

Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet
July 15-16, 2015
Agenda Item 18(b)

Applicant & Fiscal Agent: Water Enhancement Authority
Water Activity Name: Remote Cloud Seeder for North Grand Mesa
Water Activity Purpose: Cloud Seeding
County: Mesa & Delta
Drainage Basin: Colorado
Water Source: n/a
Amount Requested/Source of Funds: \$25,000 Colorado Basin Account (total grant request)
Matching Funds: Applicant match (\$19,372.30/cash & in-kind) = 44% of the total project costs of \$44,372.30
(refer to *Funding Summary/Matching Funds* section)

Staff Recommendation:
Staff recommends approval of up to \$25,000 from the Colorado Basin Account to help fund the project titled: Remote Cloud Seeder for North Grand Mesa.

Water Activity Summary: WSRA funds, if approved will be expended to purchase a remotely operated cloud seeder that utilizes silver iodide as the seeding nuclei. Following procurement, the seeder will be delivered to and installed at the proposed site, which is about 2 miles north of Big Meadows Reservoir, around 9,500 feet on the Grand Mesa almost due south of Collbran, Colorado on U.S.F.S. Land. This seeder will join 17 other cloud seeders operated by the Water Enhancement Authority for the purpose of increasing snowpack levels on the Grand Mesa and other surrounding higher terrain. This particular location allows the cloud seeder to be close to the cloud bases it will target as well as be upwind of a good portion of our target area during storm events with north-northwest winds accompanying it and fills in one of the remaining “coverage gaps” in the Grand Mesa. This proposed effort will compliment the goals of the CWCB Weather Modification Program and will provide the opportunity supports technology transfer and modernization of cloud seeding equipment.

Discussion:

This project aligns with a Method (Evaluate weather modification projects (e.g. Cloud seeding) to enhance local water supplies) to assist in satisfying the Secure Safe Drinking Water Theme and Supporting Values for the Grand Valley Region as indicated in the Colorado Basin Implementation Plan (Section 3, Page 121).

\$38,774.60 was indicated by the applicant as the cash and in-kind match for this project, as well as for the Gunnison Basin Roundtable WSRA Grant application for WEA’s Remote Grand Mesa Cloud Seeder project. The proposed match actually applies to both grant requests; therefore the total match has been split 50/50 between the two grant requests at \$19,372.30 each.

Issues/Additional Needs:

Whether the equipment will be purchased or leased remains to be determined.

As a condition for funding this grant is that the WEA must host a training event and invite all other project sponsors and contractors of seeding programs to the deployment and demonstration by Idaho Power Company.

Threshold and Evaluation Criteria:

The application meets all four Threshold Criteria

Tier 1-3 Evaluation Criteria: n/a**Funding Summary/Matching Funds:**

	<u>Cash</u>	<u>In-kind</u>	<u>Total</u>
WEA	\$17,500	\$1,872.30	\$19,372.30
WSRA Colorado Basin Account	\$25,000	\$0	\$25,000
Total Project Costs	\$42,500	\$1,872.30	\$44,372.30

CWCB Project Manager: Joe Busto

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

May 26, 2015

Craig Godbout
Colorado Water Conservation Board
Water Supply Planning Section
1580 Logan Street, Suite 200
Denver CO 80203
[303\) 866-3441](tel:3038663441), [ext 3210](tel:3038663441) (office)
[970\) 218-9407](tel:9702189407) (cell)
craig.godbout@state.co.us

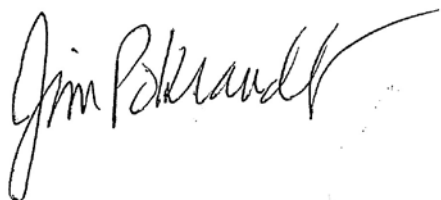
Dear Craig:

The Colorado Basin Roundtable voted unanimously at its May 18, 2015, meeting to approve the Water Enhancement Authority's grant request for \$25,000 in Water Supply Reserve Account funds.

The Water Enhancement Authority is a broad collaboration of water interests in Mesa and Delta counties that contributes money and other resources to a network of cloud seeders that target the Grand Mesa, Battlement Mesa and the West Elks. This grant would support a new remotely operated seeder on the Grand Mesa.

The Roundtable supports cloud seeding as a method of improving snowpack and runoff. This effort addresses two of the themes in the CBRT Basin Implementation Plan: Sustain Agriculture and Secure and Protect Safe Drinking Water.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Jim Pokrandt", with a long, sweeping horizontal stroke extending to the right.

Jim Pokrandt
Chair, Colorado Basin Roundtable



COLORADO WATER CONSERVATION BOARD



WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: April 9, 2015

Remote Cloud Seeder for Northern Grand Mesa

Name of Water Activity/Project

Water Enhancement Authority

Name of Applicant

Colorado Basin

Amount from Statewide Account:

0

Amount from Basin Account(s):

25,000

Total WSRA Funds Requested:

25,000

Approving Basin Roundtable(s)

(If multiple basins specify amounts in parentheses.)

FEIN: 841180992

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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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Revised October 2013

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.

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

1.	Applicant Name(s):	Water Enhancement Authority			
	Mailing address:	Water Enhancement Authority c/o City of Grand Jct. Water Treatment Plant 244 26 ¼ Road Grand Junction CO, 81503			
	FEIN #:	841180992			
	Primary Contact:	Mark Ritterbush	Position/Title:	Secretary/Treasurer	
	Email:	markri@gjcity.org			
	Phone Numbers:	Cell:	(970)210-1027	Office:	(970)256-4185
	Alternate Contact:	Slade Connell	Position/Title:	President	
	Email:	sladec@gjcity.org			
	Phone Numbers:	Cell:	(970)270-4360	Office:	(970)256-9694

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 Water Enhancement Authority (WEA) was established in 1990 by and among the Grand Mesa Water Conservancy District, North Fork Water Conservancy District, Fruitland Mesa Water Conservancy District, Crawford Water Conservancy District, Collbran Water Conservancy District, Kannah Creek Water Users Pool, and the Grand Mesa Water Users Association. As of February, 2015, the WEA has 16 entities as active members, they include: the City of Grand Junction, Grand Mesa Water Users Association, Grand Mesa Water Conservancy District, Ute Water Conservancy District, Collbran Conservancy District, Powderhorn Mountain Resort, Delta County, Town of Orchard City, Colorado River District, Kannah Creek Water Users Pool, Highline Ditch Company, Cottonwood Lakes Reservoir Company, Juniata Ditch Company, Overland Ditch Company, Clifton Water District, and the Mesa Lakes Reservoir Company.

These members all contribute money and/or resources to the WEA for the purpose of conducting a cloud seeding program targeting the Grand Mesa as well as other neighboring high terrain such as Battlement Mesa and the West Elk Mountains.

The purpose of the cloud seeding is to augment natural precipitation within the project area to provide improved snow pack. The spring run-off will then augment stream flows and reservoir storage in the region as well as enhance flows in the Colorado River.

The State of Colorado maintains regulations that govern cloud seeding activities conducted within the state. The Colorado Water Conservation Board (CWCB) administers these regulations. These regulations state that a permit is required to modify the weather in Colorado, with the permit granted to one who is qualified to manage the program. The Water Enhancement Authority operates under Colorado Water Modification Permit No. 2010-4; this permit is good for 10 years.

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

The Contracting Entity and the Applicant are the same.

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.

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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.

The WEA receives zero income from levied taxes so we do not have any issues with TABOR.

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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

☒

X

Other

Explain:

Increasing Water Supply

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

The intent of this project is to increase snowpack which would provide extra water for nonconsumptive, agricultural, or M&I use.

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)

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:

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

Latitude: 39.114

Longitude: -107.946

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 proposed activity involves purchasing a remotely operated cloud seeder that utilizes silver iodide as the seeding nuclei. Following procurement, the seeder will be delivered to and installed at the proposed site, which is about 2 miles north of Big Meadows Reservoir, around 9,500 feet on the Grand Mesa almost due south of Collbran, Colorado on Forest Service Land. This seeder will join 17 other cloud seeders operated by the Water Enhancement Authority for the purpose of increasing snowpack levels on the Grand Mesa and other surrounding higher terrain. This particular location allows the cloud seeder to be close to the cloud bases it will target as well as be upwind of a good portion of our target area during storm events with north-northwest winds accompanying it and fills in one of the remaining “coverage gaps” we have for the Grand Mesa.

Our Cloud Seeding process:

The WEA has a meteorologist who monitors winter storms and will advise those running the cloud seeders in our network when to turn their seeder on and off. Criteria that must be met in order for effective cloud seeding include, wind direction towards the target area, humidity greater than 90%, temperatures at cloud bases in the optimal range, and it must be snowing. Cloud seeders do not cause a snowstorm to develop, they do provide condensation nuclei for liquid water droplets present in the cloud to adhere to form more snowflakes with the right conditions. A typical winter has between 20-25 winter storms that are seedable. The cloud seeder works simply by igniting a propane-fed flame and spraying a solution of acetone containing silver iodide into the flame. The heat generated by the large burner combined with prevailing upslope winds will lift the atomized silver iodide up into the cloud.

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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
 - 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.

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.

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

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 Charter.

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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).
- 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.
- 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.

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).
- 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.

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.
- 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.
- h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.
- i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

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j. 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.

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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.

Cloud seeding tries to get more water to fall to the target area from the atmospheric ocean of water vapor present above us during winter storms. Cloud seeding does not “rob” downwind areas of their precipitation due to the phenomenon of vertical movement of water and water vapor during cloud formation and storm events – think of a thunderhead and/or hail stones developing during thundershower, both rely on vertical currents. The extra supercooled liquid water (SLW) that cloud seeding causes to fall out of the cloud base as a snowflake is replenished via currents and mixing as the cloud continues its path downwind.

Water bodies affected include any reservoir located on top of Grand Mesa. The WEA considers the range of a cloud seeder to be 15-20 miles maximum, higher wind speeds in the storm would increase this range but also increases the uncertainty of where our silver iodide plume is so seeding is suspended for extremely high winds. Major streams and rivers that benefit from our program include: Mesa Creek, Big Creek, Leon Creek and Plateau Creek; all of which end up in the Colorado River.

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

A permit would be required by the Forest Service to locate this cloud seeder on their property. The WEA has a very amiable relationship with the Forest Service and does not foresee permitting being a problem. We did obtain verbal permission to locate a weather station on FS property from them last fall. The WEA already has experience working with government agencies in getting permits for seeders as we have a cloud seeder located on BLM land at the head of Wells Gulch in Delta County; we were able to get a 25 year Right-of-Way permit from them. The process with the BLM involved archaeological, wildlife, and environmental studies and we anticipate the Forest Service to use the same diligence.

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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.

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.

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

Signature of Applicant: *MS Ritterbush*

Print Applicant's Name: Mark Ritterbush

Project Title: Remote Cloud Seeder for Northern Grand Mesa

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
Date: March 26,2016

WATER ACTIVITY NAME – Remote Cloud Seeder for Northern Grand Mesa

GRANT RECIPIENT – Water Enhancement Authority

FUNDING SOURCE - \$38,774.60 WEA & \$25,000 CBRT (requested)

INTRODUCTION AND BACKGROUND

The goal of this project is to purchase, locate, and have in operation by November of 2015, a remotely-controlled cloud seeder constructed by Idaho Power Company (IPC). The model available to purchase is called the RCNG14 (Remote Cloud Nuclei Generator – design revised in 2014). The RCNG14 will join the fleet of 17 other cloud seeders already in use by the Water Enhancement Authority (WEA) to conduct wintertime cloud seeding operations targeting the Grand Mesa and other surrounding high terrain in Western Colorado.

Background: Cloud seeding has been conducted on the Grand Mesa since the late 1970's; the WEA was formed in 1990 in an effort to get away from a contractor-based program and conduct the cloud seeding program on our own, at a much lower cost. The WEA already has two remote seeders that were built by the Desert Research Institute. While these seeders have proven themselves to be reliable, the cost to obtain one of these seeders is almost double of the RCNG14. In addition to that, each year, the DRI requires an expensive maintenance contract on each of these as well causing the WEA and other programs in Colorado to look at other alternatives for remote seeders.

OBJECTIVES

- 1) Locate the RCNG14 in a place that will allow it to effectively seed winter storms and increase snowpack levels on the Grand Mesa.
- 2) Get more water in our reservoirs and rivers.
- 3) Utilize a new vendor for remote cloud seeders who can make an equally reliable product at roughly half the cost.
- 4) Set a precedent where Colorado programs are responsible for maintaining their own generators and eliminate the costly maintenance contracts with out-of-state agencies.

TASKS

Provide a detailed description of each task using the following format

TASK 1 – Procurement of the RCNG14

Description of Task- Once IPC has finished building the RCNG14, they will schedule a delivery date with the WEA.

TASK 2 – Delivery, Training, and Setup of the RCNG14

Description of Task: The IPC will deliver the generator and all supporting hardware and documentation. The IPC will conduct a two-day seminar including setup and operation for the WEA; other entities conducting cloud seeding programs in Colorado will also be invited to this training as the RCNG14 will be the first of its kind in the state.

TASK 3 – Commencement of Operation of the RCNG14

Description of Task WEA will be responsible for setting up a contract with RigNet communication services for the satellite service which is required to communicate and monitor the generator. A maintenance kit must also be purchased from IPC. Once the RCNG14 is set up, the WEA is trained on how to run it, and we can communicate with it, it should be ready to seed storms. Our permit allows us to seed storms that meet the seeding criteria after November 1.

Deliverable: The CWCB will get a final report detailing the process and showing pictures of RCNG14 in its' location. Although it is not anticipated, should this project run longer than 6 months, the CWCB will get a progress report detailing where we're at in the process and what is causing any delays.

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.

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 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.

Total Costs				
	Labor	Other Direct Costs	Matching Funds (If Applicable)	Total Project Costs
Task 1 - Procurement		35,000	10,000	35,000
Task 2 – Delivery, Training, & Set-Up		15,000	15,000	15,000
Task 3- Maintenance Kit		10,000	10,000	10,000
In-Kind Contributions	3209.60	565.00		3,774.60
Total Costs:				63,774.60

Other Direct Costs						
Item:	Cloud Seeder	Maintenance Kit	Delivery & Training (covered by State Cloud Seeding Program)			Total
Task 1 - Procurement	35,000					35,000
Task 2 –Delivery & Trng			15,000			15,000
Task 3- Maintenance Kit		10,000				10,000
Total Cost:	35,000	10,000	15,000			60,000

In-Kind Contributions (If Applicable)					
Project Personnel:	City of Grand Junction	City of GJ mileage/ ATV use			
Hourly Rate:	\$40.12				Total
Task 1 -	80 hrs	165.00			
ATV		400.00			
Total Hours:	80				
Total Cost:	\$3,209.60	565.00			3,774.60

SCHEDULE:

Task	Start Date	Finish Date
1-Procurement	Upon NTP	NTP + 60 days
2 Delivery, Training, & Set-Up	September 1, 2015	October 10, 2015
3Commencement of Operation	November 1, 2015	

NTP = Notice to Proceed

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 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.

Appendices 1-3 are not applicable to our application; Appendix 4 (W-9 Form) is attached: