August 3, 2012

Mr. Jacob Bornstein
Colorado Water Conservation Board
Water Supply Planning Section, WSRA Application
1580 Logan Street, Suite 200
Denver, CO 80203

Dear Mr. Bornstein:

Approximately 50% of the water used in the Metro area goes towards outdoor landscape irrigation, a beneficial use of water. Many state approved water conservation plans target increased efficiency in outdoor water use. As populations swell and as drought rears its ugly head, increased focus will be placed upon efforts to increase the efficient use of our most precious resource.

Some practitioners in the landscape and irrigation trades are quite diligent, while others do not practice their trades in a fashion that exudes water efficiency. DCWRA seeks Water Supply Reserve Account grant funding for a Landscape/Irrigation Training Pilot Program to move towards effective certification of landscape installation trades and irrigation system operators in order to increase the efficiency of outdoor water use, and eliminate waste in outdoor water use practices.

Currently, some standards for landscape and irrigation practitioner certification are too low. The Irrigation Association's (IA) training is the nationally recognized standard for water efficient practices. Unfortunately, the bulk of IA training is offered on-line, and only 5% of applicants are able to demonstrate the skill sets required to pass IA certification requirements. Rather than lowering standards and wasting water, this effort seeks to raise training levels in order to use water efficiently. Training under this program will pursue a more traditional Vo-Tech style approach delivered in Community College type settings. Once IA modules are honed, this training can be offered in Community College type settings throughout Colorado where outdoor water use is a large component of water demands.

Grant funding will first be used to survey current practices, and hone existing IA curriculum for Colorado applications. The resulting curriculum will include a robust consideration of proper selection of plants and clustering of plants according to water demands, utilizing resources developed by Colorado State University Extension Service, the Denver Botanic Gardens, and similar organizations. IA representatives will survey existing Colorado practitioners to ascertain what they know, what they think they know, and what they need to learn about water efficient irrigation system installation, operation, and maintenance.

A series of classroom sessions will be conducted to deliver the educational content, and tests will be administered and scored on this training. Field work will require hands on demonstration of skill sets at the level of competence needed to achieve certification. The demonstration of these skills

will also be tested and scored to IA standards. Certification will give consumers confidence that they are paying practitioners to deliver a high level of water efficient services.

In addition to tradespeople, land use authorities will be pursued for inclusion in the program. In the future, land use authority personnel should inspect for properly installed materials and systems. By enlisting land use personnel in this training, practitioners and inspectors will share the same knowledge base and expectations. The grant anticipates that the training program will be run three times in order to assemble and output a program that can be widely replicated in many Community College type settings.

While some states have moved to licensure of these trades, efforts have been fraught with peril. We seek to learn from the experiences of states such as California, Texas, North Carolina, and Florida in building an educated work force before considering next steps. In time, when an educated work force is available, an entity may require certification in order to work on a project owned by the entity. Later, certification may be required to work within the boundaries of an entity. If this pilot project is successful, in time, larger geographic requirements could move to consideration by municipalities, or counties, or regions, or even the State. The focus of this grant is not those long-term considerations, but to create a Vo-Tech style education program that can be delivered in local Community College type settings to raise the skill sets of practitioners in the landscape installation and irrigation system operation trades.

At the July 11, 2012 Metro Roundtable meeting, a motion was made, seconded and adopted to provide $5,004 from the WSRA Basin funds to support this project. The motion also endorsed the Douglas County Water Resource Authority's request for State-wide funds in the amount of $95,076. There was a quorum present at the July meeting, and the vote was only one short vote of unanimous – one member voted against the motion because they felt the application had not been provided to the Roundtable membership in advance of the meeting.

Attached please find the application and supporting materials for this program. If you require additional information, please contact me.

Sincerely yours,

Mark Koleber
Chair, Metro Roundtable

COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Landscape/Irrigation Training Pilot Program

Name of Water Activity/Project

Douglas County Water Resource Authority

Name of Applicant

Metro Basin Roundtable

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

Amount from Statewide Account:	$95,076
Amount from Basin Account(s):	$5,004
Total WSRA Funds Requested:	$100,080

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

1. Applicant Name(s): Douglas County Water Resource Authority

Mailing address: 4833 Front St., Unit B-256
Castle Rock, CO 80104-7901

Taxpayer ID#:

Primary Contact: Mark Shively Position/Title: Executive Director

Email: markshively@gmail.com

Phone Numbers: Cell: (303) 888-9782 Office: n/a

Alternate Contact: Jon Klassen Position/Title: President

Email: jklassen@highlandsranch.org

Phone Numbers: Cell: n/a Office: (303) 791-0430

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.

[X] 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.

3. Provide a brief description of your organization

DCWRA is a collection of water providers, municipalities, county government, and interested individuals pursuing water resource conservation, education, and public policy on water issues in the South Metro areas of Douglas and portions of Arapahoe Counties. All covered entities in the region have submitted water conservation plans approved by CWCB. In the past ten years per capita water use in the region has declined by 32%. DCWRA's K-12 "Water Ambassador" program is a 2012 winner of the Universities Council on Water Resources for education and public service. DCWRA is one of five entities in the United States to successfully complete an Appraisal level investigation under the Reclamation Rural Water Supply Program. The Appraisal Report was deemed exemplary and published in the Federal Register. Efforts have moved to the Feasibility level of investigation under the program. Funding for DCWRA efforts is provided by membership dues and grants.

4. The Contracting Entity and the Applicant are the same.

5.

[X] The Applicant will be able to contract with the CWCB using the Standard Contract

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

6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. There are no relevant TABOR issues that may affect the applicant.

Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application?

	Non-consumptive
	Agricultural
X	Municipal/Industrial
	Needs Assessment
	Education
	Other Explain:

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

This grant funds a pilot program to increase skill sets in the landscape installation and irrigation system operation trades. The pilot is largely educational, but in practice the trades will use water more efficiently in outdoor irrigation, which represents 50% of M&I water use.

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

X	Study		Implementation

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

0	New Storage Created (acre-feet)
0	New Annual Water Supplies Developed Consumptive or Nonconsumptive (acre-feet)
0	Existing Storage Preserved or Enhanced (acre-feet)
0	Length of Stream Restored or Protected (linear feet)
0	Length of Pipe/Canal Built or Improved (linear feet)
0	Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)
0	Area of Restored or Preserved Habitat (acres)
45 - 60	Other -- Explain: Trades people educated in pilot program

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

Latitude:	**39.38083**	Longitude:	**-104.85139**

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.

Irrigation represents 50% of the demand for water in the MBRT area. Most irrigation takes the form of watering landscapes. Some practitioners in the landscape and irrigation trades do a very good job, while some do not make best use of our most precious natural resource. Currently, two levels of certification exist in these trades. Rather than lowering the higher standard, this pilot project explores how to elevate applicant's skill sets so that they are able to pass certification at the higher standard, and then practice their craft at a level of higher water efficiency. Building inspectors should be included in this training, so that only properly installed landscapes and irrigation systems receive Certificates of Occupancy. While licensure is occurring in some states, this pilot effort using WSRA funds seeks to create an affordable program that can graduate a cadre of landscape and irrigation practitioners before pursuing licensure. Targets for this training including practitioners currently employed in the industry, those seeking employment in the industry, and those veterans returning from military service who, along the lines of the AWWA initiative, would like to "Get Into Water". WSRA funding under this grant will cover costs of partnership with the Irrigation Association to survey the current knowledge of practitioners, as well as what they think they know, and what they need to know ($10,000). Curriculum can be adapted from existing literature for vo-tech style training at community colleges ($25,000). Cost of facilities and instructors to conduct the first three classes of twenty students each (60 students total) through the training at a cost of $500 each is ($30,000). Materials cost is an additional ($3,000). Administrative and implementation costs are ($25,000). ($7,000) is requested to communicate results of the program, and move the program to status of regular offering at a local community college or colleges. Total grant funding request for the pilot program is **$100,080**. In-kind contributions are estimated at a value of $10,375 (survey of existing programs to avoid

duplication; engagement of industry resources, etc.). Cash contributions of $10,000 are also anticipated. At the completion of the pilot, a program can be offered for the cost of facilities, instructors, and materials, or about $500 per student. Training is aimed at two hours, two nights per week, for eight weeks, or sixteen classes.

Part III. – Threshold and Evaluation Criteria

a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes because there are no impacts to water rights.
b) The water activity underwent an evaluation and approval process and was approved by the Metro Basin Roundtable (MBRT). Information is included in a letter from the roundtable chair.
c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[1] The Basin Roundtable Chairs has attached an approval letter describing how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive needs assessments.
d) Matching Requirement: A **20 percent** match of the request from the Statewide Account is included, as well as a match of **5 percent** of the total grant amount from Metro Basin Funds.

Evaluation Criteria

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

a. The water activity addresses multiple needs or issues, including the needs and issues of multiple interests or multiple basins, i.e., any area in Colorado where outdoor landscape irrigation is prevalent.
b. Water providers, municipalities, county government, and interested individuals are represented in the application. The activity will promote cooperation and collaboration among traditional consumptive water interests in addressing water efficiency in the area's largest single use of water – landscape irrigation. The water activity is effective in addressing intrabasin or interbasin needs or issues, specifically the identified process of outdoor water efficiency.
c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, water resource conservation efficiency. The activity addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment by reducing per capita demand.

Tier 2: Facilitating Water Activity Implementation

d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. Receiving funding from the Account will make a significant difference in

the implementation of the water activity. The water activity will be able to move forward due to the inability of the applicant to obtain 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 because while the program will be piloted in one area, application of the completed pilot outcomes can be applied to all areas of the Front Range, and many other areas of the state.

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

f. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs by reducing per capita water demands associated with landscape irrigation in the urban and suburban areas.

g. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested because reduction of demand associated with landscape irrigation addressed the need to reduce the single largest source of demand in municipal areas.

h. The water activity is complimentary to or assists in the implementation of other CWCB programs, including water resource conservation activities.

Part IV. – Required Supporting Material

The water source impacted is Denver Basin Groundwater, and some surface diversions from the S. Platte River and its tributaries in the South Metro Denver area. The resource can be conserved by reducing demand for water used for landscape irrigation, the single largest demand placed on the resources.

1. There are no permitting issues. Related studies include SWSI, as well as studies of water use conducted by Denver Water, which point out the use of water to irrigate landscape. Others states approach certification or licensure of landscape installation and irrigation operation trades in various manners. These approaches are summarized as part of the in-kind research conducted by the local library district.

Exhibit A

Statement of Work

WATER ACTIVITY NAME – Landscape/Irrigation Training Pilot Program

GRANT RECIPIENT – Douglas County Water Resource Authority

FUNDING SOURCE – WSRA State and MBRT Grant Funds

INTRODUCTION AND BACKGROUND

Current and aspiring practitioners in the landscape installation and irrigation system operation trades will be taught how to learn and demonstrate rigorous certification requirements in a pilot program targeting a vo-tech style teaching approach offered in community college settings. Content will include use of water efficient plants appropriate for Front Range landscapes, how to cluster and install these plants, and how to properly irrigate landscapes. Content highlights include how to operate an irrigation system for optimum water efficiency, as well as regular maintenance of the system. This pilot will train 15-20 individuals per class. Three sessions will be included in the pilot, so as to hone content and curriculum for subsequent widespread distribution. When complete, the program will be appropriate for deployment of Vo-tech style teaching in community college settings throughout Colorado where irrigated landscapes represent a large proportion of water use. Surveys will determine what trades practitioners know, what they think they know, and what they need to know in order to pass the rigorous standards for certification. CWCB staff, MBRT members, water efficiency advocates, and local education providers will be kept abreast of efforts and outcomes of this pilot program.

OBJECTIVES

1) Survey and assess current knowledge base of practitioners in the landscape installation and irrigation system operations trades, what they know, what they think they know, and what they need to know in order to pass rigorous certification requirements.

2) Hone curriculum to train current and aspiring practitioners in a vo-tech style teaching approach that can be delivered at local community colleges throughout the Metro Area, Front Range, and Colorado communities where landscape irrigation is a significant component of water use.

3) Train participants so that they can demonstrate proficiency for certification in these tasks at a robust level (i.e., Irrigation Association standards).

4) Include land use authority inspectors in this program, so that installers and inspectors are pursuing the same outcomes with water efficiency and proficiency in relevant skill sets.

5) Communicate outcomes of the training program so that adoption in community colleges is easy to encourage and implement in the year following completion of this pilot.

TASKS

TASK 1 – Survey Existing Practitioner Knowledge Base

Description of Task – Survey and assess what current trades practitioners know, what they think they know, and what they need to know in order to demonstrate ability to achieve certification of skills sets along standards set by the Irrigation Association.

Method/Procedure – Staff of the Irrigation Association interview current practitioners and observe them practicing their trade.

Deliverable – Survey results, which will advise how to hone curriculum to meet identified needs.

TASK 2 – Hone Curriculum

Description of Task – Based upon survey assessments, produce content that takes trades people from current abilities to ability to demonstrate skills capable of certification at Irrigation Association standards.

Method/Procedure – Irrigation Association staff will develop and write appropriate curriculum.

Deliverable – Documents (a manual and accompanying PowerPoint presentation of the curriculum) will be written and delivered by the Irrigation Association staff.

TASK 3 – Train Participants

Description of Task – Trainers will deliver program materials to class participants.

Method/Procedure – Irrigation Association staff (class 1) and then trained trainers (class 2 and 3) will deliver program material to class participants.

Deliverable - Participants will complete training program and demonstrate ability for certification at Irrigation Association standards.

TASK 4 – Include Land Use Authorities

Description of Task – Solicit inspectors at Land Use Authorities to participate in training program.

Method/Procedure – DCWRA contractor will solicit participation by land use authority staff.

Deliverable – Land use authority personnel will participate in training program.

TASK 5 – Communicate Outcomes of Pilot Program

Description of Task - DCWRA contractor will perform outreach to CWCB staff, education facilities, water efficiency advocates, DCWRA members and MBRT members.

Method/Procedure –E-mails will be sent to appropriate E-mail distribution list, with outcomes posted to DCWRA and appropriate websites. Face to face presentations will be made to interested audiences of appropriate size.

Deliverable – Create and distribute reports and PowerPoint presentation of training program pilot project; make face to face presentations.

TASK 6 – Administration and Reporting

Description of Task - Facilitate Irrigation Association survey, participant training, inclusion of land use authority personnel, communication of outcomes, and assemble reports to CWCB.

Method/Procedure – DCWRA will hire contractor to perform services.

Deliverable – Deliver program reports to CWCB describing activities, efforts, and results.

REPORTING AND FINAL DELIVERABLE

DCWRA 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, DCWRA 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

Matching Funds: $10,000

	Labor	Direct	Total Costs
Task 1 Survey	$14,167		$14,167
Task 2 Curriculum	$29,167	$3,080	$32,247
Task 3 Train	$11,807	$22,440	$34,247
Task 4 Land Use	$4,167		$4,167
Task 5 Communicate	$10,086		$10,086
Task 6 Administer, Report	$5,166		$5,166
In-Kind Contributions:			$10,375
Total Costs:			$120,455

Titles

	Survey Conductors	Curriculum Developers	Instructors	Administrator	Graphics/ Designer		Clerical	Total Costs
Hourly Rate:	$150	$150		$70	$125	$50	$35	
Task 1 $14,167	66.67				33.33			
Task 2 $29,167		166.67			33.33			
Task 3 $11,807				109.14	33.33			
Task 4 $4,167					33.33			
Task 5 $10,086					76.71	10		
Task 6 $5,166					33.33		28.57	
Total Hours:	66.67	166.67			248.00	10	28.57	
Cost:	$10,000.00	$25,000.00		$7,640	$30,420	$500	$1,000	$74,560

Other Direct Costs

Item:	Copies	Manuals	Equipment/ Supplies	Building/Custodial	Total
Units (No.):	1000	. 60	TBD		
Unit Cost:	.08	$50	Various		
Task 1					
Task 2	$80	$3,000			$3,080
Task 3			$13,620	$8,820	$22,440
Task 4					
Task 5					
Task 6					
Total Units:	1000	60	Various	36	$25,520
Total Cost:	$80	$3,000			

In-Kind Contributions

Project Personnel:	Librarian	DCWRA Executive Director
Hourly Rate:	$50	$125
Task 1	100	43
Task 2		
Task 3		
Task 4		
Task 5		
Task 6		
Total Hours:	100	43
Total Cost:	$5,000	$5,375

SCHEDULE (2 Years)

Task	Start Date	Finish Date
1	Upon NTP (or beginning of Irrigation Season)	60 days after start of Task 1
2	Completion of Task 1	Completion of Task 1 + 45 days
3	Completion of Task 2 (or end of Irrigation Season)	Completion of Task 2 + 15 months
4	3 Months after Completion of Task 2	12 Months after start of Task 4
5	Completion of Task 4 + 45 days	90 days after start of Task 5
6	NTP	90 days after completion of Task 5

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 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: Douglas County Water Resource Authority

Project Title: Landscape Irrigation Training Pilot Program