



# COLORADO WATER CONSERVATION BOARD



## WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: 01/29/2016

Advancing Direct Potable Reuse to Optimize Water Supplies and Meet Future Demands

### Name of Water Activity/Project

WaterReuse Colorado

### Name of Applicant

Metro - \$25,000  
South Platte - \$15,000  
Colorado - \$15,000  
North Platte = \$2,500

Amount from Statewide Account:

\$131,455

Amount from Basin Account(s):

\$57,500

Total WSRA Funds Requested:

\$188,955

### Approving Basin Roundtable(s)

*(If multiple basins specify amounts in parentheses.)*

FEIN: 68-0235568 (Contracting Agent)

### Application Content

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### Required Exhibits

- A. Statement of Work, Budget, and Schedule
- B. Project Map
- C. As Needed (i.e. letters of support, photos, maps, etc.)

### Appendices – Reference Material

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

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### **Instructions**

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCB). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCB staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCB website at: <http://cwcb.state.co.us> Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: <http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf>. In addition, the applicant should also refer to the [Supplemental Scoring Matrix](#) applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests .

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Craig Godbout - WSRA Application  
Colorado Water Conservation Board  
1313 Sherman St., Room 721  
Denver, CO 80203  
[Craig.godbout@state.co.us](mailto:Craig.godbout@state.co.us)

If you have questions or need additional assistance, please contact Craig Godbout at: 303-866-3441 x3210 or [craig.godbout@state.co.us](mailto:craig.godbout@state.co.us).

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

1.	Applicant Name(s):	WateReuse Colorado		
	Mailing address:	c/o Laura Belanger Western Resource Advocates 2260 Baseline Road, Suite 200 Boulder, CO 80302		
	FEIN #:	68-0235568 Contracting Agent		
	Primary Contact:	Laura Belanger	Position/Title:	WateReuse CO President
	Email:	laura@westernresources.org		
	Phone Numbers:	Cell: 303-215-9122	Office:	720-763-3718
	Alternate Contact:	John Rehring	Position/Title:	Project Engineer
	Email:	JRehring@carollo.com		
	Phone Numbers:	Cell: 303-489-0786	Office:	303-635-1220

### 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.
- ☐ 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.

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3. Provide a brief description of your organization

WaterReuse Colorado is the state section of the national WaterReuse Association. WaterReuse Colorado is comprised of a broad range of reuse professionals, including the state's preeminent voices in water reuse – municipal water providers, users of recycled water, engineering consultants, regulators, and researchers. Our primary objectives include supporting the mission of the WaterReuse Association<sup>1</sup>, advocating for legislation and regulations that facilitate appropriate water reuse, promoting safe and effective reuse throughout Colorado, and improving public understanding of water reclamation.

<sup>1</sup> The mission of the national WaterReuse Association is to educate the public on the importance of reusing water and to advocate for policy, laws and funding to increase water reuse in communities across the United States.

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

The Contracting Entity is the national WaterReuse Association of which WaterReuse Colorado (the applicant) is the state section. The WaterReuse Association is internationally-recognized as a leader on alternative water supply development. It is the go-to organization for applied research, policy guidance and educational tools on water reuse as well as the principle influencer of public opinion, lawmakers and policymakers on guidance, regulations, and projects related to water reuse. Since its founding in 1990, the WaterReuse Association has advocated for policies, laws and funding at the state and federal level to increase the practice of recycling water. Seven state sections work with state lawmakers and regulatory agencies to advance state policies on water reuse. During the last two decades, WaterReuse has conducted more than \$60 million in research to solve real-world problems that may be barriers to expanding water reuse here and around the world. The research has been used to ensure protection for human health and the environment, improve operational efficiency of water treatment facilities, and increase public acceptance of recycling water. While the science is clear that recycling water is safe, misinformation has contributed to community resistance for water reuse projects. To address that challenge, WaterReuse is expanding its efforts to support members in communicating to their customers and constituencies. Their membership of water utilities, businesses, government agencies and not-for-profit organizations is dedicated to recycling water to ensure communities have a safe, reliable and cost-effective supply of water, which is necessary to sustain a high standard of living and robust economy.

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

☒ 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.

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6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

WaterReuse Colorado and the WaterReuse Association do not anticipate any TABOR issues.

### Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

<input type="checkbox"/>	Nonconsumptive (Environmental or Recreational)	
<input type="checkbox"/>	Agricultural	
<input checked="" type="checkbox"/>	Municipal/Industrial	
<input type="checkbox"/>	Needs Assessment	
<input type="checkbox"/>	Education	
<input type="checkbox"/>	Other	Explain: <input type="text"/>

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

While the primary purpose of this project is providing reliable, sustainable municipal and industrial supplies, there are environmental, recreational, and agricultural benefits as well. Direct potable reuse (DPR) may allow communities to better optimize existing and future reusable supplies which will alleviate some of the need to secure additional supplies from other sources. While reuse decreases municipal returns flows, which clearly impacts streamflows and downstream users who have historically relied on those flows, potable water reuse, when implemented effectively, can essentially double the demand that an acre-foot of legally reusable water is able to meet. Stretching each acre-foot of water supply further through potable reuse has environmental and recreational benefits when it results in fewer new stream diversions. It also decreases pressure on agriculture and the West Slope as sources of new water supplies. When water is transferred from the West to East Slope and from agriculture to municipalities (through alternative agricultural transfer methods or more traditional purchases), potable reuse fully recognizes the value of this water by ensuring it is used efficiently and effectively.

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

<input checked="" type="checkbox"/>	Study	<input type="checkbox"/>	Implementation
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4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

<input type="text"/>	New Storage Created (acre-feet)
<input type="text"/>	New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)
<input type="text"/>	Existing Storage Preserved or Enhanced (acre-feet)
<input type="text"/>	Length of Stream Restored or Protected (linear feet)
<input type="text"/>	Length of Pipe/Canal Built or Improved (linear feet)
<input type="text"/>	Efficiency Savings (acre-feet/year OR dollars/year – <b>circle one</b> )
<input type="text"/>	Area of Restored or Preserved Habitat (acres)
58,000+	Other -- Explain: The project is designed to pave the way for direct potable reuse

(DPR). Resulting DPR combined with indirect potable (IPR) and non-potable reuse will help ensure communities are able to optimize on 58,135 AF of reuse Identified Projects and Processes (IPPs) in the South Platte Basin Implementation Plan (SPBIP), where much new reuse will occur. DPR and IPR can produce a higher “yield” than non-potable reuse, due to reusable return flows from indoor uses. Additional yield opportunities also exist (though there is some overlap with the reuse IPPs) associated with agricultural transfer IPPs (19,900 AF identified in the SPBIP) and transbasin IPPs (58,000 AF identified in the SPBIP) which are typically, though not always, reusable. Additional reuse IPPs and opportunities occur in other basins.

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

Latitude:

Longitude:

No map provided. The project has statewide implications. As a result of reuse (including DPR), most of which will occur across Colorado’s Front Range, less new water will need to be secured from other sources including the West Slope and agriculture.

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.

The water activity proposed is three-pronged and geared towards: establishing the regulatory environment to facilitate DPR, facilitating public acceptance, and adapting existing tools to help Colorado utilities evaluate if reuse, including potable, is a viable and cost-effective option.

While some indirect potable reuse occurs, much existing municipal reuse in Colorado is for non-potable

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irrigation and some commercial and industrial use. Reuse volumes gained from non-potable reuse are limited due to seasonality and demand constraints and the typical need for a separate delivery infrastructure. To optimize reusable supplies to meet future demands, potable reuse will play an important role, using proven, reliable technology to purify recycled water and safely supplement communities' drinking water supplies. Potable reuse provides greater flexibility than non-potable reuse, can meet year-round demands, and is more drought-resistant and can be more cost-effective than other water supply options. It can produce a higher "yield" than non-potable reuse, due to reusable return flows from indoor uses. Advances in treatment technologies, national implementation and public perception, combined with water supply limitations around the West are leading a rapidly-growing number of communities to consider DPR. And while indirect potable reuse (IPR) projects have already been implemented in Colorado, it is anticipated that DPR will become the most feasible option for some communities considering potable reuse.

Task 1: DPR Regulatory and Institutional Framework for Colorado: This task will document the bases for development of potential DPR regulations in Colorado that are protective of public health and safety and reflective of best management practices. Water providers' interest in potable water reuse is rapidly increasing as a potentially cost-competitive approach for sustainably meeting water demands. However, there is no framework for regulatory development or project-specific approvals specifically designed for direct potable reuse in Colorado. The project will utilize ongoing research and the approaches and experience in other Western States to develop a proposed Colorado-specific approach to DPR project approvals and/or regulations that describes appropriate treatment, monitoring, and operational requirements for DPR systems. A broad-based technical/regulatory/water user work group will be convened, including Colorado Department of Public Health and Environment (CDPHE) regulatory staff, Colorado water utilities (both large and small), environmental and agricultural representatives, regulators and water utilities from other states, national experts, and other water users and interested parties, with most participants providing their time as in-kind contributions. The end goal of this task is to develop a proposed roadmap for the State of Colorado and its water users to follow in the future development of DPR projects.

[Note: The proposed roadmap developed as part of this process is not to be presented to or construed by the CDPHE as being endorsed by any Basin Roundtable, the CWCB, the IBCC, or any other entity unless that specific entity affirmatively states so in writing.]

Task 2: Public Outreach for DPR at the Local and State Level: This task will help bolster public understanding and acceptance of potable reuse through public information and outreach programs. While the science and engineering behind potable reuse is advancing at unprecedented rates, public perception remains one of the most significant challenges in implementing a potable reuse project. Understanding of water supply challenges and reuse opportunities is increasing, but experience in the industry clearly shows that there are specific actions that can be taken to improve acceptance of and support for potable reuse projects. This project will provide specific tools and actions to advance public understanding and acceptance of potable reuse projects in Colorado. We will focus on water utilities, regulators, legislators, opinion leaders and the general public with the guidance and assistance of an education/outreach workgroup consisting of the groups listed under Task 1, with the addition of the CWCB's Outreach and Education Coordinator. All workgroup participants and outreach, with the exception of the project consulting team, will provide their time on an in-kind basis.

Task 3: Leveraging Potable Reuse Planning Tools: This task will enhance existing planning tools and assist Colorado utilities with their assessment of DPR as a potential supply option. Research being conducted nationally has resulted in many approaches and tools that can be used locally to support the analysis and implementation of potable reuse projects, with a specific interest in cost comparisons of water supply options, treatment train options, and other cost-benefit analyses. However there is limited awareness in the water provider community regarding these extremely useful tools. This task includes updating/adapting an existing treatment alternatives

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screening tool for Colorado utilities' use and demonstrating its use at the local level. This will avoid providers needing to "start from scratch" when assessing treatment train options (including alternatives to membrane-based treatment and the corresponding need for brine management) and the potential role of potable reuse in a supply portfolio. Three Colorado case studies for DPR analysis will be completed using these tools to represent real world applications for utilities that are seriously considering DPR as a supply option.

### Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria**. (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.<sup>1</sup>

This project "Advancing Direct Potable Reuse to Optimize Water Supplies and Meet Future Demands" is consistent with Section 37-75-102 Colorado Revised Statutes. The project will not repeal or in any manner amend the existing water rights adjudication system and meets this threshold criteria. See attached Letter of Support for the project from the State Engineers Office (SEO).

b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRT's evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

Support of this projects and contributions from basin WSRA funds have been approved from the following roundtables:

- Metro Roundtable - \$25,000
- South Platte Basin Roundtable - \$15,000
- Colorado Basin Roundtable - \$15,000
- North Platte Basin Roundtable - \$2,500

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<sup>1</sup> 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair, limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.



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- c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.<sup>2</sup> The Basin Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

Letters of support from the Metro, South Platte, Colorado and North Platte Basin Roundtable are attached in Exhibit C.

SWSI, the Colorado Water Plan, and seven of the eight BIPs all emphasize the reuse of fully consumable supplies as an important component to reduce the municipal and industrial (M&I) Gap. The South Platte BIP (SPBIP), where much additional reuse will likely occur, includes a solution to "Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates" and a recommendation to "Implement additional reuse where practicable". The SPBIP includes 13 reuse-specific IPPs as well as agricultural transfer and transbasin IPPs where supplies could likely be further stretched to meet additional demands via reuse. The Arkansas BIP discusses the importance of reusing transbasin water supplies to the maximum potential. The Colorado, Yampa/White and Gunnison BIPs stress that entities should reuse all legally reusable supplies to the maximum extent possible to meet demands. The Southwest BIP includes an M&I goal to "Support and implement reuse strategies". This project, by facilitating DPR, will assist in meeting the water supply needs identified in the South Platte and other BIPs.

- d) Matching Requirement: For requests from the **Statewide Fund**, the applicants will be required to demonstrate a **25 percent** (or greater) match of the total grant request from the other sources, including but not limited to Basin Funds. A minimum match of 5% of the total grant amount shall be from Basin funds. A minimum match of 5% of the total grant amount must come from the applicant or 3rd party sources. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the contract or purchase order between the applicant and the State of Colorado is executed. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

The Total Project Cost = \$303,480

Statewide Fund Request = \$131,455

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<sup>2</sup> 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

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Matching funds for the Statewide Fund request include:

- Basin Funds - \$57,500
  - The Basin Fund match of the Statewide fund request is 43.7%
- Other Project Supporters Match = \$114,525
  - Other Project Supporters Match of the Statewide Fund request is 87.1%
  - Other Project Supporters Match of the total WSRA grant request is 60.6%
- Other Project Supporters Cash Match = \$55,000
  - WaterReuse Colorado = \$10,000
  - Denver Water = \$10,000
  - City of Aurora = \$7,500
  - Centennial Water and Sanitation District = \$5,000
  - Western Resource Advocates = \$4,000
  - Town of Castle Rock = \$7,500
  - Plum Creek Water Reclamation Authority = \$5,000
  - South Metro Water Supply Authority = \$1,000
  - WaterReuse Research Foundation = \$5,000
- Other Project Supporters In-Kind Match - \$59,525
  - Denver Water = \$10,000
  - Aurora Water = \$15,000
  - Centennial Water and Sanitation District = \$6,500
  - Western Resource Advocates = \$10,500
  - Colorado Springs Utilities = \$6,525
  - MSK Consulting = \$6,000
  - WaterReuse Association = \$5,000
  - Additional in-kind support, which has not been quantified here, will be provided by CDPHE and CWCB staff, South Platte agricultural representatives, out of state regulators and utilities, national reuse experts, and others who will participate in project workgroups.

2. For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria**. (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

**Evaluation Criteria** – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three “tiers” or categories. Each “tier” is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. The applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

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

- a. The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).

The project helps ensure the success of reuse IPPs, and can stretch supplies from other IPPs with legally reusable supplies, to meet the M&I gap along Colorado's Front Range, including in major gap areas. By advancing DPR, the project will help ensure that existing and future reusable supplies are used optimally, maximizing the amount of demand that is met by these supplies and decreasing the need to secure additional supplies. This benefits multiple basins and consumptive and non-consumptive interests. The project has the participation and support of multiple basins, water utilities, environmental and agricultural interests, among others.

This proposed water activity's promotion of collaboration and cooperative is demonstrated by diverse financial and in-kind contributions, state agency letters of support, and letters of support from different basin roundtables (Metro, South Platte, Colorado and North Platte) which are provided in Exhibit C.

- b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.

This proposed project addresses both intrabasin and interbasin needs and issues and includes cooperation and collaboration among consumptive and non-consumptive interests. This collaborative project includes support from state agencies (CDPHE, SEO and the CWCBC), numerous Front Range water utilities (both large and small), water research institutes, and environmental and agricultural interests, among others. Any water utility with existing or future reusable supplies throughout the state is a potential beneficiary of this project which seeks to enhance reuse opportunities. Additionally the project will indirectly benefit the West Slope as reuse allows utilities along the Front Range to stretch water supplies to meet more demands, decreasing the need for additional supplies. Similarly, while reuse decreases return flows and impacts downstream flows, it also decreases municipal pressure for additional supplies from agriculture. Reuse may similarly indirectly benefit streams of high recreational and environmental value. DPR is an effective water activity as it is able to meet year round demands and can produce a higher "yield" than non-potable reuse due to return flows from indoor uses. (CDHPE and SEO letters of support provided in Exhibit C).

- c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

The proposed water activity helps implement projects and processes and addresses identified gaps in supply and demand. SWSI, the Colorado Water Plan, and seven of the eight Basin Implementation Plans (BIPs) emphasize the reuse of fully consumable supplies as an important component to reduce the M&I Gap. The Water Plan states that "The full use of reusable water supplies will play an integral role in closing the supply gap

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by extending the resource through efficient reuse of water” and, specifically applicable to this project, that “Widespread development of potable reuse will be an important facet of closing the future water supply-demand gap”. This project “Advancing Direct Potable Reuse to Optimize Water Supplies and Meet Future Demands” and this grant application help accomplish specific reuse actions identified in the Water Plan which include: Explore reuse options, Clarify the regulatory environment, Support reuse education, and use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse.

The SPBIP, where much additional reuse will likely occur, includes a Solution to “Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates” and a Recommendation to “Implement additional reuse where practicable”. The SPBIP includes 13 reuse-specific IPPs as well as agricultural transfer and transbasin IPPs where these new supplies could be stretched to meet additional demands through reuse. The Arkansas BIP discusses the importance of reusing transbasin water supplies to the maximum potential. The Colorado, Yampa/White and Gunnison BIPs stress that entities should reuse all legally reusable supplies to the maximum extent possible to meet demands. The Southwest BIP includes an M&I goal to “Support and implement reuse strategies”.

This project, which facilitates DPR and reuse in general, helps meet Colorado’s future water needs and addresses M&I gap by providing an important tool to enable communities to stretch their reusable supplies further.

### Tier 2: Facilitating Water Activity Implementation

- d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).

The project has diverse funding (including Basin WSRA grants) and in-kind support accounting for 56.7% of the total cost but funding from the Account is critical to project implementation. While WaterReuse Colorado, utilities and others are making gradual progress to improve regulations to facilitate reuse, funding from the Account will help ensure that Colorado is well positioned to implement DPR as municipalities begin to seriously consider this water supply option. Without funding, Colorado may find itself in the undesirable position of being unprepared and forced to rapidly develop regulations and reassure the public and decision makers as communities construct DPR projects to stretch supplies. This project will leverage a wealth of national research, regulations and expertise to proactively ensure Colorado is well prepared to implement DPR.

- 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.

This project has broad support from a variety of project supporters and participants. Direct contributions and/or in-kind contributions are being provided by WaterReuse Colorado, Denver Water, the City of Aurora, Centennial Water and Sanitation District, Western Resource Advocates, the Town of Castle Rock, the Plum Creek Water Reclamation Authority, the South Metro Water Supply Authority, the WaterReuse Research Foundation, Colorado Springs Utilities and MSK Consulting as detailed in Exhibit A. The project also has the involvement of appropriate state agencies, CDPHE and CWCB, which are supportive and will participate in project workgroups. The SEO office has also offered to provide assistance as needed. Out of state regulators and utility staff and national DPR experts will be involved in workgroups on an in-kind basis (this project contribution has not been quantified) allowing Colorado to benefit from their expertise and experiences

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working through DPR regulations, outreach, and project implementation. Additionally, South Platte agricultural interests will be involved in the project on an in-kind basis (not quantified) to ensure their concerns and perspectives are represented.

### 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.

The project indirectly helps sustain agriculture and preserve environmental and recreational flows. DPR will allow communities to better optimize existing and future reusable supplies which will alleviate some of the need to secure additional new supplies from other sources. While reuse decreases municipal return flows, which clearly impacts streamflows and downstream users who have historically relied on those flows, reuse, when implemented effectively, can essentially double the demand that an acre-foot of legally reusable water is able to meet. Stretching each acre-foot of water supply further through potable reuse has *environmental* and *recreational* benefits when it results in fewer new stream diversions. It also decreases pressure on *agriculture* and the West Slope as sources of new water supplies. When water is transferred from the West to East Slope and from agriculture to municipalities (through alternative agricultural transfer methods or more traditional purchases), reuse fully recognizes the value of this water by ensuring it is used efficiently and effectively.

- g. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.

The project promotes the maximum utilizations of state waters by helping communities stretch existing and future reusable municipal return flows to meet more demands.

- h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.

The water activity is consistent with the Platte River Recovery Implementation Program (PRRIP) and key municipal project participants are members of the South Platte Water Related Activities Program (SPWRAP).

- i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

The water activity provides a high level of benefit to Colorado in relationship to the funds being requested. This project has broad financial and in-kind support (detailed in Exhibit A) and many potential beneficiaries. The project will leverage of a wealth of existing research, regulations and experience to ensure Colorado is well positioned to implement DPR as municipalities begin to seriously consider this water supply option. A recently-released DPR regulatory framework document, developed by a consortium of national water associations and a supporting panel of experts, combined with extensive regulatory efforts from New Mexico, California, Texas, and Oregon, will serve as launching points to develop a Colorado-specific regulatory framework proposal. Regulators, water utilities and reuse experts from other western states will participate in project workgroups on an in-kind basis, allowing Colorado to benefit from their expertise and experiences.

Our project consultant, Carollo Engineers, was selected through a competitive process. Carollo works at the forefront of potable reuse across the U.S. Their applied research and implementation work has shaped the

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regulatory framework and continues to push the boundaries to find lower cost water purification that is protective of public health. Carollo operates active potable reuse pilot treatment plants across the country and is helping guide state and federal regulators through this emerging field.

The Carollo team includes recognized reuse outreach expert, Linda Macpherson, who will assist with public education and outreach components of the project. This team has seen the highs and lows of public reaction to potable reuse, and is able to define a clear path forward for their clients based upon their experience. The project will leverage existing research on DPR specific education and outreach, including elements of the WaterReuse Foundation’s model communication plan for DPR, which was developed specifically for use by state sections.

Similarly, a variety of existing planning tools will be utilized to assist Colorado utilities with their assessment of DPR, and reuse in general, as a potential supply option. Central to this effort will be adapting and updating the Integrated Treatment Train Toolbox for Potable Reuse (IT3PR) for use by Colorado utilities, and a synthesis of health research to help assess and define the level of treatment and water quality needed for protection of public health (in addition to existing drinking water standards, and in lieu of DPR-specific water quality standards).

- j. The water activity is complimentary to or assists in the implementation of other CWCB programs.

This water activity is complementary to CWCB programs and addresses several recommendations from the 2015 CWCB funded white paper “Considering the Implementation of Direct Potable Reuse in Colorado” and the May 2015 Colorado Direct Potable Reuse Workshop. This project is intended to address several recommendations of the White Paper and Workshop including:

- Bringing together a broad range of experts and interested parties to develop a better understanding of the benefits of DPR in Colorado and produce a roadmap for the State of Colorado to follow in developing DPR as an increasingly important and viable strategy in bridging Colorado’s future water supply gap.
- Developing a program to educate the public, elected officials and water utilities about the benefits and safety of DPR.
- Working to develop specific potable reuse regulations, policies and guidance, drawing on the results of California’s on-going Direct Potable Reuse Initiative and experience gained by New Mexico, Texas and other states in implementing DPR projects.

This project also helps accomplish specific reuse actions identified in the Colorado Water Plan which include: Explore reuse options, clarify the regulatory environment, support reuse education, and use WSRA grant funds for expanded research and innovation related to the technical challenges and solutions of reuse.

Continued: Explanation of how the water activity/project meets all applicable **Evaluation Criteria**.

**Please attach additional pages as necessary.**

### Part IV. – Required Supporting Material

1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

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This project is designed to: improve the regulatory environment, overcome public perception issues and help individual utilities utilize existing tools to evaluate if reuse, including potable, is a viable and cost effective option. It will facilitate the reuse of legally reusable water supplies to help meet Colorado's M&I water supply gap. While it does not include a specific DPR reuse project, and thus no specific water supply source to identify here, the vast majority of reuse will be implemented along Colorado's Front Range.

2. Please provide a brief narrative of any related studies or permitting issues.

This project will lay the groundwork for DPR to be implemented in Colorado. It is related to recent WSRA funded studies including a 2011 project "Demonstration of Membrane Zero Liquid Discharge Process for Drinking Water Systems" and a 2015 white paper "Considering the Implementation of Direct Potable Reuse in Colorado". A May 2015 Colorado Direct Potable Reuse Workshop, supported in part by WaterReuse Colorado, was also held in association with the DPR white paper. The project will also utilize a report "Model Communication Plans for Increasing Awareness and Fostering Acceptance of Direct Potable Reuse" developed by the WaterReuse Research Foundation (WRRF) specifically for use by state sections. Other technical studies, such as the "Equivalency of Advanced Treatment Trains for Potable Reuse (WRRF-11-02)", will be incorporated into the project.

Addressing regulatory and permitting issues is a key objective of the project, with a work product being a draft framework for permitting and regulating direct potable reuse in Colorado. There are no permitting issues associated with project completion.

3. Statement of Work, Detailed Budget, and Project Schedule

Provided in Exhibit A

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement.** All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

**Please provide a detailed statement of work using the template in Exhibit A.** Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

### 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.

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### 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 10 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:** Laura Belanger

**Project Title:** Advancing Direct Potable Reuse to Optimize Water Supplies and Meet Future Demands

**Date:** 01/29/2016

**Return an electronic version (hardcopy may also be submitted) of this application to:**

Craig Godbout – WSRA Application  
Colorado Water Conservation Board  
1313 Sherman St., Room 721  
Denver, CO 80203  
303-866-3441, ext. 3210 (office)  
303-547-8061 (cell)  
[craig.godbout@state.co.us](mailto:craig.godbout@state.co.us)



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### **EXHIBITS**

#### **Exhibit A:**

Statement of Work

Budget (Expenses, Income and In-Kind Contributions)

Schedule

#### **Exhibit B: NA**

#### **Exhibit C:**

Letters of Support from CDPHE and SEO

Approval Letters from the Metro, South Platte, Colorado and North Platte Basin Roundtables