efficiency.

AECOM developed a recommended stream restoration plan entitled “ILVK Upper Colorado River Irrigation and Restoration Assessment Phase 1: KB Ditch to Blue River” (ILVK Restoration Plan) dated March 2015. This scope of work specifies work for 2016 consistent with the ILVK Restoration Plan. The scope of work also includes 2016 work for similar irrigation and habitat improvement work in the Lower Blue River through the Yust Ranch.

The goals of the proposed 2016 work include:

- Emergency repairs to irrigation infrastructure
- Conduct field work necessary to construct projects
- Conduct engineering and design work necessary to construct projects
- Construction of specific projects
- Monitor and assess effectiveness of implemented construction techniques in an adaptive management (“learning by doing”) setting
- Plan and implement a restoration project in the Lower Blue River

## THE PROEJCT TEAM

**TU/AR Program Manager–Mely Whiting:** Mely Whiting will be the primary contact for purposes of administration of the grant and grant contract. Ms. Whiting is Legal Counsel for Trout Unlimited, Colorado Water Project. She is currently managing grants for various projects both from the CWCB and from other sources, including private foundations.

**AECOM Project Manager-John Sikora:** The project will be led by John Sikora, PE, CFM. Mr. Sikora is the AECOM Glenwood Springs Office Manager and has more than 27 years of experience in water resources design, water rights, and large civil engineering project management. His water resources engineering experience includes the engineering analysis, justification, design, plans and specifications for water related structures. His water rights experience includes administration of water rights, litigation support for the State Engineer's Office, water rights enforcement, augmentation plan accounting. Mr. Sikora will serve as the Principal-in-Charge and project manager.

**AECOM Senior Geomorphologist-Edmund D. Andrews, PhD**: In order to ensure that the project is compatible with the geomorphology of the Colorado River Edmund D. Andrews, PhD will provide technical oversight during the modeling and design tasks. Dr. Andrews was with the U.S. Geological Survey from 1975-2009. From 1980 on he was Chief of the River Mechanics Project, National Research Program, USGS Water Resources Division. He conducted research on river mechanics, especially river channel change in response to variations in flow and sediment supply due to climate change, land use, and water resources development. Dr. Andrews is author of numerous peer-reviewed publications including numerous papers on streams and rivers within the Upper Colorado River Basin. Dr. Andrews' vast research and academic background is complemented by practical, project based experience including serving as the principle river restoration designer for the Provo River Restoration Project located between Jordanelle Dam and Deer Creek Reservoir in central Utah. Dr. Andrews will serve as the lead project geomorphologist, helping to refine the design and providing technical oversight and quality control.

**AECOM Senior Hydraulic Engineer-Frank Lan, PhD:** Dr. Lan will serve as Senior Hydraulic Engineer. Dr. Lan is a principal water resources engineer with more than 20 years of successful experience in the application of surface water and groundwater hydraulic/hydrologic analysis and modeling to the planning and design in various water resources projects for international and domestic clients. His expertise includes multidimensional surface and groundwater flow and solute transport modeling and analysis, hydrologic modeling/analysis, sediment transport and river engineering, hydraulic structure design, dam break analysis, floodplain delineation, mitigation and management, storm water planning and modeling, urban drainage design, alluvial geomorphology, water management modeling, and statistical analysis. Dr. Lan is best known for his extensive experience in applying numerical models to various water resources applications. He is an expert in applying three-dimensional CFD models to solve hydraulic problems in dams and spillways. Dr. Lan will provide technical support and oversight for all hydrologic, hydraulic and sediment transport modeling.

**AECOM Project Team:**

**Principle-In-Charge/Project Manager:** John Sikora, PE, CFM

**Senior Geomorphologist:** Edmond D. Andrews, PhD

**Senior Hydraulic Engineer:** Frank Lan, PhD, PE, CFM

**Water Resource/River Engineer**: Chris Romeyn, PE, CFM

**Cost Estimator:** Roy Watts

**Senior CAD Design:** Randy Lamutt

**CAD Design:** Warren Hofer

**Survey:** Dave Nicewicz

**UAV LiDAR:** Tim Safford, Jon Amdur

**Project Administration:** Marcia Ginther

## TASKS

### Task 1- LiDAR Topo Acquisition of Irrigated Acreage

Description of Task

Existing USGS topographic mapping is approximately 60 vertical feet different than existing topography. Perform LiDAR topographic survey of approximately 7 square mile of irrigated acreage within the 12 mile reach. The LiDAR topographic survey is necessary to evaluate modification to irrigation infrastructure to provide additional stream restoration methods while maintaining irrigated agriculture. The mapping will be used to evaluate creating overbank flows to minimize flood velocity stresses on the channel banks. In addition, the information will be used for base mapping for construction documents.

Method/Procedure

AECOM will either contract to fly the 7 square mile area with conventional plane and LiDAR equipment or use a UAV and LiDAR equipment to fly the area.

Deliverable

AECOM will develop a 1-foot contour map for the approximately 7 square mile irrigated area.

### Task 2- Project Monitoring

Description of Task

2016 monitoring of existing and proposed structures to assess effectiveness of techniques in an adaptive management setting for the purpose of finding the least costly and most effective techniques to implement the restoration plan. Monitoring includes movement survey of structures, ADCP velocity measures near structures and the installation of two vibrating wire piezometers to expand existing coverage. Colorado Parks and Wildlife (CPW) has agreed to perform aquatic surveys to document stream rehabilitation efforts. This task will support CPW with project data requests.

Method/Procedure

AECOM survey crews will perform field survey using Survey Grade RTK GPS equipment to survey installed movement markers on the existing and proposed structures. Velocity measurements will be made at number of cross-section locations using Acoustic Doppler Current Profiler (ADCP). Cost includes rental of ADCP. The costs include the purchase of two vibrating wire piezometers and the installation of the piezometers within the 12 Mile Reach.

Deliverable

AECOM will install the two vibrating wire piezometers, provide a report that will include the results of the survey and the ADCP results.

**Task 3- Yust Lower Blue River Project**

Description of Task

This task will provide engineering drawings for emergency bank stabilization to protect the Loback Ditch. The task will also include a preliminary geomorphic assessment of the stream instability issues the Lower Blue River is experiencing.

This task includes estimated construction costs for the emergency repair.

Method/Procedure

AECOM will survey the near vertical bank instabilities near the Loback Ditch in order to develop plans for the emergency repair. TU/AR will contract with a contractor to perform the emergency irrigation infrastructure repairs within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate. AECOM will review publically available data such as USGS records, historical aerials and sediment transport data on the Blue River

Deliverable

AECOM will develop plans for the construction of the emergency repairs and a technical memorandum and opinion based on the obtained publically available information as to cause of the streambank instabilities. The TU/AR contractor will perform construction.

**Task 4- McElroy No 1 and 2 Diversion Grade Control Structure**

Description of Task

The existing structure was constructed by Northern Water to improve the ability to divert in light of dwindling river flows. Since installation, the structure has deformed due to excessive downstream scour which has led to the boulders installed by Northern falling into the scour holes and ultimately reducing the elevations of the structure as well as the backwater elevation on the McElroy No. 1 and 2. As a result, irrigation diversions are impaired. It is our opinion the structures should have been constructed in more of an upstream V and the center of the V should contain some rock to help dissipate the energy of the water falling across the check structure. AECOM will develop hydraulic models to estimate the velocities across the structures so we can design the structure in a similar manner as the Thompson Consolidated and TA Engle structures.

One of our design considerations is the tailwater variations from the Blue and Muddy Creeks. Another design consideration is the left side of the existing structures is placed against the shale bluff. Water flowing over the existing structure and against the shale bluff causes the shale bluff to erode and over the long term could cause erosion around the structure. AECOM will evaluate alternative locations for the structure to improve the hydraulics, minimize the amount of rock material for construction and optimize bank erosion and channel scour. This structure will serve as a downstream boundary condition

for the upstream 10 Mile Reach. The structure will be designed to mitigate upstream migration of stream bed degradation.

This task includes estimated construction cost for constructing the McElroy No. 1 and 2 grade control structure.

Method/Procedure

AECOM will survey the river bathymetry near proposed structure location including velocities measurements using an ADCP. Develop 2 dimensional hydraulic model to predict backwater elevations upstream and velocities across check structure. Develop conceptual design of the check structure including a cutoff feature underneath the proposed grade control. Develop plans for the construction of the structure.

TU/AR will contract with a contractor to construct the structure within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

Deliverable

AECOM will develop plans for the construction of the structure. The TU/AR contractor will perform construction within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

**Task 5- Peterson Point Bar Riffle**

Description of Task

The proposed location for this structure is in an over-widen section of river. The Petersons are also experiencing streambank erosion near the Ennis No. 1 irrigation infrastructure. The proposed design will mitigate the stream bank erosion near the irrigation infrastructure, narrow the river during low flows to minimize the stream width to reduce stream temperatures and provide aquatic habitat. The proposed design will emulate naturally occurring riffles within this reach that CPW has identified as ideal aquatic habitat.

This task includes estimated construction cost for constructing the McElroy No. 1 and 2 grade control structure.

Method/Procedure

AECOM will survey the river bathymetry near proposed structure location including velocities measurements using an ADCP. Develop 2 dimensional hydraulic model to predict backwater elevations upstream and velocities across check structure. Develop plans for the construction of the structure.

TU/AR will contract with a contractor to construct the structure within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

Deliverable

AECOM will develop plans for the construction of the structure. The TU/AR contractor will perform construction within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

**Task 6- Shepard Orr No. 2 Irrigation Repair**

Description of Task

This task will provide engineering drawings for emergency bank stabilization to protect the Orr No. 2 Ditch.

This task includes the estimated construction costs for constructing this emergency bank stabilization and installing 400 feet of 12-in HDPE to minimize streambank saturation.

Method/Procedure

AECOM will develop plans for the construction of the structure.

TU/AR will contract with a contractor to construct the structure within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

Deliverable

AECOM will develop plans for the construction of the structure. The TU/AR contractor will perform construction within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

**Task 7- Shepard KB Ditch Irrigation Repair**

Description of Task

This task will provide engineering drawings for emergency bank stabilization to protect the KB Ditch downstream of the Shepardsbend Bridge. The streambank is experiencing significant loss. The streambank erosion measures will include training structures to reduce the velocities near the toe of the streambank. This task includes an engineering evaluation and plans for the long term repair for the section of river from just upstream of the bridge to approximately 2000 feet downstream.

This task includes the estimated construction costs for constructing this emergency bank stabilization and installing 1,800 feet of 18-in HDPE to minimize streambank saturation.

Method/Procedure

AECOM will develop plans for the construction for the emergency irrigation infrastructure repair.

TU/AR will contract with a contractor to construct the emergency irrigation infrastructure repair within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

AECOM will survey the river bathymetry within this reach of river including velocities measurements using an ADCP. Develop 2 dimensional hydraulic model to predict water elevations and velocities. Develop plans for the construction of the long-term repair.

Deliverable

AECOM will develop plans for the construction of the structure. The TU/AR contractor will perform construction within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate. AECOM will develop plans for the construction of the long-term repair.

**Task 8- Bruchez KB and Ennis No. 1 Ditch Irrigation Repair**

Description of Task

This task will provide engineering drawings for the bank stabilization to protect the KB Ditch and the Ennis No. 1 on lands owned by the Bruchez Family. The streambank is experiencing significant loss and the ditches are a complete loss. The streambank erosion measures will evaluate using beetle kill pine commonly found in Grand County to construct timber crib walls to protect the streambanks. This technique has not be attempted in this reach. This task includes an engineering evaluation and plans for the long term repair for the section of river.

This task includes the estimated construction costs for constructing bank stabilization using beetle kill pine and re-establishing the two ditches.

Method/Procedure

AECOM will develop plans for the construction for the timber crib streambank repair.

TU/AR will contract with a contractor to construct the timber crib streambank repair and re-establishing the irrigation ditches within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

AECOM will survey the river bathymetry within this reach of river including velocities measurements using an ADCP. Develop 2 dimensional hydraulic model to predict water elevations and velocities. Develop plans for the construction of the long-term repair.

Deliverable

AECOM will develop plans for the construction of the timber crib structure. The TU/AR contractor will perform construction within the budget estimate provided by AECOM in the ILVK 2016 Budget Estimate.

**Task 9- Program Management**

Description of Task

The task includes the work associated with managing the project such as invoicing, accounts receivable, scheduling, and contracting with engineering and contractors to perform the services described in this scope of work.

**ILVK 2016 Budget Table**

| Task | Description | Engineering/Program Management Costs | Estimated Construction Costs | ILVK Cash Funds | CWCB | Total |
|---|---|---|---|---|---|---|
| 1 | LiDAR Topo Acquisition | $30,000 | $0 | $15,000 | $15,000 | $30,000 |
| 2 | Project Monitoring | $12,000 | $0 | $6,000 | $6,000 | $12,000 |
| 3 | Yust Lower Blue River Project | $20,000 | $15,000 | $17,500 | $17,500 | $35,000 |
| 4 | McElroy No 1 and 2 Diversion Structure | $80,000 | $250,000 | $165,000 | $165,000 | $330,000 |
| 5 | Peterson Point Bar Riffle | $25,000 | $40,000 | $32,500 | $32,500 | $65,000 |
| 6 | Shepard Orr No 2 Irrigation Repair | $10,000 | $23,000 | $16,500 | $16,500 | $33,000 |
| 7 | Shepard KB Ditch Irrigation Repair | $100,000 | $75,000 | $87,500 | $87,500 | $175,000 |
| 8 | Bruchez KB and Ennis No 1 Ditch Repair | $45,000 | $170,000 | $107,500 | $107,500 | $215,000 |
| 9 | Program Management | $35,800 | $0 | $17,900 | $17,900 | $35,800 |
| | | | | | | |
| | **TOTALS** | **$357,800** | **$573,000** | **$465,400** | **$465,400** | **$930,800** |

| | | |
|---|---|---|
| **Grant Request** | | |
| | Percentage of Request | |
| Statewide WSRA | $415,400 | 45% |
| Basin Account | $50,000 | 5% |
| Total WSRA | $465,400 | 50% |
| ILVK Match | $465,400 | 50% |

# ExhibitB

ILVK Upper Colorado River Irrigation and Restoration Project 2016 Location Map