COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT
2009-2010 GRANT APPLICATION FORM

Animas River Needs Assessment	SW Roundtable
Name of Water Activity/Project	**Approving Basin Roundtable**

$ 57,000.00	**Amount from Statewide Account**	0.00
Total Amount of Funds Requested	**Amount from Basin Account**	$ 57,000.00

Application Content

Attachments

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

*We are pursuing cash match from the Southern Ute and Ute Mountain Ute Tribes and from sanitation districts in the watershed.

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/approval is outlined in Attachment 1.

Once approved by the local Basin Roundtable, the applicant should submit this application, a detailed statement of work, detailed project budget, and project schedule to the CWCB staff by the application deadline.

The application deadlines are:

- Basin Account – 60 days prior to the bi-monthly Board meeting
- Statewide Account – 60 days prior to the March and September Board meeting

Board Meeting Dates	Basin Account Deadlines	Statewide Account Deadlines
3/17 - 3/18/2009	1/16/2009	1/16/2009
5/19 - 5/20/2009	3/19/2009	n/a
7/21 - 7/22/2009	5/21/2009	n/a
9/15 - 9/16/2009	7/15/2009	7/15/2009
11/17 - 11/18/2009	9/17/2009	n/a
January 2010	11/15/2010	n/a
March 2010	1/15/2010	1/15/2010
May 2010	3/15/2010	n/a

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/IWMD.

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:

Mr. Todd Doherty
Colorado Water Conservation Board
Intrastate Water Management and Development Section
WSRA Application
1580 Logan Street, Suite 600
Denver, CO 80203
Todd.Doherty@state.co.us

If you have questions or need additional assistance, please contact Todd Doherty of the IWMD Section at 303-866-3441 x3210 or todd.doherty@state.co.us.

Water Supply Reserve Account – Grant Application Form
Form Revised March 2009

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

1. Applicant Name(s): San Juan Resource Conservation and Development – Animas Watershed Project (AWP)

Mailing address: 31 Suttle Street
P.O. Box 2021
Durango, CO 81302

Taxpayer ID#: 74-2408579 Email address: sjrcd@sanjuanrcd.org

Phone Numbers: Business: 970-259-3289
Home:
Fax: 970-247-3412

2. Person to contact regarding this application if different from above:

Name: Chester Anderson, 970-764-7581

Position/Title Technical Coordinator, AWP

3. Eligible entities that may apply for grants from the WSRA 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) – special, water and sanitation, conservancy, conservation, irrigation, or 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.

4. Provide a brief description of your organization

The Animas Watershed Project (AWP) is a partnership and collaboration between Municipal, State, Tribal, Federal, and local agency representatives and citizens with an interest in the health of the Animas River. The Animas Watershed Project was formed in December 2002 after river users and regulators noticed large quantities of algae and other indicators of degradation in the Lower Animas River. A group of stakeholders formed to begin collaborating to identify pollutant sources and identify methods to improve and protect beneficial and designated uses of the Animas River. The group is unique in that it includes 2 states, a tribe and 2 EPA Regions as well as other Stakeholders. To date the group has identified: 1) sources of pollution, 2) impacts to the assimilative and water storage capacity of the river and 3) Best Management Practices (BMPs) to mitigate sources of pollution and impacts to the assimilative and water storage capacity within the New Mexico portion of the watershed. The current focus of the group is to complete a Watershed-wide Management Plan and secure funding for additional studies and implementation of BMPs on the river, especially in the Colorado portion of the watershed. For more information about the AWP, visit the following website: www.ecosphere-services.com/resources

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

The San Juan Resource Conservation and Development (SJRC&D) Program, a partner of the USDA and a 501c3, tax exempt organization is the contracting entity and the applicant. Stakeholders in the Animas Watershed Partnership are the oversight committee and there are 4 entities responsible for the research.

6. 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 copy of this standard contract is included in Attachment 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.

7. 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.

None

Part B. - Description of the Water Activity

1. Name of the Water Activity/Project:

Lower Animas River Needs Assessment

2. What is the purpose of this grant application? (Please check all that apply.)

[ ] Environmental compliance and feasibility study

[ ] Technical Assistance regarding permitting, feasibility studies, and environmental compliance

[X] Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects

Study or Analysis of:

- [ ] Structural project or activity
- [X] Nonstructural project or activity
- [ ] Consumptive project or activity
- [X] Nonconsumptive project or activity

[ ] Structural and/ or nonstructural water project or activity

3. 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.

This study provides essential information in the development of a Watershed Management Plan and identification of pollution sources, impacts to the assimilative and water storage capacity in the Colorado portion of the Animas Watershed, primarily addressing the prevention of water quality impacts to beneficial and designated uses. Water quality is critical not only to the fish and other biota that live in the river but also to the recreationalists, municipalities and irrigation companies that use, obtain drinking water and obtain agricultural water from the river.

In 2006, a synoptic sampling was completed on the Animas River from the Colorado/New Mexico border to the confluence with the San Juan River in order to characterize pollution sources, impairment locations, and water quality restoration opportunities resulting in a GIS database that Stakeholders utilize to identify reaches of impairment and reaches for remediation of those impairments(San Juan Watershed Group, 2008). With the completion of this proposed needs assessment the result will be a comparable dataset for the Colorado portion of the Animas River.

Eutrophication of rivers is an emerging water quality concern both nationally and in local watersheds, evidenced by the 303(d) listing of the Animas River for eutrophication resulting from nutrient enrichment by New Mexico in 2004. Nutrient enrichment is known to cause excessive algal growth which ultimately results in an increase in decomposition of dead algal material and associated odors, degradation of fish habitat, and non-attainment of designated uses by the Water Quality Control Commission.

Point sources of nutrients include facilities that discharge organic material into the river such as industry and sewage treatment plants. Nonpoint sources of nutrients include urban drainage and agricultural runoff. Impacts to the river system can also result where the assimilative capacity of the river is compromised by bank hardening and the development of floodplains and riparian areas.

This study will devlop the site specific information necessary to address the mitigation and prevention of pollution in both the short and long term. The 3 major tasks include: 1) water quality surveys, 2) identifying specific areas of pollution inputs, and 3) geomorphologic surveys to identify major impacts to the river channel and riparian communities and thus degraded assimilative/functioning capacity of the river. The resulting data will enable the AWP to further prioritize and design projects and strategies to protect water quality on the Animas River.

Part C. – 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]

This study will not result in any impacts on the water rights adjudication system and is completely consistent with Section 37-75-102. Further, this study supports the development of a Watershed Management Plan and implementation of BMPs that aim to protect the long term attainment of beneficial and designated uses on the Animas River for all users.

[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.

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.

AWP expects that following the July 8, 2009 meeting, a letter addressing this criteria from Southwest Basin Roundtable Chair, Mike Preston, summarizing the results of the vote on this activity would be forthcoming.

c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] Specifically describe how the water activity either furthers the Roundtable's basin-wide water needs assessment or meets a consumptive or non-consumptive water supply need identified in the Roundtable's working needs assessment.

The results of this study could be used by the current Non-consumptive Needs Assessment project for the San Juan and Dolores Basins to protect all beneficial an designated uses. The methods are replicable to all streams and rivers as a process to identify sources of impairments to beneficial and designated uses.

[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.

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

Not applicable.

2. For Applications that include a request for funds from the Statewide Account, describe how the water activity meets the **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

Not applicable.

Part D. – 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 the name/location of water bodies affected by the water activity.

This project is designed to protect the water quality of beneficial and designated uses, including the quality of water being used by water-rights holders in the Animas River Watershed.

2. Please provide a brief narrative of any related or relevant previous studies.

A similar study was completed on the Animas River in the New Mexico portion of the watershed. This study will duplicate those efforts giving Stakeholders a complete database with which to evaluate and prioritize the remediation of sources of pollution and reaches of the river to protect beneficial and designated uses.

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.

Please provide a detailed statement of work using the following template. Additional sections or modifications may be included as necessary. Please define all acronyms. If a grant is awarded an independent statement of work document will be required with correct page numbers.

Statement of Work

WATER ACTIVITY NAME – Animas River Needs Assesment

GRANT RECIPIENT – San Juan Resource Conservation and Development

FUNDING SOURCE – SW Roundtable

INTRODUCTION AND BACKGROUND
Provide a brief description of the project. (Please limit to no more than 200 words; this will be used to inform reviewers and the public about your proposal)

This project completes a watershed-wide study of the Animas River, identifying sources of pollution in the Colorado portion of the watershed and impacted riparian and thus assimilative capacity of the river and identifying methods to mitigate or remediate the sources of pollution and improve the assimilative capacity for the benefit of both consumptive and non-consumptive uses and to protect beneficial and designated uses. A similar study has been completed in the New Mexico portion of the watershed.

OBJECTIVES
List the objectives of the project

- Analysis of the chemical and biological communities of the Animas River
- Analysis of the geomorphic characteristics and degraded assimilative capacity of the Animas River
- Identification of pollution sources on the Animas River
- Identification of opportunities to remediate and mitigate pollution sources on the Animas River

TASKS
Task 1 – Water Quality Survey

The existing water quality conditions of the lower basin of the Animas River in Colorado and its inflows will be identified in this task. This will be accomplished through sampling and analyzing the water and biological communities in the Animas River immediately upstream of each inflow as well as sampling and analyzing the water and biota from each inflow. Sample sites will be identified by a reconnaissance where each inflow to the Animas River(including pipes, field drains, natural drainages, and irrigation ditch return flows) will be identified, photographed and mapped. The water quality of the Animas upstream of each inflow represents the influence each surface flow has on the

river.

Task 1.1 – Field Work

At each sample site, water will be collected and analyzed for nutrients (nitrate + nitrite, total Kjeldahl nitrogen, ammonia, total phosphorus, and orthophosphate) pH, and conductivity and the flow for each will be measured in order to complete a loading analysis. The same efforts will occur for the Animas River upstream of each return flow. Macroinvertebrates are indicators of the long term health of the river and of each reach and will also be collected at each sample site and analyzed using standard methods.

Task 1.2 – Lab Analysis

Analysis of water samples collected at each sample site and analysis of macroinvertebrate samples. Macroinvertebrate community composition is an excellent indicator of the health of a river and they have been used as indicators throughout SW Colorado.

Task 1.3 – Data Analysis & Reporting

Utilizing the extensive database for macroinvertebrates and water quality, the Animas River and inflows will be characterized in relation to other streams and rivers as well as to other sample sites on the Animas River. Identification of the overall quality of water of the Animas River between Baker's Bridge and the New Mexico State Line and surface sources of nutrient loads to the Animas will be the primary deliverables of this task.

Task 2 – Periphyton Biomass and Nitrogen 15 Stable Isotope Analyses

In this task, periphyton samples will be collected and the biomass of the periphyton will be measured and analyzed for nitrogen 15 stable isotope signatures. Periphyton are the algae, bacteria, and fungi growing on surfaces in an aquatic environment. This task will indicate areas where untreated or poorly treated sewage enters the river either through poorly maintained or poorly engineered treatment plants and/or septic systems and where non-point sources of pollution and poor assimilation capacity of the river may be a factor.

Task 2.1 – Field Work

Rocks will be collected from riffles at approximately 35 locations at roughly one mile intervals along the Animas River main-stem. Four rocks will be collected from four locations within the riffle to gain a more representative profile of a given riffle. Rocks will be scrapped and scrubbed to remove periphyton from a standard area of 10 cm^2. The dislodged periphyton will be rinsed into a labeled whirlpack, covered in foil, and stored on ice. The longest axis of each rock will be measured.

Task 2.2 – Lab Analysis

Task 2.2.1 – Periphyton biomass: chlorophyll *a*

Chlorophyll *a* is a commonly used index of algal biomass. Within 24 hours of collection, the periphyton samples will be filtered on glass fiber filters and stored frozen. Periphyton that consists of clumps or filaments will be blended prior to filtration. Within 30 days of collection, the frozen periphyton samples will be analyzed for chlorophyll *a*. Chlorophyll in the periphyton on filters will be extracted with ethanol for 20 to 24 hours in the dark. Chlorophyll *a* will be determined by the non-acidification method using a Turner Trilogy Fluorometer.

Task 2.2.2 – Periphyton biomass: ash-free dry mass

Ash-free dry mass (AFDM) is a measurement of the organic contents of the periphyton. AFDM includes algal as well as non-algal components. Within 24 hours of collection, the periphyton samples will be filtered on ashed and pre-weighed glass fiber filters and stored frozen. Periphyton that consists of clumps or filaments will be blended prior to filtration. Within 14 days of collection, the frozen filter samples will be dried at 60°C. The dried filter samples will be weighed, then ashed at 550°C for 4 hours. The ashed filter samples will be cooled in a desiccator and then re-weighed. AFDM will be determined by the difference in mass between dry and ashed samples.

Task 2.2.3– Periphyton nitrogen 15 isotopic signature

The nitrogen 15 isotopic signature is a measure of the amount of heavy nitrogen 15 compared to the more common isotope nitrogen 14. It is reported as the delta nitrogen 15 (δN15). Different sources of nitrogen often have distinctive isotope signatures that can provide a better understanding of the system than simply measuring concentrations of nitrogen. An increase in δ15N usually signifies an increasing anthropogenic source. For example, in Toda et al. (2002) δ15N in periphyton increased with increasing distance from headwaters. The increase in periphyton δ15N also correlated with increasing relative contribution of nitrate from sewage and animal waste. A similar relationship was found between increasing agricultural use of watersheds and increasing δ15N by Luecke and Messner (2005). Nitrate from human and animal wastes generally has a higher δ15N than nitrate derived soil nitrogen or from synthetic fertilizers, however. In the 2006 nutrient source identification study conducted on the New Mexico portion of the Animas River, a striking increase in δ15N occurred downstream of the Aztec Wastewater Treatment Plant and continued for several miles through the more urbanized lower portion of the river (K. Nydick, unpublished data).

Within 24 hours of collection, the periphyton samples will be filtered on ashed glass fiber filters and stored frozen. Periphyton that consists of clumps or filaments will be blended prior to filtration. Within 14 days of collection, the frozen

filter samples will be dried at 60°C. The filters are then encapsulated in tin capsules. δ15N is determined by mass spectrometry at the University of California-Davis or comparable laboratory.

Task 2.3 – Data Analysis & Reporting

This information will be compiled, summarized, and presented in both table and map format, along with interpretation of the data. Identification of acute sources of nutrients (human waste) to the Animas River, both surface and subsurface will be the major deliverable of this task.

Task 3 – Rapid Geomorphic Assessment

The geomorphic assessment will quantify present-day characteristics of the river channel and adjoining flood plains through the use of various field methods. This information is required in order to evaluate the present-day condition of the channel relative to its stable forms, cause(s) of instability, sources and indicators of increased sediment and degraded assimilative/functioning capacity, and potential improvement opportunities and stabilization-restoration techniques. This information will be compiled, summarized and presented on a reach-by-reach basis. When combined with nutrient and aquatic assessments, sources of impairment will be documented and specific opportunities (Best Management Practices) for water quality improvement measures can be identified.

Task 3.1 – Description of task

The river will be divided into reaches that exhibit similar geomorphic features, based on aerial photography and channel/flood plain characteristics. Geomorphic assessments performed on a reach by reach basis will determine stream type, channel stability, channel bank erosion potential and adjoining flood plain characteristics. Geomorphic assessments performed at representative riffle sections, in conjunction with nutrient, BMI and periphyton sampling, will quantify channel bankfull dimensions, wetted-channel water depth and velocity, and channel bed composition (e.g., cobble, gravel, sand).

Task 3.2 – Methods

The methods and a description of results for each geomorphic parameter to be evaluated are provided below. Assessment work will be performed by Basin Hydrology, Inc.

Task 3.2.2 – Performed on a reach-by-reach basis

- Stream Type
  - Determine stream type for each reach using criteria presented by Rosgen in Applied River Morphology (1996, see attached Classification Key).
- Channel Stability Rating
  - Evaluate each reach's condition at upper bank, lower bank

and bottom of channel using Pfankuch evaluation criteria (see attached Channel Stability (Pfankuch) Evaluation and Stream Classification Summary form).
    - Determine overall channel stability rating based on stream type.
- Channel Bank Erosion Potential
    - Evaluate representative banks within each reach using Bank Erosion Potential evaluation criteria (see attached Bank Erosion Potential form)
    - Identify on maps highly eroded and degraded bank sections
    - Identify on maps where bank stabilization measures have occurred and their condition
    - Determine overall bank erosion rating for each reach
- Flood Plain Composition
    - Identify general land use(s) on active flood plain and any potential adverse impacts
    - Identify dominant riparian vegetation, condition of vegetation and estimated percent ground cover
    - Summarize flood plain characteristics for each reach

Task 3.2.3 – Performed at representative riffle sections

- Channel Bankfull Dimension
    - Measure bankfull width at representative riffle sections
    - Estimate bankfull depth at same locations
    - Determine bankfull width-to-depth ratio at each sampled riffle section
- Water Depth and Velocity Measurements
    - Measure water depth at several locations across wetted channel at representative riffle sections
    - Measure water velocity at several locations across wetted channel at representative riffle sections
    - Provide mean and range of measured water depths and velocities.
- Channel Bed Composition
    - Perform Wolman pebble count at representative riffle sections
    - Plot pebble count data to quantify channel bed sizes and distribution
    - Determine the measure of embeddedness at riffles using methods described in Bed-Material Characteristics of the San Juan River and Selected Tributaries, New Mexico: Developing Protocols for Stream-Bottom Deposits (Hein, et al, 2004)

Task 3.3 – Deliverables

Upon completion of data collection and analysis, a summary of geomorphic findings will be presented. A narrative for each reach will describe assessment methods, findings and their interpretations. Maps will identify each reach. Data plots and data forms and representative photographs will be provided.

Identification of impaired and degraded river functions will be the primary deliverable of this task

Task 4 – Data synthesis overall deliverable

Team Leaders will discuss each others findings to identify locations and causes of impaired reaches based on data collected on water quality, macroinvertebrates, periphyton biomass, periphyton N15 analysis and geomorphic findings. Team members will then identify opportunities for, and types of, water quality improvement projects on the Animas River in coordination with the Stakeholders of the Animas River.

Task 5 – Animas Watershed Group Coordination and Project Management

The role of the Animas Watershed Project Coordinator will be to ensure that communication between the project manager and the Animas Watershed Project stakeholders and other river-related community groups occurs. There will be regular updates on the project status and outcomes to the stakeholders during each monthly meeting, quarterly reporting to the CWCB Roundtable and additional outreach to concerned community groups. The AWP Coordinator will also work with the project manager to ensure the successful execution of this proposed project.

Additional Information

The AWP represents more than 6 years of effort in collaboration between Municipal, State, Tribal, Federal, and local entities to achieve workable solutions to issues in the Animas River watershed, primarily related to nutrient enrichment. Currently, the group is in the process of completing a Watershed Management Plan, and has completed a Sampling and Analysis Plan, in order to provide an agreed-upon framework for watershed management and data collection on the Animas River and tributaries. In addition, the AWP has compiled a comprehensive database of existing water quality samples and measurements and compiled this data in a Geographic Information System (GIS) database that contains spatial datasets such as land cover, discharge locations, irrigation systems, and land ownership.

The ARNW and the AWP have received over $68,000 from New Mexico Environment Department, $14,000 from Southwest Water Conservation District, $15,000 from Colorado Watershed Assembly, $25,000 from Colorado Department of Public Health and Environment, $2,000 from Southern Ute Indian Tribe, $1,000 from the City of Durango, $1,000 from the City of Farmington and well over $100,000 of in-kind support to operate Stakeholder Groups and complete studies.

Personnel

There are four entities responsible for the research:

a. Ecosphere Environmental Services
b. BUGS Consulting
c. Mountain Studies Institute
d. Basin Hydrology

Janet Wolf with Ecosphere Environmental Services is the Coordinator of the Animas Watershed Project. Chester Anderson with B.U.G.S. Consulting is the lead on the nutrient loading and macroinvertebrate community assessment tasks and the Project Manager and will coordinate the preparation of the final Needs Assessment document and is responsible for its completion. Dr. Koren Nydick with Mountain Studies Institute will be the lead on periphyton biomass, and Nitrogen Isotope tracer assessments. Mark Oliver with Basin Hydrology will be the lead on geomorphic assessments. Biographical sketches are provided below. Anderson and Nydick completed the New Mexico portion of this study in 2006.

Biographical Sketch for B.U.G.S. Consulting (Bio-assessment, Underwater Graphs and Stats)

Established in 1995, B.U.G.S Consulting is a small independent environmental research and monitoring firm located in Southwest Colorado. The business grew out of a research project developed by Chester R. Anderson, President, for the Animas River Stakeholders Group (ARSG) of Silverton, Colorado to assess the effectiveness of mine site remediation in the Upper Animas River Basin. B.U.G.S has worked for each of the States and Tribes in the region, evaluating the health of rivers, streams and wetlands and recommending methods to protect designated and beneficial uses and remediate impacts to those uses. B.U.G.S has managed, implemented and completed numerous studies on stream health in the region (www.bugsconsulting.com).

Biographical Sketch for Mountain Studies Institute (MSI)

MSI is an independent, non-advocacy, not-for-profit 501(c)3 research and education institution headquartered in Silverton, Colorado with an additional office at Fort Lewis College in nearby Durango. MSI's mission is to enhance understanding and sustainable use of the San Juan Mountains and its communities through research and education. MSI accomplishes this mission by conducting needed studies, translating scientific results into understandable and accessible formats, and providing high quality information to managers, decision makers, students, and other stakeholders. MSI also hosts visiting researchers and students and offers an educational series. The Institute's programs focus on five themes: land and communities in transition, air quality, water and snow, climate change, and ecosystems and biodiversity.

Biographical Sketch for Basin Hydrology, Inc.

Mark Oliver formed Basin Hydrology, Inc. (BHI) in 1994 to offer specialized surface water hydrology services, including fluvial geomorphology, wetlands, and watershed-scale drainage and erosion issues. Prior to formation of Basin Hydrology, Inc., Mr. Oliver was employed by full service survey, planning and engineering companies where he worked closely with various professional disciplines and became skilled at start-to-finish project management. Since 1994, BHI has provided quality service directly to both the public and private sectors, and as a subcontractor to numerous engineering and environmental consulting firms in Colorado, Utah, New Mexico, Idaho, Wyoming and Nevada.

Biographical Sketch for Janet Wolf, Ecosphere Environmental Services.

Janet has nearly 20 years of professional environmental consulting experience and has become a recognized expert in community relations and public participation for NEPA, CEQA, and other similar projects, particularly managing public involvement processes and supporting EIS and Resource Management Plan development. Ms. Wolf has managed and facilitated numerous public meetings in both urban and rural settings, and has prepared a wide variety of documents for public distribution. Presently, she serves as the coordinator for the Animas Watershed Project, leading a group of diverse Colorado and New Mexico stakeholders in drafting a Watershed Management Plan using the US Environmental Protection Agency's handbook and guidance. Ms. Wolf also acted as the public involvement contractor for the Desert Rock Energy Project sited on the Navajo Nation, south of Farmington, New Mexico. Responsibilities involved drafting newsletters, and conducting and coordinating public meetings in Colorado, New Mexico, and at multiple chapter houses on the Navajo Nation. Ms. Wolf holds a B.A. in biology from the University of California at Davis and has completed all master's course work in environmental management from the University of San Francisco and in environmental quality science from the University of Alaska in Anchorage.

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

Task	Personnel	Function	Rate	Hours	Cost
Task 1, Water Quality	Chester/Tyler	Field Lead/Logistics/Sub-project Lead - Nutrients	$85.00	75	$6,375.00
	Level 1 Tech	Level 1 Tech - BMI, Habitat	$45.00	75	$3,375.00
	BMI	ID benthic macroinvertebrates	$295.0 0	10	$2,950.00
	TN, TP	Nutrients	$55.00	80	$4,400.00
	E. coli	Bacteria	$9.00	80	$720.00
	Nutrient Sub-project	Data analysis, reporting on nutrients/bac/macros	$85.00	65	$5,525.00
		Total Cost, Task 1 Water Quality			**$23,345.00**
Task 2, Periphyton & N15	Koren Nydick	Subproject Lead - Periphyton	$85.00	75	$6,375.00
	Level 1 Tech	Level 1 Tech - Periphyton	$45.00	75	$3,375.00
	Algal Biomass	Chlorophyll-a, ash free dry mass	$35.00	35	$1,225.00
	Delta Air	Nitrogen isotope source signature	$25.00	35	$875.00
	Periphyton Sub-project	Data analysis, reporting on periphyton	$85.00	65	$5,525.00
		Total Cost, Task 2, Periphyton & N15			**$17,375.00**
Task 3, Geomorphology	Mark Oliver	Subproject Lead - RGA	$85.00	75	$6,375.00
	Support Tech	Support Tech	$45.00	75	$3,375.00
	RGA Sub-project	Data analysis, reporting on RGA for Animas	$85.00	65	$5,525.00
		Total Cost, Task 3, Gemorphology			**$15,275.00**
Task 4, Coord, Mngmnt	Project Management	Coordination, management and final report	$85.00	65	$5,525.00
	Janet Wolf	AWP Coordinator	$65.00	90	$5,850.00
	Project Administration	SJRC&D		5%	$3,368.50
		Total Cost, Task 4, Coordination & Mngmnt			**$14,743.50**
In-Kind					
Task 1-4	VISTA volunteer support tech		$17.00	80	$1,360.00
Task 1-4	Field equipment	Probes, sample equipment, supplies			$950.00
Task 1-4	Boating equipment	Access to sample sites			$750.00
Task 1-4	Mileage	To and from sample sites			$450.00
Task 1-4	Office space	Coordination, management, data analysis, reporting			$350.00
Task 1-4	Computers and software	Data analysis and reporting			$775.00
Task 1-4	Office supplies	Coordination, management, reporting			$150.00
Task 1 & 2	Lab space	Lab analyssis and staging area			$950.00
Task 4	Coordination				$1,625.00
		Total In-Kind			**$7,360.00**
Cash Match*					
Task 1-4	Reconnaissance	Identify sample sites			$2,100.00
Task 1-4	Reconnaissance reporting and review	Revise work-plan and logistics, report to Stakeholders			$770.00
	City of Durango				$1,000.00
	Goff Engineering				$200.00
		Total Cash Match			**$4,070.00**
				TOTAL MATCH	**$11,430.00**
				MATCH NEEDED	**$9,688.50**
				TOTAL PROJECT COSTS	**$74,730.00**
				TOTAL REQUESTED FROM CWCB	**$57,000.00**

*We are pursuing cash match from the Southern Ute and Ute Mountain Ute Tribes and from sanitation districts in the watershed.

IV. Schedule

Task	Sep 2009	Oct 2009	Break	June 2010	July 2010	Sep 2010	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	June 2011
Reconnaissance (match funds)															
Report on reconnaissance (match funds)															
Preliminary geomorphic analysis using aerial photographs															
Prep for field studies															
Field Studies															
Lab Analysis															
Data Analysis															
Individual reports & data Synthesis															
Draft report to Science Committee															
Final report															
Presentation to Stakeholders															

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.

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

Signature of Applicant:

Print Applicant's Name:

Project Title:

Return this application to:

Mr. Todd Doherty
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 600
Denver, CO 80203

To submit applications by Email, send to: todd.doherty@state.co.us

Attachment 1
Reference Information

The following information is available via the internet. The reference information provides additional detail and background information.

Colorado Water Conservation Board (http://cwcb.state.co.us/)

Loan and Grant policies and information are available at – http://cwcb.state.co.us/Finance/

Interbasin Compact Committee and Basin Roundtables (http://ibcc.state.co.us/)

Interbasin Compact Committee By-laws and Charter (under Helpful Links section) –

http://ibcc.state.co.us/Basins/IBCC/

Legislation

House Bill 05-1177 - Also known as the Water for the 21st Century Act –

http://cwcbweblink.state.co.us/DocView.aspx?id=105662&searchhandle=28318

House Bill 06-1400 – Adopted the Interbasin Compact Committee Charter –

http://cwcbweblink.state.co.us/DocView.aspx?id=21291&searchhandle=12911

Senate Bill 06-179 – Created the Water Supply Reserve Account –

http://cwcbweblink.state.co.us/DocView.aspx?id=21379&searchhandle=12911

Statewide Water Supply Initiative

General Information – http://cwcb.state.co.us/IWMD/

Phase 1 Report – http://cwcb.state.co.us/IWMD/SWSITechnicalResources/SWSIPhaseIReport/

Attachment 2
Insurance Requirements

NOTE: The following insurance requirements taken from the standard contract apply to WSRA projects that exceed $100,000 in accordance with the policies of the State Controller's Office. Proof of insurance as stated below is necessary prior to the execution of a contract.

13. INSURANCE

Grantee and its Sub-grantees shall obtain and maintain insurance as specified in this section at all times during the term of this Grant: All policies evidencing the insurance coverage required hereunder shall be issued by insurance companies satisfactory to Grantee and the State.

A. Grantee

i. Public Entities

If Grantee is a "public entity" within the meaning of the Colorado Governmental Immunity Act, CRS §24-10-101, et seq., as amended (the "GIA"), then Grantee shall maintain at all times during the term of this Grant such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the GIA. Grantee shall show proof of such insurance satisfactory to the State, if requested by the State. Grantee shall require each Grant with Sub-grantees that are public entities, providing Goods or Services hereunder, to include the insurance requirements necessary to meet Sub-grantee's liabilities under the GIA.

ii. Non-Public Entities

If Grantee is not a "public entity" within the meaning of the GIA, Grantee shall obtain and maintain during the term of this Grant insurance coverage and policies meeting the same requirements set forth in **§13(B)** with respect to sub-Grantees that are not "public entities".

B. Sub-Grantees

Grantee shall require each Grant with Sub-grantees, other than those that are public entities, providing Goods or Services in connection with this Grant, to include insurance requirements substantially similar to the following:

i. Worker's Compensation

Worker's Compensation Insurance as required by State statute, and Employer's Liability Insurance covering all of Grantee and Sub-grantee employees acting within the course and scope of their employment.

ii. General Liability

Commercial General Liability Insurance written on ISO occurrence form CG 00 01 10/93 or equivalent, covering premises operations, fire damage, independent Grantees, products and completed operations, blanket Grantual liability, personal injury, and advertising liability with minimum limits as follows: **(a)**$1,000,000 each occurrence; **(b)** $1,000,000 general aggregate; **(c)** $1,000,000 products and completed operations aggregate; and **(d)** $50,000 any one fire. If any aggregate limit is reduced below $1,000,000 because of claims made or paid, Sub-grantee shall immediately obtain additional insurance to restore the full aggregate limit and furnish to Grantee a certificate or other document satisfactory to Grantee showing compliance with this provision.

iii. Automobile Liability

Automobile Liability Insurance covering any auto (including owned, hired and non-owned autos) with a minimum limit of $1,000,000 each accident combined single limit.

iv. Additional Insured

Grantee and the State shall be named as additional insured on the Commercial General Liability and Automobile Liability Insurance policies (leases and construction Grants require additional insured coverage for completed operations on endorsements CG 2010 11/85, CG 2037, or equivalent).

v. Primacy of Coverage

Coverage required of Grantee and Sub-grantees shall be primary over any insurance or self-insurance program carried by Grantee or the State.

vi. Cancellation

The above insurance policies shall include provisions preventing cancellation or non-renewal without at least 45 days prior notice to the Grantee and the State by certified mail.

vii. Subrogation Waiver

All insurance policies in any way related to this Grant and secured and maintained by Grantee or its Sub-grantees as required herein shall include clauses stating that each carrier shall waive all rights of recovery, under subrogation or otherwise, against Grantee or the State, its agencies, institutions, organizations, officers, agents, employees, and volunteers.

C. Certificates

Grantee and all Sub-grantees shall provide certificates showing insurance coverage required hereunder to the State within seven business days of the Effective Date of this Grant. No later than 15 days prior to the expiration date of any such coverage, Grantee and each Sub-grantee shall deliver to the State or Grantee certificates of insurance evidencing renewals thereof. In addition, upon request by the State at any other time during the term of this Grant or any sub-grant, Grantee and each Sub-grantee shall, within 10 days of such request, supply to the State evidence satisfactory to the State of compliance with the provisions of this **§13**.

Attachment 3
Water Supply Reserve Account Standard Contract

NOTE: The following contract is required for WSRA projects that exceed $100,000. (Projects under this amount will normally be funded through a purchase order process.) Applicants are encouraged to review the standard contract to understand the terms and conditions required by the State in the event a WSRA grant is awarded. Significant changes to the standard contract require approval of the State Controller's Office and often prolong the contracting process.

It should also be noted that grant funds to be used for the purchase of real property (e.g. water rights, land, conservation easements, etc.) will require additional review and approval. In such cases applicants should expect the grant contracting process to take approximately 3 to 6 months from the date of CWCB approval.

Attachment 4
W-9 Form

NOTE: A completed W-9 form is required for all WSRA projects prior execution of a contract or purchase order. Please submit this form with the completed application.