



**COLORADO**

**Colorado Water  
Conservation Board**

Department of Natural Resources

1313 Sherman Street  
Denver, CO 80203

P (303) 866-3441  
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

**TO:** Colorado Water Conservation Board Members

**FROM:** Kirk Russell, P.E., Chief, Finance Section

**DATE:** November 16-17, 2016 Board Meeting

**AGENDA ITEM:** 9c. 2017 Projects Bill  
Non-Reimbursable Project Investments

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### Introduction

The Finance Committee reviewed all of the Construction Fund - Non-Reimbursable Investment (NRI) applications on September 19, 2016 in Edwards, Colorado. The Committee recommended full Board review of the applications listed in this Agenda Item. If approved, these NRIs will be written into the 2017 Projects Bill. Board Memos and Data Sheets for each project are included. A formal presentation will be made for each project/program.

(1) Weather Modification Permitting Project	Statewide	\$ 175,000
(2) Tech Assist. For Federal Irrigation Improvement Cost-sharing	Statewide	\$ 500,000
(3) Colorado Water Loss Control Initiative	Statewide	\$ 1,100,000
(4) Non-Potable Water Reuse Regulation Funding	Statewide	<u>\$ 260,000</u>
	Total	\$ 2,035,000

### Introduction

The Board shall make a decision on each of the items above separately.





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James Eklund, CWCB Director

**TO:** Colorado Water Conservation Board Members

**FROM:** Joe Busto, Weather Modification Program Coordinator,  
Watershed Protection and Flood Mitigation Section

**DATE:** November 16-17, 2016 Board Meeting

**AGENDA ITEM:** 9c. 2017 Projects Bill  
Non-Reimbursable Project Investments Presentations  
(1) Weather Modification Permitting Program

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### Introduction

The CWCB has had grants for winter cloud seeding since 2004. Colorado River downstream water users have been matching CWCB funding since 2007. To date the CWCB has provided \$1.5M and the Lower Basin has provided \$1.5. Weather modification is one of the three legs of the stool for the Colorado River drought contingency plan along with extended reservoir operations and demand management.

The CWCB WM budget has been \$175,000 for the last seven years. Staff is requesting this funding for grants to operations, new equipment, and help with evaluations and studies as directed by the 2012 Weather Modification Rules and Regulations. The Lower Basin matches the CWCB dollar for dollar. The most important part of this work is that the Idaho Power Company and the Desert Research Institute have agreed to help Colorado grow and develop as well as import state of the art equipment.

The CWCB has helped by bringing in remote machines to Winter Park, the Grand Mesa, and near Mesa Verde. However, there are still 105 low elevation generators in operation. Modeling studies are suggested in the 2012 DNR Weather Modification Rules to evaluate program design. One was completed for the Front Range Water Council program. There is a scientific means to retire machines, import newer machines, and focus on areas with high cloud seeding potential. This funding has been matched with other funding with support from the new DNR rules to do modeling and climatology studies to differentiate where cloud seeding generators are well or poorly sited.

### Staff Recommendation

Staff recommends the Board request the General Assembly appropriate \$175,000 from the Construction Fund to the Department of Natural Resources for use by the CWCB for the Weather Modification Program.





## Weather Modification Permitting Program

Colorado Water Conservation Board

November 2016 Board Meeting

The CWCB has had grants since 2004. Water Manager sponsored programs were developed after the drought of early 2000s. State-to-state agreements were signed in 2007 to provide grants. Each year the CWCB distributes grants from the CWCB, New Mexico Interstate Stream Commission, Southern Nevada Water Authority, Central Arizona WCD, and California Six Agency Committee and reports on the expenditures. The CWCB funding gives staff leverage to match the pledged support of the Lower Basin dollar for dollar. The goals are to remake Colorado's programs and deploy state of the art and industry standard equipment. This will make our programs better.

At right is the Idaho Power ice nuclei generator design. It has been 17 years in development and is considered the best design in the field. They have agreed to help us at the CWCB and provide these machines for our program. Also pictured at right is a white remote sensing unit called a radiometer. It takes vertical columns of atmospheric information that is similar to a weather balloon launch but with continuous data every seven minutes. Several cloud seeding programs in other states have purchased one of more of these to remove the guess work and stop seeding the whole storm system so they can focus on wetter cloud conditions. They will save lots of money by not wasting silver and confining operations to periods of abundant liquid water.

Typically each year about \$1M is spent on cloud seeding with \$175,000 or 18% from the CWCB and \$175,000 or 17% from the Lower Basin and New

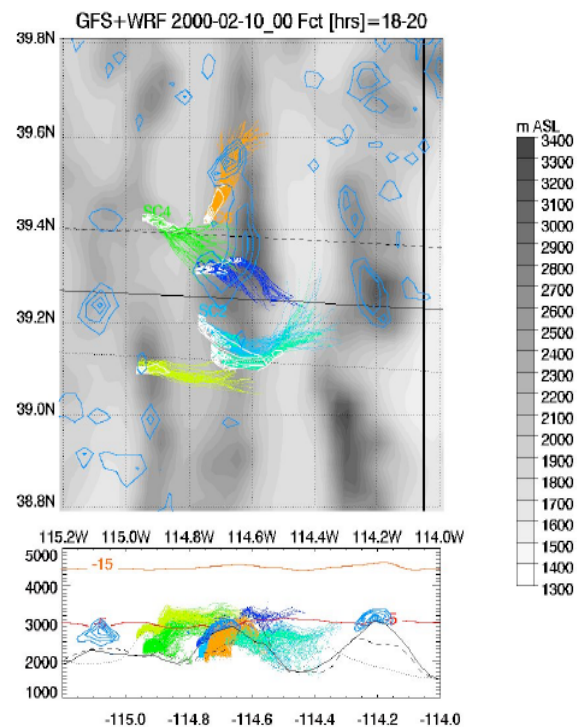
Mexico. The work of CWCB providing grant and technical assistance and equipment upgrades is a part of the augmentation goals of the Colorado River Seven Basin states and has been ongoing since 2007.

Plans for winter 2015-16 include a plume dispersion modeling study in the Central Mountains Program to try and discern which generators are well sited or not and where to put new remote generators at higher elevations. Desert Research Institute will operate remote operated generators at Winter Park, and a DRI remote generator at Telluride, and the near Mancos, Colorado will be operated by the local contract Western Weather Consultants. The radiometer that is being leased to own by the CWCB will be at Gunnison all winter. Also two new Idaho Power remotes are being imported and tested by the City of Grand Junction which was funded as a mix of BRT, CWCB, and Lower Basin funding. The rest of the funding is grants to the traditional contractor run programs.

Pictured at right is a top view and cross section of particle dispersion modeling. When coupled to a weather model it can faithfully represent the seeding process and help us evaluate the existing program designs and refine their designs for increased efficiency. This is suggested in the new WM rules meant to empower local sponsors to seek "independent" evaluations of their programs.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$1M+ annually
<i>NRI Funding Request:</i>	\$175,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Grants, Equip. & Evals
<i>Type of Grantee:</i>	Grants to Sponsors

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	Colorado, Gunnison, & SW





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Denver, CO 80203

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

**TO:** Colorado Water Conservation Board Members

**FROM:** Carlee Brown, Chief, Interstate and Federal Section  
Steve Miller, Water Resource Specialist

**DATE:** November 16-17, 2016 Board Meeting

**AGENDA ITEM:** 9c. 2017 Projects Bill  
Non-Reimbursable Project Investments Presentations  
(2) Technical Assistance for Federal Irrigation Improvement Cost-Sharing

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### Introduction

The Colorado Water Plan identifies the opportunities for and benefits to be achieved through improving irrigation infrastructure. While the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. By providing grants for the technical assistance to prepare applications we have improved the success rate of Colorado water user applying for these federal funds. In addition, by providing funds for engineering design and environmental compliance activities by the successful applicants we have helped accelerate the actual implementation of projects, and preserved federal grant funds for project construction. Similar grant opportunities have been funded by the Board and used successfully for these purposes in 2014 and 2015 (HB14-1333, sec. 9 – Salinity TA Grant Program, \$250,000 and SB15-253, sec. 7 – USDA-RCPP technical assistance, \$500,000).

Eligible federal programs include the USDA Regional Conservation Partnership Program [RCPP] which is offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program which is only available in the Gunnison Basin below the Aspinall Unit.

These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

### Staff Recommendation

Staff recommends the Board request the General Assembly appropriate \$500,000 from the Construction Fund to the Department of Natural Resources for use by the CWCB to provide Technical Assistance Grants for Federal Irrigation Improvement Cost-sharing Programs.





## Technical Assistance Grants for Federal Irrigation Improvement Cost-Sharing

Colorado Water Conservation Board  
November 2016 Board Meeting

The Colorado Water Plan identifies the opportunities for and benefits to be achieved through improving irrigation infrastructure. While the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. By providing grants for the technical assistance to prepare applications we have

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These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$500,000
<i>NRI Funding Request:</i>	\$500,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Grant Program
<i>Type of Grantee:</i>	State Government

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins





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Denver, CO 80203

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

**TO:** Colorado Water Conservation Board Members

**FROM:** Kevin Reidy, Water Conservation Technical Specialist

**DATE:** November 16-17, 2016 Board Meeting

**AGENDA ITEM:** 9c. 2017 Projects Bill  
Non-Reimbursable Project Investments Presentations  
(3) Colorado Water Loss Control Initiative

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### Introduction

The goal for the Colorado Water Loss Control Initiative is for participating water utilities to learn how to apply the American Water Works Association's (AWWA) M36 water loss and control methodology to their water system and to achieve a complete and transparent (as measured by Level 1 validated scores) water loss audit. Water loss was identified in SWSI 2010 as a significant factor in the M&I gap.

### Staff Recommendation

Staff recommends the Board request the General Assembly appropriate \$1,100,000 from the Construction Fund to the Department of Natural Resources for use by the CWCB for the Colorado Water Loss Initiative.

### Discussion

*The CWCB will continue to provide funding, technical support, and training workshops to assist water providers in improving the management of their water systems. For example, in the next year, the CWCB will fund several regional training workshops about using the American Water Works Association M36 Methodology for Water Audits and Loss Control.*

As part of the coordinated statewide water loss control training program, the CWCB will convene a steering committee which will include (but not limited to) personnel from water utilities, AWWA, Water Research Foundation (WRF), and the Colorado environmental community. This steering committee will assist in creating and reviewing the RFP for the project and assist with the management of the training process as it moves forward. At present, WRF, AWWA, various utilities and the environmental community are highly supportive of this initiative.

Informed by the Georgia and California experiences but adapted for Colorado, the Initiative will consist of a two-track approach: a more advanced approach for the roughly 15-30 "early adopters" (agencies that have already worked through the audit process at least once using the AWWA Free Water Audit Software) and a "ground-up" approach starting with the basic principles for "new learners." The training program, which will span 24-30 months, will allow for an iterative approach with each utility to foster progressive learning that has been proven effective in the state of Georgia and is being used in California.

Although, there will likely be two training tracks with different starting points, the trainings will follow similar approaches. The following is an initial draft of the basic process and program elements:

- 1) Validation Webcast and Workshops
  - a. Learn the basic concepts of the methodology through a webinar and are prepared for 1<sup>st</sup> round of workshops,



- b. Participants will take knowledge from webinar and carry out "data inquiry homework assignments"
  - c. Return with collected data and participate in first round of workshops that will further the knowledge of basic concepts of the methodology
    - i. These full day workshops will teach foundational water audit concepts and tools, provide a review of the AWWA Free Water Audit Software and its functionalities, and review data validity scoring.
  - d. After the initial webinar and workshops, participants will return to their utility and conduct a water audit
- 2) Audit Basics Technical Review
- a. Participant will submit audit to consultant team and the team will:
    - i. Conduct individual calls with each utility to provide a one on one question and answer session, to evaluate and confirm the participant's understanding and proficiency in preparing their water audit,
    - ii. Provide feedback to questions/problems/issues that participant encountered during their water audit preparation.
- 3) Validation Workshop
- a. Participant will attend 2<sup>nd</sup> set of workshops that will provide further assistance with:
    - i. Data collection and validation techniques
    - ii. Recommendations received during the audit basics technical review
    - iii. Answering any questions related to the preparation of the audit
- 4) Data Validation Level 1
- a. Participants will meet online for 60-90 minutes with consultant team to achieve:
    - i. Follow up on recommendations provided during the validation workshop.
    - ii. Review and gauge successful completion of the data gathering and population of their water audit.
    - iii. Review grades, data validity scores, identify obvious errors and anomalies in the metrics through interview with the audit preparation team.
      - 1. The methodology will cover a range of analysis from initial screening of common input errors to deeper levels of revealing hidden errors to accurate assignment of input data grades. Most importantly, the methodology will be the same for each participating utility, identify data quality issues and data grading amendments, and provide recommendations for improved data validation, data collection and validity scoring.
- 5) Analysis of Final Water Audit Submissions and Report
- a. Consultant will review the final water audit submissions and prepare a summary report to:
    - i. Summarize the work performed and results achieved.
    - ii. Review and analyze the final water audit submissions of the NL group
    - iii. Provide summary statistics on utility participation in each phase of the project.
    - iv. Identify where the greatest need/opportunity for data validation steps and real and apparent loss control was observed.

Water loss control has been identified by the drinking water industry as a major topic of interest. With multiple states providing statewide water loss control training and having identified the AWWA M36 methodology in Colorado's Water Plan, the time is right to create statewide training on the industry standard for water loss control.



This initial scope outlines a comprehensive program of training, technical review and assistance, and a Level 1 validation for approximately 165 urban water systems across Colorado to attain an effective level of competency with the American Water Works Association (AWWA) water balance and audit concepts, and the free AWWA Water Audit Software. The AWWA methodology is considered the industry standard for water loss control and management. This 24-30 month program includes multiple “touch points” for establishing principles & practice and reinforced understanding, through two potential tracks: “Early Adopters” and “New Learners”.

P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$1,100,000
<i>NRI Funding Request:</i>	\$1,100,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Grant Program
<i>Type of Grantee:</i>	State Government

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	Various
<i>Drainage Basin:</i>	All Basins

The goal for the Colorado Water Loss Control Initiative is for participating water utilities to learn how to apply the methodology to their water system and to achieve a complete and transparent (as measured by Level 1 validated scores) water loss audit. Water loss was identified in SWSI 2010 as a significant factor in the M&I gap and, as outlined in Colorado’s Water Plan, the CWCB will:

***Support water management activities for all water providers:*** The CWCB will continue to provide funding, technical support, and training workshops to assist water providers in improving the management of their water systems. This will include the use of techniques such as water budgets, smart-metering, comprehensive water loss management programs, savings tracking and estimating tools, and improved data collection on customer water uses. For example, in the next year, the CWCB will fund several regional training workshops about using the American Water Works Association M36 Methodology for Water Audits and Loss Control.

As part of the coordinated statewide water loss control training program, the CWCB will convene a steering committee which will include (but not limited to) representation from water utility personnel, AWWA, Water Research Foundation (WRF), and the Colorado environmental community. This steering committee will assist in creating and reviewing the RFP for the project and assist with the management of the training process as it moves forward. At present, WRF, AWWA, various utilities and the environmental community are highly supportive of this initiative.

Informed by the Georgia and California experiences but adapted for Colorado, the Initiative will consist of a two-track approach: a more advanced approach for the roughly 15-30 “early adopters” (agencies that have already worked through the audit process at least once using the AWWA Free Water Audit Software) and a “ground-up” approach starting with the basic principles for “new learners.” The training program will allow for an iterative approach with each utility to foster progressive learning that has been proven effective in the state of Georgia and is being used in California.



11/1/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format.

Colorado's Water Plan highlights water use efficiency as a major strategy in meeting the water supply/demand gap with a goal of 400,000 acre feet of demand reduction by 2050. In order to assist with closing the gap, all water providers will be called upon to optimize their water systems and minimize real losses in these systems. A statewide training on the AWWA M36 Water Audits and Loss Control is a logical step to contribute to the 400,000 acre foot goal while assisting water providers identify economically recoverable water losses in their water systems.

Sincerely,

A handwritten signature in black ink, appearing to read 'Laura Lynch', with a stylized, flowing script.

Laura Lynch  
Town of Breckenridge  
Water Division Manager



500 South 4<sup>th</sup> Avenue Brighton, CO 80601

October 25, 2016

Mr. Kevin Reidy  
Colorado Water Conservation Board  
1313 Sherman St., RM 721  
Denver, CO 80203

Dear CWCB Board:

Having attended one of the pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I want to voice my support for the expansion of comprehensive water loss training opportunities statewide.

The participant feedback heard during the pilot workshop I attended, it was evident that there is still a large need and desire for deeper training on these topics in Colorado. Follow up training programs should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

The implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management, and standardization of water loss reporting to the AWWA M36 format.

Colorado's Water Plan highlights water use efficiency as a major strategy in meeting the water supply/demand gap with a goal of 400,000 acre feet of demand reduction by 2050. In order to assist with closing the gap, all water providers will be called upon to optimize their water systems and minimize real losses in these systems. Statewide training on the AWWA M36 Water Audits and Loss Control is a reasonable step to aid in reaching the 400,000 acre foot goal while assisting water providers identify economically recoverable water losses in their water systems.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dawn M. Hessheimer", is written over a light blue horizontal line.

Dawn M. Hessheimer  
Water Resources Specialist



The Voice of the Colorado Water Conservation Community

October 28, 2016

***Regarding the potential for additional M36 Training and Support in CO***

Dear CWCB Board:

Having organized, co-sponsored, and attended the 5 pilot workshops in September 2015, Colorado WaterWise supports the expansion of comprehensive water loss training opportunities statewide. Our members and stakeholders endorse additional training in this practice.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow-up training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format.

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Sincerely,

A handwritten signature in black ink, appearing to read "Alyssa Quinn".

Alyssa Quinn, Co-Chair

A handwritten signature in black ink, appearing to read "Ruth Quade".

Ruth Quade, Co-Chair



October 25, 2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow up training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,

A handwritten signature in black ink that reads "Richard A. Clark". The signature is fluid and cursive, with the first name "Richard" and last name "Clark" clearly legible.

Richard A. Clark, P.E.

Senior Engineering Advisor

6201 S. Gun Club Road | Aurora, CO 80016

Ph: 303.693.3800 | Fx: 303.699.1228 | [www.eccv.org](http://www.eccv.org)

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*Sustaining our community by providing safe, reliable water*





**East Larimer County Water District**

10/25/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,  
East Larimer County Water District

A handwritten signature in blue ink that reads "Melissa Tremelling". The signature is fluid and cursive, with a large, stylized "M" and "T".

Melissa Tremelling  
Administrative Manager



# TOWN OF FREDERICK

401 Locust Street • P.O. Box 435 • Frederick, CO 80530-0435

Phone: (720) 382-5500 • Fax: (720) 382-5520

Website: [www.frederickco.gov](http://www.frederickco.gov)

10/25/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,

Sarah Higgins, EI





City of  
Golden

**PLANNING**

TEL: 303-384-8097

**PUBLIC WORKS**

TEL: 303-384-8151

1445 10<sup>TH</sup> ST. GOLDEN, CO 80401

FAX: 303-384-8161

[WWW.CITYOFGOLDEN.NET](http://WWW.CITYOFGOLDEN.NET)

October 25, 2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

There is still a large need and desire for deeper training on these topics in Colorado. Water utilities would benefit from a follow on training program that focused on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format.

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Sincerely,

Anne Beierle  
Deputy Director  
Public Works Department

10/25/2016

Dear CWCB Board:

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From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,

Kevin Hartley CLIA, CLT  
Water Conservation Specialist  
City of Greeley Water & Sewer  
(970) 336-4228  
kevin.hartley@greeleygov.com

# CITY OF LAS ANIMAS

532 Carson Avenue  
P.O. Box 468  
Las Animas, Colorado 81054  
FAX No. (719) 456-1210

Chief of Police (719) 456-1313  
City Clerk & Treasurer (719) 456-0422  
Director of Public Works (719) 456-2571  
Municipal Utilities (719) 456-1621

10/26/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,



Ken Wagner  
Director of Public Works



**Department of Water and Power**  
Service Center • 200 N. Wilson Avenue • Loveland, CO 80537  
(970) 962-3000 • (970) 962-3400 Fax • (970) 962-2620 TDD  
[www.cityofloveland.org](http://www.cityofloveland.org)

October 25, 2016

**Re: Additional M36 Training and Support**

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by Colorado WaterWise the Colorado Water Conservation Board in September of 2015, we support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow-up training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format.

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Sincerely,

Lindsey Bashline  
Customer Relations Specialist  
Loveland Water and Power

Michelle Erickson  
Technical Specialist  
Loveland Water and Power



10/25/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,

A handwritten signature in blue ink, appearing to read 'TW', followed by a long, sweeping horizontal line that extends to the right.

*Tricia Williams*

Water Resources Engineer

South Adams County Water and Sanitation District

303-588-4814 Cell

720-206-0578 Office

7400 Quebec Street

Commerce City, Co 80022



## WESTMINSTER

10/25/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format.

Colorado's Water Plan highlights water use efficiency as a major strategy in meeting the water supply/demand gap with a goal of 400,000 acre feet of demand reduction by 2050. In order to assist with closing the gap, all water providers will be called upon to optimize their water systems and minimize real losses in these systems. A statewide training on the AWWA M36 Water Audits and Loss Control is a logical step to contribute to the 400,000 acre foot goal while assisting water providers identify economically recoverable water losses in their water systems.

I thought I knew a lot about reducing and measuring water loss prior to the M36 training. The training did show me ways that I needed to improve my accounting procedures used in quantifying water loss and targeting areas to focus attention. As more conservation measures are implemented to save water in Colorado, reducing water loss becomes the next biggest bang for the buck that water providers can invest in.

Sincerely,

Stu Feinglas

Senior Analyst

City of Westminster

[sfeinglas@cityofwestminster.us](mailto:sfeinglas@cityofwestminster.us)

303-658-2386

City of Westminster  
Department of  
Public Works  
and Utilities

4800 West 92nd Avenue  
Westminster, Colorado  
80031

303-658-2400  
FAX 303-706-3927





10/25/2016

Dear CWCB Board:

Having attended one of the 5 pilot workshops sponsored by the Colorado Water Conservation Board in September of 2015, I support the expansion of comprehensive water loss training opportunities statewide.

From participant feedback received during the pilot program, it is evident that there is still a large need and desire for deeper training on these topics in Colorado. A follow on training program should focus on deeper application of the foundational concepts from the pilot program. This should include conducting the water audit, data validation and loss component analysis steps with each system using their own data.

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Sincerely,

Brandon Bernard  
Water Department Manager  
Widefield Water and Sanitation District  
719-464-2051



10/31/2016

Dear CWCB Board:

I was among the attendees at one of the pilot water loss training workshops sponsored by the Colorado Water Conservation Board in September of 2015. This workshop laid out the fundamentals of water loss management, and it was also clear there is still a need and desire for more in depth training. I support the expansion of comprehensive water loss training opportunities statewide.

In order to achieve the substantial conservation goal of 400,000 acre feet set forth in the State Water Plan, active water conservation programs like this are essential. Implementation of a statewide training program would cultivate widespread adoption of best management practices for water loss, better resource management and standardization of water loss reporting to the AWWA M36 format. A statewide training on the AWWA M36 Water Audits and Loss Control is a logical step while assisting water providers identify economically recoverable water losses in their water systems.

Sincerely,

Amelia Nuding  
Sr. Water Resources Analyst  
Western Resource Advocates



P 303.347.6100 F 303.730.0851

[www.WaterRF.org](http://www.WaterRF.org)

6666 W. Quincy Ave., Denver CO 80235-3098

Dear xxx,

The Water Research Foundation (WRF) is a member-supported, international, nonprofit organization that sponsors research to enable water utilities, public health agencies and other professionals to provide safe and affordable drinking water to consumers. WRF receives financial support from 31 utilities in Colorado (see below). WRF is pleased to offer this letter of support for Colorado Water Conservation Board's proposal for training and education for Colorado water utility staff on distribution system water audits, collecting and analyzing leak data, and creating water loss control programs. These activities will help Colorado achieve its vision of good water stewardship.

Water loss control programs are an ideal way to reduce leaks, improve revenue recovery, and optimize management of the water distribution systems. Since 2001, WRF spent \$2M on 8 projects to advance the water loss control research including pilot testing the concepts at water utilities and developing tools to implement the concepts. For example, we developed spreadsheet tools for determining cost effective solutions for reducing leakage. We are currently developing a guidance manual for constructing water audit data validation programs to ensure that water audits definitions and methods are understood and that the appropriate data are being used. Most of this water loss control work is free to the public. Some of these reports are in our top ten list for popularity, either for that year or all time.

Our emphasis is on funding research to meet the challenges of our nation's water utilities. We do not have the resources to provide training and education at the state level. WRF is pleased to support CWCB's proposal to provide water loss control training and education. We are happy to help CWCB in this endeavor, such as providing printed copies of select reports.

Please direct questions regarding this letter to Maureen Hodgins at 303.734.3465 or [mhodgins@waterrf.org](mailto:mhodgins@waterrf.org).

Sincerely,

Traci Case  
Research Services Manager

cc: Maureen Hodgins

**Colorado Members**

Bancroft-Clover Water & Sewer District	Lakewood	CO
Battlement Mesa Metropolitan District	Parachute	CO
Bear Creek Water & Sanitation District	Lakewood	CO
Castlewood Water & Sanitation District	Denver	CO
City of Aurora Utilities	Aurora	CO
City of Boulder	Boulder	CO

City of Broomfield	Broomfield	CO
City of Englewood Water Department	Englewood	CO
City of Fort Collins Utilities	Fort Collins	CO
City of Golden Water Department	Golden	CO
City of Littleton	Littleton	CO
City of Longmont	Longmont	CO
City of Thornton	Thornton	CO
City of Westminster	Westminster	CO
Colorado Springs Utilities	Colorado Springs	CO
Consolidated Mutual Water Company	Lakewood	CO
Crestview Water & Sanitation District	Denver	CO
Denver Water	Denver	CO
Green Mountain Water & Sanitation District	Lakewood	CO
Ken Caryl Ranch Water & Sanitation District	Littleton	CO
Lakehurst Water & Sanitation District	Littleton	CO
North Washington Street W & S District	Denver	CO
Platte Canyon Water & Sanitation District	Littleton	CO
Pueblo Board of Waterworks	Pueblo	CO
Southeast Englewood Water District	Denver	CO
Southgate Water District	Centennial	CO
Southwest Metropolitan Water & Sanitation District	Littleton	CO
Town of Estes Park	Estes Park	CO
Wheat Ridge Water District	Wheat Ridge	CO
Willowbrook Water & Sanitation District	Lakewood	CO
Willows Water District	Centennial	CO



## COLORADO

### Colorado Water Conservation Board

Department of Natural Resources

1313 Sherman Street  
Denver, CO 80203

P (303) 866-3441  
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

**TO:** Colorado Water Conservation Board Members

**FROM:** Kirk Russell, P.E., Finance Section Chief

**DATE:** November 16-17, 2016 Board Meeting

**AGENDA ITEM:** 9c. 2017 Projects Bill  
Non-Reimbursable Project Investments Presentations  
(4) Non-Potable Water Reuse Regulation Funding

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#### Introduction/Background

Evaluating regulations to foster reuse of water supplies while protecting public health and the environment was critical action identified in Colorado's Water Plan. The water plan states that Colorado Department of Health and Environment (CDPHE) is committed to working with stakeholders to ensure that health and environment are protected while water reuse expands. However, the CDPHE needs additional funding to support expanding safe and environmentally friendly water reuse. CDPHE regulates non-potable reuse through Regulation #84 (Reclaimed Water Control Regulation) and Regulation #86 (Graywater Control Regulation). CDPHE does not have regulations for indirect or direct potable reuse. CDPHE has indicated a need for \$300,000 to advance the efforts to update regulations and support planning efforts for water reuse. The CWCB has proposed to utilize \$40,000 from the current year's Severance Tax Operational Account to begin this effort in the first half of Calendar year 2017.

CWCB's funding will support 0.5 FTE of existing staff resources for completing the following activities:

- Updating Regulation #84 to include new uses of non-potable water including toilet flushing, irrigation for edibles crops, and livestock wash down facilities. Funding for this activity would support managerial oversight of updating the regulation and working with stakeholders a part of a Colorado Water Quality Forum Work Group.
- Updating Regulation #86 to address potential legislation. CDPHE anticipates that legislation will be passed during the upcoming legislation that will require updates to Regulation #86 associated with research uses of graywater. Funding for this activity would support updating the regulation and interacting with stakeholders.
- Supporting CWCB's planning activities associated with indirect and direct potable reuse. CWCB has provided ongoing funding for a planning project regarding regulation of indirect and direct potable reuse. Funding for this activity would support managerial and staff participation in this planning effort. This funding request does not include development of regulation for indirect or direct potable reuse.

CDPHE has requested \$375,000 for calendar years 2017-2019 from the Colorado Water Resource and Power Development Authority (CWRPDA) to support reuse regulations. The CWRPDA funding will support hiring one term-limited FTE to support updating of Regulation #84.

#### Staff Recommendation

Staff recommends the Board request the General Assembly to transfer \$260,000 from the Construction Fund to the Department of Public Health and the Environment for use on the Non-potable Water Reuse Regulation efforts.





## Non-Potable Water Reuse Regulation Funding

Colorado Water Conservation Board

November 2016 Board Meeting

The Colorado Water Plan identified the evaluation of regulations to foster reuse of water supplies while protecting public health and the environment as a critical action. The Colorado Department of Health and Environment (CDPHE) is in need of funding to support expanding safe and environmentally friendly water reuse.

CDPHE regulates non-potable reuse through Regulation #84 (Reclaimed Water Control Regulation) and Regulation #86 (Graywater Control Regulation). CDPHE does not have regulations for indirect or direct potable reuse. CDPHE has indicated a need for \$300,000 to advance the efforts to update regulations and support planning efforts for water reuse. The CWCB will utilize \$40,000 from the current year's Severance Tax Operational Account Grant Program to jump start this effort in the first half of Calendar year 2017.

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P R O J E C T D E T A I L S	
<i>Project Cost:</i>	\$300,000
<i>NRI Funding Request:</i>	\$260,000
<i>Funding Source:</i>	Construction Fund
<i>Project Type:</i>	Program Funds
<i>Type of Grantee:</i>	State Government

L O C A T I O N	
<i>Benefits:</i>	Statewide
<i>Water Source:</i>	N/A
<i>Drainage Basin:</i>	All Basins