COLORADO WATER CONSERVATION BOARD

ALERNATIVE AGRICULTURAL WATER TRANSFER METHODS COMPETITIVE GRANT PROGRAM

GRANT APPLICATION FORM

FLEX Water Market – Education and Implementation Phase		**Statewide**
Program/Project Name	**River**	**Basin Name**

$183,314.00	**$22,278.00**
Amount of Funds Requested	Amount of Matching Funds

Instructions: This application form must be submitte d in electronic format (Microsoft Word or Original PDF). The application can be emailed or a disc can be mailed to the address at the end of the application form. The Alternative Agricultural Water Transfer Methods Competitive Grant Program, Criteria and Guidelines can be found at http://cwcb.state.co.us/LoansGrants/alternative-agricultural-water-transfer-methods-grants/Pages/main.aspx. **The criteria and guidelines must be reviewed and followed when completing this application**. You may attach additional sheets as necessary to fully answer any question, or to provide additional information that you feel would be helpful in evaluating this application. Include with your application a cover letter summarizing your request for a grant. If you have difficulty with any part of the application, contact Todd Doherty of the Water Supply Planning Section (Colorado Water Conservation Board) for assistance, at (303) 866-3441 x3210 or email at todd.doherty@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed program/project. If this is not the case, contact Todd before completing this application.

Part A. - Description of the Applicant(s) (Program/Project Sponsor);

1. Applicant Name(s): Ducks Unlimited, Inc. and Aurora Water*

Mailing address: 2926 E. Mulberry Avenue, Fort Collins, CO 80524

*See ¶ 4.a) for additional applicant contact information.

Taxpayer ID#: 13-5643799. Email address: gkernohan@ducks.org

Phone Numbers: Business: 970-221-9863

Home: 970) 481-7793

Fax:

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

Name: Greg Kernohan

Position/Title Program Manager, CO/WY

3. If the Contracting Entity is different then the Applicant, please describe the Contracting Entity here.

Contracting entities for this project include the following:

Matt Lindburg, P.E.
Brown and Caldwell
1697 Cole Blvd #200
Golden, CO 80401
Telephone: 303-239-5400

Brown and Caldwell is an engineering and consulting firm specializing in water resources. Mr. Lindburg is a professional engineer employed at Brown and Caldwell and will provide engineering consultation services to the project.

P. Andrew Jones, Esq.
Lawrence Jones Custer Grasmick LLP
5245 Ronald Reagan Blvd., Suite 1

Johnstown, CO 80534
Telephone: 970-622-8181

Lawrence Jones Custer Grasmick LLP is a law firm specializing in water rights law. Mr. Jones is an attorney at Lawrence Jones Custer Grasmick and will serve as the administrator and facilitator of this program. His administrative duties will include organization and coordination of the final report.

4. Provide a brief description of your organization. The applicant may be a public or private entity. Given the diverse range of potential applicants, not all of the following information may be relevant. Where applicable and relevant the description should include the following:

   a) Type of organization, official name, the year formed, and the statutes under which the entity was formed, a contact person and that person's position or title, address and phone number. For private entities, a copy of the Articles of Incorporation and By-laws should be appended to the application.

      1) Aurora Water is the Aurora Water, Colorado, a Colorado home rule municipal corporation of the counties of Adams, Arapahoe and Douglas, acting by and through its Utility Enterprise, whose address is 15151 East Alameda Parkway, Suite 3600, Aurora, Colorado 80012.

   By-laws for Ducks Unlimited, Inc. are incorporated as Attachment 1.

   b) For waters suppliers, information regarding the number of customers, taps, service area, and current water usage, and future growth plans, water related facilities owned or used, funding/revenue sources (existing service charges, tap fees, share assessments, etc.), the number of members or shareholders and shares of stock outstanding or a description of other means of ownership.

   Aurora Water's and Ducks Unlimited's responses to this question are detailed below at 4. d) 1) and 2).

   c) For other entities, background, organizational size, staffing and budget, and funding related to water that is relevant in determining whether the applicant has the ability to accomplish the program/project for which funding is sought.

   Aurora Water's and Ducks Unlimited's information in response to this question is detailed at 4. d) 1) and 2) below.

   d) A brief history of the Applicant(s) and program participants.

      1) Aurora Water

      The City of Aurora, Colorado is a relatively new suburb to Denver and is the third largest city in the state, with a population of nearly 312,000. For Aurora Water, meeting the increased thirst of a burgeoning city is a challenge. Continued growth and a possibly dwindling water supply have necessitated an evaluation of the city's water infrastructure and "out-of-the-box" planning to ensure that a reliable water supply is available for the future. In 2002, low rainfall and runoff brought the system's vulnerability to attention. With seemingly

no water available to increase storage levels, reservoir capacity fell to 26 percent in March 2003, well below the desired minimum level and an adequate supply for less than 1 year of indoor use in the City. This situation made perfectly clear the need for guaranteed reliability in the face of continued pressure on available water supplies.

To meet these needs and enhance the ability to protect against prolonged drought, many projects are being undertaken. The Prairie Waters Project is an example of the insightful planning that is taking place in Aurora. This project is capable of delivering fully reusable water from approximately 35 miles away, pumping the supply back to the City for treatment and incorporation in the City's water system. Aurora Water is also negotiating with several mining companies to develop gravel pit storage reservoirs to improve operational flexibility and increase the ability to capture every drop of supply before it is permanently lost from the system. An additional effort being undertaken is the assessment of senior water rights along the South Platte River for increased water supply. Aurora Water wants to understand the alternatives available for creating necessary supplies during times of need while supporting the agricultural industry in collaborative ways. The Alternatives Agricultural Water Transfer Methods work product is expected to be valuable to the City in evaluating various "win-win" scenarios available to agricultural land and water rights owners and other water users on the South Platte River.

Aurora Water is not without experience in working with agricultural interests on mutually beneficial projects. In the Arkansas River basin in 2003, Aurora Water entered into a two-year lease program with the Highline Ditch Company. This heavily subscribed program involved the implementation of more efficient farming practices, temporary transfer of the "saved" water and a price per applicable acre paid to each subscriber. The lease was largely viewed as a success by both Aurora Water and the local community. In similar fashion, Aurora Water would be interested in pursuing other opportunities such as this one in the lower South Platte basin, including multiple year, mutually beneficial agreements. Aurora would like to work with agricultural interests to develop shared agreements, whereby Aurora Water may be able to cover water shortfalls (such as those occasionally experienced under augmentation plans) in exchange for supplies under other identified conditions. Moreover, as a broader water resources planning effort, Aurora Water would like to build lasting relationships and establish trust in discussions and negotiations.

2) Ducks Unlimited, Inc.

Ducks Unlimited has a ten-year history along the South Platte River in Colorado of working cooperatively with agricultural producers and M&I users to provide water through alternative agricultural water transfers and that provide water for multiple benefits. They have extensive knowledge of the South Platte River from Platteville to the state line with regard to dealing with issues of alternative agricultural water transfers and implementation of water resources projects. New relationships built primarily through the South Platte Roundtable have encouraged Ducks Unlimited to seek partnerships interested in alternative agricultural water transfers that maintain irrigated agriculture. These partnerships have developed in the Front Range watersheds of the South Platte, in the Metro Roundtable member counties, and in municipalities including Fort Collins and Greeley.

Historically, Ducks Unlimited has constructed typical recharge wetlands or ponds conducive to providing high quality habitat for migrating waterfowl. These projects contribute several other benefits including recreational hunting, bird watching and water quality improvements through contamination filtering. In addition, these projects have for many years provided recharge credits to agricultural producers or to wildlife agencies through various agreements and contracts. After several years of experience, and some changes in water transfers, Ducks Unlimited believes that the operation of recharge wetlands could enhance and promote alternative transfers of agricultural water to M&I users. This can be done by leasing unused recharge credits to M&I users, by facilitating rotational fallowing or interruptible supply plans through conservation easements, and by providing improved wetland management on portions of agricultural property while maintaining crop production on the rest of the property.

There may be additional participants identified in the future. The Education, Facilitation and Consultation phase of the study will identify certain parties based upon their interest in implementation of a FLEX Water Market.

e) Please include any relevant Tabor issues relating to the funding request that may affect the Contracting Entity.

We are not aware of any Tabor issues relevant to this funding request.

Part B. - Description of the Alternative Water Transfer Program/Project –

1. Purpose of the Program/Project

Please provide a summary of the proposed program/project, including a statement of what the program/project is intended to accomplish, the need for the program/project, the problems and opportunities to be addressed, the expectations of the applicant(s), and why the program/project is important to the applicant(s). The summary must include a description of the technical, institutional (i.e., how the program/project will be organized and operated), and legal elements that will and/or have been addressed by the applicant and proposed program/project. The summary should also discuss relevant project history, if applicable, and any other relevant issues.

1. **FLEX Team**. Education, Facilitation, Consultation, Organization.
    a. Facilitate Implementation of FLEX approach.
        i. Sponsors and our contractors serve as a team available to parties seeking to implement FLEX concept, based upon inquiries and requests from third parties. Grant funding would be limited to education, organization, facilitation, and consultation, with the goal of fostering development of FLEX markets.. Parties seeking assistance would be responsible for negotiation, contracting, infrastructure, project specific legal, engineering, and water court/administrative applications- grant funding would not be used for these purposes. The Sponsors along with the team will review and approve all

requests for assistance to be funded through this grant prior to approving expenditure of funds in order to assure that assistance provided does advance the values and goals of the Sponsors and the CWCB. Services to be provided on a first come, first serve basis for approved projects, to the limit of grant funding for the task. Report on process, outcomes.

b. Convene FLEX Summits in Water Divisions 2-7 similar to the one held in Division One in February 2013 to communicate FLEX model contract and water court terms and conditions statewide. Report on process, outcomes.
c. Meet with other Alternative to Dry-Up teams/groups statewide (Super Ditch, Colorado River banking) to share information and findings, coordinate efforts. Report on findings, make recommendations regarding statewide implementation of ATM concepts.

2. **Index Based Pricing**.
   a. Study potential for index based pricing for water leases, based upon commodities markets or similar agricultural economic indicators. Hire economist(s) for number crunching and analysis, engage discussion groups from Divisions One, Two and Six including M&I and Agricultural interests to explore concept. Report on findings, propose alternative pricing mechanisms.

3. **Regional FLEX Discussion**.
   a. Convene Division One M&I, Ag and E/C users in Water Division One for a discussion of potential regional FLEX market implementation. Report on outcomes and recommend next steps.

Previous Studies
To the maximum extent possible, the results of any previous studies and investigation should be utilized and incorporated into the proposed program/project. The application for funding should include a brief summary of the results of previous studies and how they will be utilized.

Applicants were recipients of the Colorado Water Conservation Board sponsored 2008 and 2010 Competitive Grant Programs for Alternative Agricultural Water Transfer Methods, Arkansas and South Platte Basins. The focus of these programs was to examine alternative transfer methods for application to projects in the South Platte Basin, investigate the "FLEX Water Market" concept and produce model terms and conditions and a template agreement that could be used by agricultural producers, M&I users, etc. to evaluate and to implement alternative agricultural water transfers in the South Platte River basin and across Colorado.

The proposed grant study will focus on education, facilitation and implementation of the FLEX Water Market.

Need for Project: The findings of the 2008 study showed that a FLEX market could be a viable alternative to the traditional buy-and-dry method of transferring water. A model FLEX contract and model water court terms and conditions addressing the operational and technical aspects of implementation were created as a result of the 2010 study. Based on public feedback received during the Summit delivered as part of the 2010 study and the substantial number of inquiries received following the Summit, the Sponsors are becoming more aware of the potentially high demand for more information and assistance in exploring or implementing the FLEX market concept. In fact, we understand that some FLEX markets are being explored outside the scope of this request.

However, we see that the original grant simply identified the legal means to implement FLEX agreements and terms and promoted the concept to a local constituency of diverse groups including agricultural, municipal, environmental, and the legal and engineering consultants that typically develop water transactions. Most of the participants live and work in the northern portion of Division 1. The Sponsors certainly see the value of FLEX markets as a viable tool for meeting certain needs within diverse water plans, but many questions remain even among the Sponsors.

The Sponsors believe that CWCB assistance would be very valuable in implementing the FLEX market on a much larger scale in order to meet municipal and environmental needs and understand our competitive role in the face of rising value of water from the oil and gas industry. What is the proper scale for a FLEX market? What is the role of FLEX water market short term IWSP water, interruptible water, more permanent supplies? What is the demand for FLEX water? Who would manage FLEX water markets on a larger scale? Should this be water controlled by the State such as in-stream flows, water conservancy districts and municipalities, non-profit, private entity? How will conflicts in water availability be addressed? Should municipalities or partnerships of municipalities such as WISE set up their own FLEX markets separate from those that may cater to industry? The same should be pursued by environmental groups for conservation purposes.

Answering these questions will require a more regional scope and our team will convene diverse water interests from municipal and industrial, agriculture, and environment and conservation to scope and develop FLEX markets of statewide significance. This will require an economic analysis to determine ways to adjust compensation rates for water given the escalating value of water and volatile price for agricultural commodities.

We think our contractors should provide technical assistance and promote the FLEX market idea outside Division 1. Based on the response received from participants so far, we are highly encouraged that the FLEX market will be viable in other basins and water districts throughout the state. It may be the first Alternative to Agricultural Transfer Method program that is ready to be promoted and implemented outside the original study area. We hope the CWCB agrees and is ready to assist the Sponsors to promote this program.

A final report will include findings and input from participating sectors on the implementation of a FLEX Water Market.

2. Study Area/Service Area Description

The study area/service area is generally the geographic area that is the subject of the proposed program/project (include both the source of supply and location and type of new use). The description should include the following items:

a) A narrative description of the study area/service area including: the county, the location of towns or cities, topography, and locations of major surface and ground water features.

The areas of study will generally include Water Division One through Seven.

b) An area map showing each of the items above, as well as the locations of existing facilities, proposed project facilities and boundaries of lands involved in the proposed program/project.

n/a

c) Information regarding the irrigated lands that are involved in the program/project. This must include a tabulation of total irrigated acreage, description of cropping types, crop yields, and total average annual water diversions for existing agricultural lands.

The study is statewide in scope.

d) Information regarding the location of the new water use(s) that will be served by transferred water including the estimated number of users/taps and/or uses served.

The study is statewide in scope.

e) Socio-economic characteristics of the area such as population, employment and land use.

The socio-economic characteristics of the areas in the study vary. The area populations will likely be diverse and may include a FLEX Water Market participant by a metropolitan city with 100,000+ residents and an agricultural based participant. The resulting employment and land uses will be relative to the individual FLEX market established.

It is likely that the program results will provide a direct benefit to rural communities as it will provide a vehicle for agricultural producers to utilize their water as an asset to generate profit. Ditch companies will operate as economic units which will open a market for water as a commodity and provide direct, indirect and induced benefits in the surrounding rural economy. Cash flow generated will afford ditch companies and agricultural producers alternatives to an open-and-shut buy-and-dry scenario. The FLEX Water Market is designed to help optimize the use of a scarce resource.

3. Description of the Alternative Water Transfer Method

Please describe the type(s) of water transfers that will be examined/utilized (i.e., conceived transfer methods include, but are not limited to: 1) interruptible water supply agreements; 2) long-term agricultural land fallowing; 3) water banks; 4) reduced consumptive use through efficiency or cropping changes while maintaining historic return flows; and 5) purchase by end users with leaseback under defined conditions). In addition, please describe how the transferable consumptive use will be calculated and quantified, and how return flow patterns will be addressed/maintained.

Each method is described below along with details regarding calculation of transferable consumptive use and maintenance of return flows. The findings pertinent to this program regarding method of alternative agricultural transfer will be incorporated and detailed in the final report.

Rotational Fallowing (Long-term and Short-term)
Rotational fallowing is a program in which a portion of the irrigated lands included in the fallowing program are not irrigated in a particular year. For example, an individual irrigated field that is enrolled in the program may be held fallow in one of every four years. The actual frequency of fallowing a particular field depends on the structure of the program. A benefit of long-term rotational fallowing is that water rights can be maintained as productive, appreciating assets that generate revenue as integral components of farming and

ranching operations, thereby contributing to economic viability of farm and ranch operations and the vitality of their rural communities. Tools have been developed to ultimately provide data in such a near-real-time fashion, it could allow for easier management of shorter iterations of fallowing – for example, allowing farmers to change the acreage under fallowing much more frequently. Additionally, the status of the land can remain as irrigated, which benefits both the land owner with respect to land value and the public from a property tax perspective.

The State of Colorado has developed tools that are useful in quantifying the consumptive use of various crops and vegetation. StateCU, a consumptive use analysis tool developed by the State of Colorado, will be used to quantify the amount of consumptive use made available in a long-term rotational fallowing program. StateCU will also be used to quantify the on-farm return flows that need to be maintained. The Integrated Decision Support Group at Colorado State University has developed the Alluvial Water Accounting System (AWAS). This tool will be used to estimate lags associated with the rate at which return flows manifest themselves as streamflow accretions. The tools just described are commonly used in the South Platte River basin for analyses associated with change-of-use cases and augmentation plans.

Alternative Cropping

Various types of irrigated crops consume different amounts of water. If an agricultural producer historically grew crops that consumed relatively high amounts of water and then switched to irrigated crops that consume less water, the difference in consumption between the older and newer crops could be made available to other water users. This alternative may result in lower economic gains to the producer from the farming operations, but the decrease in economic gains could be mitigated from the sale or lease of the water made available from lower levels of consumption.

StateCU will be used to determine the difference in consumption among various crops under different hydrologic conditions. It is possible that return flows will remain the same or even be enhanced under alternative cropping scenarios. The degree to which on-farm return flows change will be quantified using StateCU and the impact on streamflows in the South Platte River will be evaluated using AWAS.

Deficit Irrigation

Deficit irrigation occurs when the water supplied to a crop is less than what is needed to satisfy the crop's full evapotranspiration needs. The primary impact of deficit irrigation is lower evapotranspiration and lower yields. However, lower yields can be partially offset by lower input costs (i.e. if less irrigation is performed, then fuel/electricity and maintenance costs are lowered). There are tools available (StateCU) that can quantify consumptive use under various levels of irrigation. The consumptive use difference between full irrigation and a level of deficit irrigation could be made available to other water users. Resulting yield reductions and potential economic losses (if reduced input costs do not fully mitigate impacts of deficit irrigation) could be offset by compensation for the transfer of this water to another water user.

Changes in consumptive use, changes in on-farm return flows, and streamflow impacts will be analyzed using the tools described above. Several tools are designed to look at a collective group of alternative applications, and based upon farmer input as to what he is willing to do, provide suggestions as to the best practices to implement on their individual fields, and then analyzes the information from individual farms "system-wide", to determine areas where blocks of CU water are available for alternative transfer. A tool named Water Optimizer (developed by the University of Nebraska) will be evaluated for use in estimating economic impacts to farmers from various levels of deficit irrigation. Relevant concepts from Water Optimizer could be

incorporated into the Business Plan that will be developed as part of this project.

Interruptible Water Supply Agreements
These agreements are arrangements whereby irrigation is suspended, and agricultural water is temporarily transferred to a different use. These types of arrangements typically require that irrigation not be suspended for more than 3 out of 10 years in order to protect the irrigation water rights. These agreements are commonly triggered by dry-year needs or drought recovery needs. Payments to agricultural producers for the right by another water user to suspend irrigation are generally dependent on the parties' discretion.

Changes in consumptive use, changes in on-farm return flows, and streamflow impacts will be analyzed using StateCU and AWAS in a similar manner as described above.

Increased Irrigation Efficiency

Claiming CU credits resulting from increased agricultural efficiency has remained controversial in Colorado primarily because of the potential for expansion of use and the difficulty in administering a change employing increased efficiency. The Team will consider this alternative agricultural water transfer method, however, with special consideration to legal and institutional constraints and to administration of this alternative to avoid expansion of use.

4. Program/Project Eligibility

Please describe how the proposed program/project meets each of the following eligibility requirements (please see Criteria and Guidelines for additional information regarding the alternative water transfer methods/strategies that qualify for funding). Note: If these requirements are addressed in other parts of the application you may simply reference the applicable section(s).

1. A description of how, if implemented, the proposed program/project will protect property and water rights.

   The proposed FLEX Market approach contemplates use of accepted State Engineer and Water Court approval processes, thereby providing protection to other water users.

2. Identified group(s) of agricultural users that are or may be willing to transfer a portion of their water and identified entity(s), group(s) or area(s) where the transferred water could or would be put to the new use and a description of the new use.

   Sponsors and the study team have received a substantial number of inquiries regarding the FLEX concept from agricultural, municipal and environmental/conservation users indicating interest in pursuing the concept for potential implementation.

3. The program/project must at a minimum conceptually describe the technical, institutional, and legal elements of the water transfer. Grant monies may be used to address one or more of these elements. If grant monies are not requested for all three elements, the grant applicant must describe how the applicant has or intends to address the elements, which are not included in the grant request, through other efforts.

This project will address the three elements of water transfers described above (technical, institutional, and legal issues).

4. If grant monies are proposed for use for legal assistance then the use of those funds shall be oriented toward advancing the knowledge of alternative agricultural water transfer methods and techniques; not for preparation of a specific water court case. The total requested funds for legal assistance shall not exceed 40 percent of the total grant request. In addition, grant monies proposed for use for legal assistance must be used to collaboratively address issues and concerns related to agricultural water transfer. Funds shall not be used to solely advance the cause of the project proponents.

   Legal assistance is below the 40% requirement of the application guidelines.

5. A minimum of a 10 percent cash match of total project cost (past expenditures and "in kind" can not be counted toward the 10 percent match).

   The project applicants and contributors provide the 10 percent cash match requirement. The present sponsors are engaged in discussions with other parties that may join as sponsors, and will update the grant application accordingly as these discussions progress.

5. Program/Project Evaluation Criteria

The following grant evaluation criteria will be used by the CWCB to evaluate and make recommendations to fund, partially fund or not fund a grant application. The criteria are aimed at advancing alternative transfer methods from the literature and studies to actual on the ground projects/programs that provide reliable water supply and sustain key elements of the agricultural area from which the water is transferred. The applicant should fully address and explain in detail in the application how, and the extent to which, the proposed project/program meets each of the criteria. However, it should be noted that the project does not have to meet all of the criteria to be eligible to receive funding and the criteria below are not listed in any order of important or priority.

a) The proposed project/program builds upon the work of former alternative water transfer methods efforts and addresses key areas that have been identified. For more detailed information on this work, please refer to the draft report: *Alternative Agricultural Water Transfer Methods Grant Program Summary and Status Update*, November 2012.

   This question is addressed in Part B. 1. of this application.

b) The proposed project addresses one or more key recommendation(s) in the report: *Alternative Agricultural Water Transfer Methods Grant Program Summary and Status Update*, November 2012.

   This question is addressed in Part B. 1. of this application.

c) Preference will be given to projects that provide additional matching resources in the form of cash, past expenditures and in-kind contributions that are in addition to the required 10% cash match.

Aurora Water plans to provide 5% in cash match the proposed study, subject to review and final approval upon CWCB approval of the grant proposal.

Ducks Unlimited plans to provide 5% in cash match, plus an additional sum of $3,778 in cash and $17,000 in in-kind services for the current proposed study, subject to review and final approval upon CWCB approval of the grant proposal.

d) The proposed project/program has the ability/potential to produce a reliable water supply that can be administered by the State of Colorado, Division of Water Resources.

The study group met with the State and Division engineers in the development of the model FLEX contract and Model Terms and Conditions, and plans to remain in communication with them as the FLEX discussion progress.

e) The proposed project/program produces information that is transferable and transparent to other users and other areas of the state (i.e., would provide an example "template" or roadmap to others wishing to explore alternate transfer methods).

The FLEX Water Market pilot project will be transparent and provide a valuable resource to others seeking to explore alternative methods.

f) The proposed project/program addresses key water needs identified in SWSI 2010 or as identified in a basin's needs assessment.

This proposal addresses the following key water needs:

a. The key water needs identified in SWSI. Sections 5.4.2 and 6.2.2 of the Phase 2 SWSI Report (CWCB, November 2007) identify the future water needs to be met by alternative agricultural water transfer methods as well as issues associated with such transfers including property rights and local issues, economic and social impacts and third party impacts. The proposed study – the CU survey, Model FLEX contract, and Model Terms and Conditions – will significantly advance the identified goal of supplying 90,000 acre-feet of firm yield in the South Platte and Arkansas basins through alternative agricultural water transfers while conserving irrigated agriculture to the greatest extent possible. (see Section 5.4.2 in the Phase 2 SWSI Report).

b. Logistics and dynamics associated with alternative agricultural transfer methods. For example, Section 3 ("Alternative Agricultural Water Transfer Methods for Traditional Purchase and Transfer") of the Phase 2 SWSI Report (CWCB, November 2007) identifies several potential issues and conflicts including: (a) localized socio-economic impacts (e.g., reduced property taxes), (b) lower assessed value of dryland as compared to irrigated cropland, (c) practical aspects of revegetation of irrigated cropland, (d) potential loss of wetlands, (e) engineering and legal uncertainties in practical implementation of alternatives

involving reduced consumptive use through efficiency or cropping while maintaining historic return flows. The objective of this project is to address these issues in a practical, tangible way through the development of the Model FLEX Contract and Model Terms and Conditions.

c. Agricultural water transfers using interruptible supply agreements, rotating agricultural transfers, water banks, etc. are detailed and discussed in the South Platte basin needs assessment (see Section 9.2.2 in Interim Water Supply and Needs Report for the South Platte Basin and Denver/South Metro Counties (CWCB, undated)). These alternatives will be addressed and considered in this project. Establishment of recharge wetlands may, in some ways, be similar to water banks and will be investigated as a way to develop necessary dependable water supplies. By leasing recharge credits from the wetland, the need for permanent transfer of water rights may be avoided.

g) The proposed project/program advances the preservation of high value agricultural lands. Value can be viewed as: the value of crops produced, the value the agriculture provides to the local community, and the value the agricultural area provides for open space and wildlife habitat.

The FLEX concept allows ag users to keep the most productive lands in farming, while fallowing marginal lands to provide FLEX CU to M&I and conservation users. In addition, the model allows the ag user to take lands in and out of production based on market conditions.

Wetland projects offer an added benefit to the landowner by introducing a habitat that can be leased to hunter's thereby creating a new enterprise that the agricultural producer can rely upon for additional income.

h) The proposed project/program addresses water quality, or provides other environmental benefits to rivers, streams and wetlands.

The FLEX approach emphasizes the use of recharge/wetland sites to manage deliveries and return flows.

Wetlands have multiple environmental benefits:

Ducks Unlimited and other conservation organizations involved in the project will ensure that municipal and agricultural parties implement wetlands conservation strategies to retime water for augmentation and add conservation strategies that protect the land and water values in perpetuity and increase overall land asset value and annual cash flow to the agricultural producer.

In addition, wetlands control floods by retaining floodwaters and then slowly releasing the waters later in the season. The heavy organic soils of wetlands act like sponges. Wetlands stabilize shorelines by slowing runoff. The plants and fibrous roots help hold soil and protect shorelines.

Wetlands also function in groundwater recharge. Some of the floodwaters that wetlands capture during storms percolate to groundwater. Often, groundwater and the water table are near the surface in a wetland. It is often difficult to separate ground and surface water in a wetland; they interconnect.

Wetlands can provide a major environmental benefit in cleaning up contaminated water. Water managers construct artificial wetlands to purify waste water from sewage treatment plants, from storm water runoff, and even from fish rearing ponds.

Wetlands reduce contaminants in surface water by acting as settling basins. Once the velocity of inflowing water drops, suspended particles begin to settle out and are deposited in the bottom of the wetland. This process also settles out contaminants such as phosphates, pesticides, and heavy metals attached to the particles. Insoluble, plant unavailable phosphate often binds with soil particles and precipitates out of the system in sediment. Additional sediment covers the contaminants, burying them, and removing them from the water. As a result, cleaner water flows from the wetland.

The heavy organic soils of wetlands have high levels of decaying plant organic matter. Organic matter provides many charged particles that attract and hold organic molecules such as pesticides. Thus, the organic material attracts and binds the dissolved pesticides to the wetland soil, removing the pesticides from the water.

Wetland soils support immense populations of microorganisms. Some of these microbes can use pesticides and other organic molecules as food.

Wetland plants are important in purifying water. Certain plants separate heavy metals from the water. Water parsley, hardback, sedges, duckweeds, waterlilies, bulrushes, and cattails all accumulate heavy metals. Rushes and bulrushes also can help break down organic pollutants.

Wetlands reduce some pathogenic bacteria after only 2 hours of contact with wetland plants.

In addition to the installation of recharge sites, the FLEX Model envisions that conservation and environmental stakeholders are likely to be purchasers of land and CU under existing ditch systems, thereby becoming vital market players, along with ag users and M&I users.

i) The proposed project/program increases our understanding of and quantifies program/project costs. This could include: institutional, legal, technical costs, and third party impacts.

All components of the project – statewide FLEX Summits, regional FLEX discussion, index study, and FLEX Team facilitation of implementation -- will advance CWCB understanding of practical issues and costs associated with implementation of alternatives to dry-up.

j) The proposed project/program does not adversely affect access to other sources of water (not subject to/participating in the program) where owners of these water rights may wish to pursue traditional transfer of their rights to other users.

The FLEX Partnership Model allows consumptive use water to be freely transferred from producers to M&I users or conservation interests, or alternatively, from M&I interests to conservation interests or any combination thereof. It recognizes the inherent value of the water rights and permits water rights owners to operate in a free market system and maximize value.

k) The proposed project/program provides a perpetual water supply for the new and/or alternate use and preserves agricultural production and/or helps sustain the area's economy from which the transfer is occurring.

The FLEX Model provides additional cash flow to the ag user, increasing flexibility, providing a hedging function, and improving the chances that farming remains a financially viable enterprise.

l) The quantity of water produced by the proposed project/program. Preference will be given to programs that can address larger water supply needs.

The proposal includes both a statewide education element and an intentional discussion of a potential regional Division One FLEX Market. Implementation of the FLEX concept has the potential to provide substantial water supplies to demands statewide.

m) Applicants are encouraged to develop projects demonstrating participation and/or support from a diverse set of stakeholders and interests.

The Sponsors successfully engaged 30+ diverse M&I, agricultural and environmental/conservation users in the Division One collaborative study funded in the last round, and expect increasing levels of participation as the effort expands into other water Divisions.

6. Statement of Work

Provide the proposed statement of work. On the following page there is an example format for the statement of work. You can use the example format or your own format, provided that comparable information is included. The statement of work should outline by task how the proposed program/project will be accomplished. It is important that the statement of work detail the specific steps, activities/procedures that will be followed to accomplish each individual task and the overall program/project and the specific products/deliverables that will be accomplished. The statement of work must include but not be limited to: task description, key personnel, budget, schedule and deliverables and the final report/project documentation upon completion of the water activity.

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.