Proposal for Water Efficiency Grant Award

Best-practices and Technical Guidelines for
High-Performance, Comprehensive, Water Efficiency Retrofit Projects in Colorado

Western Resources Advocates (WRA) respectfully submits this proposal to the Colorado Water Conservation Board (CWCB) for consideration of an award from the Water Efficiency Grant Program Funds to develop best-practices and technical guidelines for water efficiency retrofits for the State of Colorado's performance contracting program. This proposal matches the purpose and intent of the Grant Program by improving the nature and breadth of water conservation activities at the local level, and furthering private sector assistance to local entities to improve urban conservation. WRA is a non-profit 501(c)(3) conservation organization based in Boulder, CO, and for over fifteen years our Healthy Rivers Program has included as a primary purpose proactive engagement in the policy, science, and economics of water resource conservation.

There is a significant, untapped potential for the private sector to help boost water conservation savings in public buildings in Colorado. The new guidelines and best-practices WRA plans to develop can accelerate as much as 6,840 acre-feet of water savings per year in public buildings, generating up to $8.5 million in savings annually. **Over the next year, WRA—combining technical knowledge, policy experience, and existing relationships with state agency staff and the performance contracting industry—can lead this effort to increase large-scale investments in water retrofits in public buildings.**

A key objective of the project is for the state's performance contracting program and the performance contracting industry (in a public-private partnership) to address market barriers to water conservation by standardizing and improving auditing, and monitoring and verification of water measures in high-performance, comprehensive, retrofit projects in public buildings. The potential beneficiaries of the project include all public buildings, and the communities they serve, across the state of Colorado. The project would also provide next generation market-based tools that can assist the state in meeting its 2015 Greening of State Government Executive Order water conservation targets.

Colorado's water challenges are real. Accounting for passive conservation savings, state data indicates the Front Range alone will need an additional 428,000 acre-feet of water per year by 2050 to meet future M&I demands. In response, Colorado's Water Plan sets a measureable objective to achieve 400,000 acre-feet of M&I water conservation by 2050. Reaching this target will require a sustained and coordinated effort between the state, water providers, city planners, private industry, conservation groups, and other stakeholders.

Performance contracts can play a pivotal role in helping finance state and local government efforts to lead-by-example and demonstrate how water efficiency retrofit projects can provide community, educational, environmental, and economic benefits. Through them, public entities can shift the work, and financial risk, of comprehensive water and energy efficiency retrofit projects to the private sector; the latter designs and implements the projects and guarantees the resulting utility bill savings will exceed the public entities' repayment costs. Performance

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P.O. Box 64128
Tucson, AZ 85728

Colorado
2260 Baseline Rd.
Suite 200
Boulder, CO 80302

Nevada
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Suite I
Carson City, NV 89703

New Mexico
409 East Palace Ave.
Unit 2
Santa Fe, NM 87501

Utah
150 South 600 East
Suite 2AB
Salt Lake City, UT 84102

contracts have been used successfully to save energy and promote renewable energy generation but, up until now, far less attention has been paid to the water sector. Water efficiency retrofit projects (e.g., replacing cooling towers or water-intense outdoor landscapes) are key to meeting Colorado's growing water challenges.

We respectfully request $46,000 to support the development and implementation of the best-practices and guidelines explained below.

1. Entity seeking grant funding

Western Resource Advocates
2260 Baseline Rd., Suite 200
Boulder, CO 80302

Primary Contact:
Jorge Figueroa
jorge.figueroa@westernresources.org
720-763-3747

Jorge Figueroa, Senior Water Policy Analyst at WRA, will be the main point of contact for this project. He will be the project manager and will be responsible for fulfilling grant requirements, including submittal of progress reports and the final report. Additional research and technical support will be facilitated by Amelia Nuding, Senior Water Resources Analyst.

Drew Beckwith, Water Policy Manager, and Bart Miller, Healthy Rivers Program Director, will provide guidance and oversight of this project throughout the course of its development.

2. Other entities assisting with the project

We have created a strong coalition of industry and state decision-makers, all of which are ready to advance this project. Potential and interested partners for this project include:

Colorado Energy Office's Performance Contracting Program and their designated third-party consultant for public sector clients. The best-practices and guidelines will be principally developed with, and for, Colorado's state performance contracting program. WRA will also work closely with the state performance contracting program to ensure that their third-party consultants assist local communities and their respective performance contractors in the implementation of the best-practices and technical guidelines throughout the project cycle of a performance contracting project. We have developed this overall project in consultation with state performance contracting program staff.

Linda Smith and 9Kft Strategies in Energy. Linda co-founded the national Energy Services Coalition (ESC) the major and only organization that works as a public-private partnership to increase performance contracting uptake in the West. She designed and managed the Colorado

Energy Office performance contracting program that is considered a model state performance contract program for the US. Her work with the state of Colorado transformed the local retrofit market and achieved $200 million in projects. She has also worked for 8 years as a consultant with the federal performance contracting program. Linda is a confirmed senior advisor for the project.

Energy Services Coalition (ESC). The ESC is a public-private partnership promoting the benefits of, providing education on, and serving as an advocate for, the widespread use of performance contracting in public and private facilities. The ESC provides a unique forum in which all stakeholders can work together to address and overcome barriers which are limiting the effective use of performance contracts. The ESC-Colorado chapter will be the forum used to receive stakeholder comments on, and buy-in for, the best-practices and technical guidance protocols.

Contractor. We plan to hire a contractor with significant experience in the development of monitoring, verification, and commissioning protocols and guidelines for state performance contracts (e.g. Nexant; Kate McMordie Stoughton, Water Efficiency Engineer, Pacific Northwest National Laboratory; Charles Kurnik, Uniform Methods Project Manager, National Renewable Energy Laboratory).

3. Project Background

Colorado faces a conflict between an expanding population and scarce water and budgetary resources. With climate change, drought in our region is expected to increase significantly in both severity and frequency. Long-term capital improvements that make communities and infrastructure resilient to severe climate change impacts are critical for Colorado communities.

Budgets are tight for most government agencies and water utilities. Large, capital-intensive water-efficiency retrofit projects that increase resiliency are difficult to initiate if the project depends solely on limited public funds. These circumstances provide an opportunity to develop a fruitful performance contracting regime by leveraging federal and state funds with private capital to finance large, comprehensive, water efficiency retrofit projects in public buildings that pay for themselves.

This proposal targets the root of the issue: the state performance contract program of Colorado (inside the Colorado Energy Office) is interested in developing best-practices and technical guidance for comprehensive water efficiency retrofit projects in public buildings. The state performance contracting program vigorously promotes retrofit projects, sets market standards that ensure high performance, and protects clients by ensuring a safe and smooth process for public facility owners. By successfully infusing this program with new *water-related* standards and best-practices, we can influence literally hundreds of retrofit projects in the future and realize significant water conservation benefits for the foreseeable future.

Specifically, we will work with top experts specializing in performance contracting with state programs, and lead development of policies and practices for water retrofits that best support the

priorities of the state's performance contracting program and the CWCB. Because the Colorado Energy Office's performance contracting program does not have a dedicated water conservation staff, WRA's expertise is essential.

In brief, WRA will:

- Identify specific water measures, for which new best-practices, monitoring and verification protocols will be developed;
- Assist in developing best-practices and protocol guidance documents;
- Facilitate an inclusive, transparent outreach process for performance contracting industry feedback, buy-in, and education;
- Provide technical knowledge in scoping calls and monthly status meetings with state staff.

PROJECT FOCUS: FACILITATING WATER SAVINGS IN PUBLIC BUILDINGS

A substantial amount of money can be saved by reducing water and energy use in public facilities through efficiency improvements via performance contracts. Achieving these savings in public buildings while improving air quality, reducing greenhouse gas emissions, and conserving water is a win-win strategy. Local governments and school districts with budget constraints can demonstrate that fiscal responsibility and environmental stewardship can go hand in hand.

Problem: Although the typical performance contract in a public building includes both energy and water retrofits, the standards used in a comprehensive retrofit project to quantify, verify, and ensure savings are much less well-defined for water measures than for energy measures. This can result in significant water saving opportunities missed, and less transparency and confidence in the quantification and verification of the performance guarantees, and of the comprehensive retrofit project itself.

Solution: Develop water-related best-practices and technical guidance for water efficiency retrofit projects in public buildings that meet the needs identified by Colorado's state performance contract program.

Impact: WRA estimates that adoption of the proposed best-practices and technical guidance by Colorado's state performance contract program can help accelerate a 20% reduction of water use in public buildings, (saving as much as 6,840 acre-feet of water annually), and save public facilities up to $8.5 million in water bills annually.

More clearly defined water-related best-practices and technical guidelines for state performance contracts will save money, water, and energy, and help the state prioritize future program efforts. Benefits include:

- Increasing the reliability and marketability of comprehensive retrofit projects for developers, lenders, and customers by ensuring service companies and clients more accurately assess *and* realize the total available water and energy savings.
- Optimizing the savings and operation of water retrofits, by providing clear guidelines that ensure water retrofits are installed, and maintained, with their design's intent.

- Using more water savings to fund and expand energy retrofits (and vice-versa) while making public buildings more drought-resilient.
- Reducing energy costs and greenhouse gas emissions because of the significant amount of energy associated with heating water.

4. Project Goals

Through prior engagement with the state of Colorado's performance contracting program and other experts, the project has the following goals to boost investments in water efficient retrofits in public buildings. We have several partners to help us reach the goals, as discussed above.

This project will result in comprehensive guidance for water efficiency retrofits for public buildings in Colorado through:

- best-practices for auditing and for high-impact water efficiency strategies;
- new measurement and verification protocol guidelines;
- new commissioning guidelines to ensure installed water efficient equipment is operated and maintained with its design's intent, equivalent to existing best-practices and standards for energy efficiency measures.

5. Advancing the Mission and Objectives of the CWCB and its Programs

The goals of this project support the intent of the CWCB to work with public agencies and the private sector to increase meaningful water conservation in the state by:

i. Improving the nature and breadth of water conservation practices at the local level.

As of 2015, Colorado's performance contracting program portfolio includes 188 executed projects, totaling $487 million in investments. It ranks #4 nationally in total investments and #6 in investments per capita (Energy Services Coalition's Race to the Top). Perhaps even more importantly to Coloradans, projects are benefitting communities across 75% of Colorado counties, guaranteeing $30.8 million in annual utility costs savings.

The ultimate objective is the adoption of the best-practices and technical guidelines that will result in a model, next-generation state performance contract program in which water is not an afterthought, but rather a core component of Colorado's state performance contracting program. WRA will work to export this model to neighboring states.

WRA assumes that improvements in water audits and more reliable monitoring, verification, and commissioning of water measures will result in more reliable and cost-effective, comprehensive water efficiency retrofit projects in public buildings, which will also be more attractive to private capital and that realize a wider spectrum of water saving opportunities.

ii. Increasing the impact and effectiveness of technical assistance provided by the state to local communities.

The state performance contracting program provides third-party advice and technical assistance, free of charge, to local communities signing a non-binding Memorandum of Understanding with the Colorado Energy Office. An important feature of this project includes working closely with the state performance contracting program to ensure that its third-party advisors and technical assistance programs assist local communities and their respective performance contractors in the implementation of the best-practices and technical guidelines throughout the project cycle of a performance contracting project. As a result of this project, there should be a measurable acceleration in private sector funding for water efficiency improvements.

6. Scope of Work

As noted above, the purpose of this project is to implement comprehensive guidance for water efficiency retrofits for public buildings. Our overarching strategy to reach that end is one of close collaboration with the state performance contracting program, their third party consultants (who provide technical assistance to local communities), and with the performance contracting companies.

Task I. Advisory Committee Meetings (10/3/2016 - 5/4/2017)
WRA will convene an advisory committee composed of subject matter and policy experts that will meet three times within the first six months of the project to provide advice during the scoping and development of the best-practices and technical guidelines.

Task II. Best-practices and Technical Guidelines Project Scoping (10/3/2016 – 1/24/2017)
Between October and January, WRA will facilitate three 2-hour iterative meetings with the state performance contracting program to scope out the project (e.g., identify and select the specific measures covered by the best-practices and guidelines, select project consultants, set dates for iterative status calls, etc.)

Task III. Best-practices and Technical Guidelines Development (10/6/2016 – 9/8/2017)
WRA will work closely with the state performance contracting program and project consultants ("Project Team"), providing water efficiency (technical and policy) support, research, and coordination throughout completion of the best-practices and technical guidelines. WRA will facilitate regular status calls with the state performance contract staff and project consultant to share updates, identify and address any important issues, and ensure the project delivers the best-practices and technical guidelines on time and meets the needs and interests of the CWCB and the state performance contracting program.

Task IV. Stakeholder Input and Buy-In of Best-practices and Technical Guidelines
(5/19/2017 – 9/8/2017)
The draft best-practices and technical guidelines will be sent to the industry and stakeholders for input and buy-in in May of 2017. WRA will send a final report with best-practices and technical guidelines to the state performance contract programs after a 2-month comment period, and an additional 2 months of iterations (to incorporate the comments) from the state and industry.

Task V. Reporting.
The 50% completion progress report – estimated to be submitted by March 31, 2017 – will include (i) a list of the advisory committee members; (ii) summary of the monitoring and verification and commissioning protocol development (including the methodology, key recommendations from the advisory committee, detailed protocol development timeline, and selected water measures; and (iii) draft best-practices for selected water measures. The 75% completion progress report – estimated to be submitted by June 30, 2017 – will provide a summary of the best-practices and protocol development process. It will also include the draft protocols that will be under the commenting period process at the time of submission. A final report will be submitted by September 29, 2017, that will contain the best-practices and protocols for the selected water measures, and suggestions for the CWCB, Colorado Energy Office, and other stakeholders to best advance these practices in Colorado communities.

7. Project Budget

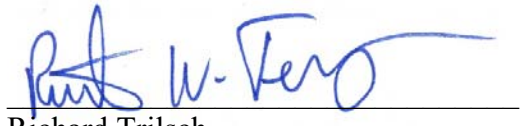
The total project budget is $139,350, with $46,000 to be reimbursed through this request and the remaining amount matched in-kind by the project team and other cash contributions.

	Jorge Figueroa	Amelia Nuding	Drew Beckwith	Bart Miller	Contractors	Cost ($)	Rosin Foundation*	CWCB Grant Request
Hourly Rate ($/hr)	$100	$100	$125	$150	$160			
	HOURS							
Task I. Advisory Committee Meetings								
Outreach	24		2					
Iterative Research, Agenda Development and Coordination	60	12	2	2	6			
Meetings	6	6			6			
Task I sub-total	**90**	**18**	**4**	**2**	**12**	**$13,520**	**$12,520**	**$1,000**
Task II. Best-practices and Technical Guidelines Project Scoping								
Outreach	18							
Iterative Research, Agenda Development and Coordination	48	12	3	2	6			
Meetings	6	6			6			
Task II sub-total	**72**	**18**	**3**	**2**	**12**	**$11,595**	**$8,830**	**$2,765**
Task III. Best-practices and Technical Guidelines Development								
Best-practices Development	40	40	5		5			
Audit Guidelines and Protocol Development	96	8	4		180			
Outreach and Coordination	96							
Meetings	36				36			
Task III sub-total	**268**	**48**	**9**		**221**	**$68,085**	**$52,000**	**$16,085**

Task IV. Stakeholder Input and Buy-In								
Stakeholder Outreach and Coordination	128	8						
Stakeholder Comments: Review and Supporting Research and Writing	128	32	8		16			
Presentations	24	24			24			
Task IV sub-total	**280**	**64**	**8**		**40**	**$41,800**	**$20,000**	**$21,800**
Task V. Reports								
50% Progress Reporting	10	2	2	1				
75% Progress Reporting	10	2	2	1				
Final Report	10	2	2	1				
Task V sub-total	**30**	**4**	**4**	**3**		**$4,350**		**$4,350**
Project Total Hours	**740**	**152**	**28**	**7**	**285**			
Dollars	**$74,000**	**$15,200**	**$3,500**	**$1,050**	**$45,600**	**$139,350**		
Total Rosin Fund Support							**$93,350**	
Total CWCB Request								**$46,000**

*The Rosin Fund has awarded WRA with grant monies representing about 67% of the total grant budget to conduct the scope of work (Tasks I-V).

Signature of the individual with the authority to commit the resources of the entity seeking the Grant program monies:



Richard Trilsch
Vice President of Finance and Administration
Western Resource Advocates

Date: 10/17/2016

Appendix A. Letters of Support

COLORADO
Energy Office

Aug. 16, 2016

Mr. Ben Wade, Water Conservation Coordinator
Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman St, Rm 721
Denver, CO 80203

Dear Mr. Wade,

The Colorado Energy Office is pleased to support Western Resource Advocates' proposal submission for the Colorado Water Conservation Board Water Efficiency grant application.

Performance contracts are a proven tool for financing a holistic, comprehensive approach to public facility improvements in Colorado. Since Colorado established its EPC Program in the mid-1990s, more than 140 public jurisdictions have worked with an energy services company to identify over $29 million in annual utility savings through a technical energy audit. Because each technical energy audit is a high-quality, "investment-grade" audit, these guaranteed utility savings have been leveraged in Colorado to attract over $500 million in capital construction funds.

WRA has set the foundation for the success of this project after leading a two-year effort with performance contracting industry stakeholders and the Colorado Energy Office's energy performance contracting program.

By addressing priority issues identified by our energy performance contracting program, we believe that Western Resource Advocate's CWCB Water Efficiency grant proposal would benefit the communities in Colorado.

We are pleased to have the opportunity to support this proposal.

Sincerely,

Jeffrey Ackermann, Director
Colorado Energy Office

1580 Logan St., Suite 100, Denver, CO 80203 P 303.866.2100 F 303.866.2930 www.colorado.gov/energy

City of Boulder
Public Works

September 12, 2016

Mr. Ben Wade
Water Conservation Coordinator
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

RE: Letter of Support for Water and Performance Contracts CWCB Water Efficiency Grant Application

Dear Mr. Wade,

The Utilities Division of the City of Boulder's Department of Public Works fully supports the initiative of the Colorado Energy Office and Western Resource Advocates to accelerate water efficiency measures in public buildings via performance contracts.

The City of Boulder's Water Conservation Program dates back to the mid 1960's and since the early 2000's has focused on a long term goal of a 20% reduction in overall water demand. One way of achieving that goal has been through programs that support the installation of efficient fixtures in new buildings and upgrades to existing buildings. In 2013, the city received an EPA WaterSense award for its commitment to efficient water use, including programs focused on installation of efficient building fixtures.

In 2009, the City of Boulder partnered with the Colorado Energy Office on a performance contract that received the first-ever American Council for an Energy-Efficient Economy (ACEEE) and Alliance for Water Efficiency (AWE) award as an "exemplary" model used to save both energy and water at 66 city facilities.

A CWCB Water Efficiency grant to develop best practices and technical guidance for water efficient retrofits in state performance contracts would provide an important financing tool to advance water efficiency at the local level.

Sincerely,

Jeff Arthur
Director of Public Works for Utilities