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## Colorado Water Conservation Board

### Water Plan Grant Application

#### Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as “project”) funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Supply and Demand Gap Projects: Gregory.Johnson@state.co.us

Water Storage Projects: Anna.Mauss@state.co.us

Conservation, Land Use Planning: Kevin.Reidy@state.co.us

Engagement & Innovation Activities: Mara.MacKillop@state.co.us

Agricultural Projects: Brent.Newman@state.co.us

Environmental & Recreation Projects: Linda.Bassi@state.co.us

Applicants interested in submitting an ‘Intent to Apply’ in the future are encouraged to check here  and fill in all sections with the best information available at the time. Exhibits excluded.

This “Intent to Apply” will help CWCB prioritize Projects that are not ready for fully completed Water Plan Grant Application due to the initial timeframe and deadlines required.

#### Water Project Summary

Name of Applicant	Dominion Water & Sanitation District	
Name of Water Project	Regional Factors for Precipitation Harvesting	
CWP Grant Request Amount	\$54,000	
Other Funding Sources _____	\$	
Other Funding Sources _____	\$	
Applicant Funding Contribution	\$54,000	
Total Project Cost	\$108,000	



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<b>Applicant &amp; Grantee Information</b>	
Name of Grantee(s)	Dominion Water & Sanitation District
Mailing Address	8390 E Crescent Parkway, Suite 500, Greenwood Village, Colorado 80111
FEIN	73-1729122
Organization Contact	Mary Kay Provaznik
Position/Title	Utilities Director
Email	maryk@sterlingranchcolorado.com
Phone	(303)-779-4525 or cell: (303)-905-2677
Grant Management Contact	Mark Mitisek
Position/Title	Project Manager
Email	mark.mitisek@lrewater.com
Phone	(303)-455-9589
Name of Applicant (if different than grantee)	
Mailing Address	
Position/Title	
Email	
Phone	

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### Description of Grantee/Applicant

Provide a brief description of the grantee's organization (100 words or less).

Dominion Water & Sanitation District (Dominion) is a Title 32 Special District authorized to provide water and waste water services to other water districts and municipalities in northern Douglas County. Dominion is the wholesale water provider for Sterling Ranch Development and administrator of the state's first precipitation pilot program at Sterling Ranch. Formed in 2004, Dominion has a mission to provide a new conjunctive use water supply to an area with limited renewable water in accordance with the goals set in Douglas County's 2030 Comprehensive Master Plan.



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Type of Eligible Entity (check one)	
	<b>Public (Government):</b> Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
X	<b>Public (Districts):</b> Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	<b>Private Incorporated:</b> Mutual ditch companies, homeowners associations, corporations.
	<b>Private Individuals, Partnerships, and Sole Proprietors:</b> Private parties may be eligible for funding.
	<b>Non-governmental organizations (NGO):</b> Organization that is not part of the government and is non-profit in nature.
	<b>Covered Entity:</b> As defined in <a href="#">Section 37-60-126 Colorado Revised Statutes</a> .

Type of Water Project (check all that apply)	
X	Study
	Construction
X	Identified Projects and Processes (IPP)
X	Other

Category of Water Project (check all that apply and include relevant tasks)	
	Supply and Demand Gap Projects - Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap. <i>Applicable Exhibit A Task(s):</i>
	Water Storage Projects - Projects that facilitate the development of additional storage, artificial recharge into aquifers, and dredging existing reservoirs to restore the reservoirs' full decreed storage capacity. <i>Applicable Exhibit A Task(s):</i>
X	Conservation and Land Use Planning Projects - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. <i>Applicable Exhibit A Task(s): All listed</i>
	Engagement & Innovation Projects - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application available on the website. <i>Applicable Exhibit A Task(s):</i>
	Agricultural Projects - Projects that provide technical assistance and improve agricultural efficiency. <i>Applicable Exhibit A Task(s):</i>
	Environmental & Recreation Projects – Projects that promote watershed health, environmental health, and recreation. <i>Applicable Exhibit A Task(s):</i>

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	Other	Explain:
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<b>Location of Water Project</b>	
Please provide the general county and coordinates of the proposed project below in <b>decimal degrees</b> . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Countries	Douglas County
Latitude	39° 29' 43.94" N
Longitude	105°02' 26.14' W

<b>Water Project Overview</b>
<p>Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain.</p> <p>The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.</p>
<p>On July 21, 2010, Dominion Water &amp; Sanitation District was approved by the CWCB as the State's first and only Precipitation Pilot Program allowing precipitation harvesting with 100% replacement. Now in its eighth year of monitoring the Pilot Program has collected significant amount of field data to support a water right for precipitation harvesting at Sterling Ranch.</p> <p>During the 2015 legislative session HB15-1016 was passed with the primary purpose of incentivizing additional precipitation harvesting pilot programs. The primary objective of HB15-1016 is to develop regionally applicable factors that program sponsors can use for substitute water supply plan. The regional factors specify the amount of historical natural precipitation depletion from evapotranspiration of preexisting natural vegetative cover that does not need to be fully replaced from areas made impermeable. The development of regional factors is complex and requires data, which Dominion has as the State's only pilot project.</p> <p>Dominion would like to partner with the State to support the development regional factors further incentivizing additional Pilot Programs. The CWP Grant will be used to fund a study evaluating the methods for developing regional factors and the legal framework for future applicants by providing methods, tools, and guidance for developing precipitation as a viable water supply.</p>



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<b>Measurable Results</b>	
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:	
	New Storage Created (acre-feet)
400 acre-feet/year/application*	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
\$8,000/year/application**	Efficiency Savings (indicate acre-feet/year OR dollars/year)
	Area of Restored or Preserved Habitat (acres)
	Quantity of Water Shared through Alternative Transfer Mechanisms
~30,000/application***	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
	Other Explain:

\*400 acre-feet/year is the estimated yield identified in the South Platte BIP as an IPP for Sterling Ranch, which may be representative of future applications

\*\*\$8,000/year is the estimated savings in pumping costs that would be required by another water source for Sterling Ranch

\*\*\*~30,000 Coloradoans at Sterling Ranch would be directly impacted (~12,050 SFE X 2.5 residents/SFE), all new residential developments statewide would benefit from this project.

<b>Water Project Justification</b>
<p>Provide a description of how this water project supports the goals of <a href="#">Colorado's Water Plan</a>, the most recent <a href="#">Statewide Water Supply Initiative</a>, and the applicable Roundtable <a href="#">Basin Implementation Plan</a> and <a href="#">Education Action Plan</a>. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).</p> <p>The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)</p> <p>This Grant will directly support Precipitation Harvesting Pilot Program's and the development and captured of precipitation from new real estate developments as a viable water supply without harming existing water right owners. Below is a summary of the justification for the project and a description of how the project supports the goals and identified water values of the Colorado Water Plan.</p> <p><u>Colorado Water Plan (CWP)</u></p> <p>Precipitation harvesting is important to Colorado's future as it provides a renewable and sustainable water resource that meets the following water conservation goals outlined in Chapter 6.3 of the Water Plan.</p>



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## Water Project Justification

Does the project reduce overall future water needs through cost-effective water efficiency measures?

*Yes, precipitation harvesting is a cost-effective solution for developing a new water supply to meet non-potable demands thus reducing the need to pump non-renewable groundwater supplies, and/or the need for acquisition of other downstream irrigation water rights and the associated infrastructure and operations costs. While precipitation harvesting is currently not part of Dominion's firm supply planning, precipitation harvesting provides for opportunities to be less reliant on groundwater and its infrastructure as the full water supply system is developed, while also potentially reducing future renewable water supply needs.*

Does the project integrate water efficiency planning and projects into overall water resource management?

*Yes, regional precipitation harvesting combined with a conjunctive use water supply system requires comprehensive integrated water resource planning. The yield resulting from precipitation harvesting is directly related to the effectiveness of the system design and operations. Due to its direct link to regional hydrology, regional precipitation harvesting needs to be combined with a robust system of other water supplies. In addition, water efficiency planning and demand management allow for the most effective implementation, especially when combined with the technological advances on both the water supply and storm drainage management approaches. The combination of both the supply and stormwater resources will be critical to the success of this project and the overall future management of water resources statewide.*

Does the project promote a water efficiency ethic throughout Colorado?

*Yes, the development of regional factors and promotion of precipitation harvesting supports both water conservation, water quality enhancement, and efficient energy management by using local renewable water, providing for opportunities of direct use of raw water, and potentially reducing treatment needs and non-point source loadings. In addition, combined with direct user feedback, precipitation harvesting provides a hands-on education to, and partnership with, the residents in the community, influencing not just water providers, but the users of our water resource.*

Does the project explore additional water reuse options?

*Not at this time. At Sterling Ranch, Precipitation harvesting is part of an integrated raw water system that will allow the community to reliably deliver to non-potable water uses. By developing a non-potable system around the raw water supply, Sterling Ranch may have opportunities in the future to explore other water reuse options.*

Does the project integrate land use and water planning?



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## Water Project Justification

*Yes, the development of a regional precipitation harvesting system is only effective, in costs and in water supply yield, when integrated as a part one or all of the following: the planned development, stormwater systems, raw water systems and water demand management.*

Does the project advance conservation planning efforts?

*Yes, absolutely. The development of a regional precipitation harvesting system requires more data collection and detailed water supply planning for the efficient use of precipitation. Taking advantage of water supplies onsite reduces transit losses and energy consumption. In basins where precipitation harvesting occurs, the basin's beneficial uses may be considered as a whole, monitored, and prioritized. This combined with demand management and traditional water conservation efforts advances conservation planning efforts forward.*

Does the project advance drought mitigation planning efforts?

*Yes, in preliminary studies for Sterling Ranch, some level of precipitation has occurred every year, which results in some reliable firm supply. The potential for average water supply is much greater. In Douglas County, the use of precipitation capture to meet demands, especially when combined with local reservoir and potentially aquifer storage, allows for the valuable groundwater resource to be reserved as backup supply for renewable supplies in dry periods.*

Does the project reduce impacts and prepare for the impacts of climate change?

*As an average yield water supply impacted directly by climate change the project would benefit both from a wetter climate resulting in a higher average yield, and warmer climate resulting in more rain than snow events potentially resulting in higher average yield. To the extent that a community is dependent on imported renewable water supplies, local precipitation harvesting may provide robustness to their water supply by expanding their potential for more positive hydrologic conditions. Finally, precipitation harvesting may allow for the storage of this water supply in wetter years for use in extreme drought conditions, especially when combined with aquifer storage and recovery where deep wells are already available.*

**Page 6-61 of the CWP describes the benefits of water conservation. Precipitation harvesting has the same or similar benefits:**

- Water savings resulting from water efficiency activities can reduce water demands and thereby assist providers in avoiding, downsizing, or postponing the construction and operation of water supply facilities and wastewater facilities. —as well as eliminating, reducing, or postponing water purchases.

*Precipitation harvesting allows for more efficient use of infrastructure reducing non-*



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## Water Project Justification

*potable demands required to be met with new direct water supplies, non-renewable groundwater or storage water. Precipitation harvesting is a cost effective alternative to the development of new renewable surface water supplies because of the leverage obtained by not having to augment 100% of captured precipitation when out-of- priority.*

- In addition to these water supply benefits, Colorado can achieve other societal, political, and environmental benefits, including:
  - Reduced wastewater discharges through indoor water savings, which can improve water quality and aquatic habitat.

*Precipitation harvesting will reduce non-point discharge associated with stormwater systems, which can improve water quality and aquatic habitat.*

- Demonstration of a commitment to sustainability.

*As a renewable water resource precipitation harvesting is sustainable solution for offsetting non-potable demands. Operationally the integration, planning, and implementation of a precipitation harvesting system reaffirms Dominion's commitment to sustainability.*

- The meeting of political and regulatory requirements necessary to obtain permitting for local and regional water supply projects.

*Regional precipitation harvesting functions within the existing regulatory requirements defined by local and state agencies.*

- Delay of capital costs for new projects.

*A reduction in non-potable demands resulting from precipitation harvesting will delay the need for new water projects and capital improvements.*

**Pages 6-65 and 6-66 of the Colorado Water Plan summarizes the Conservation Actions and Goals identified by the IBCC for the State of Colorado**

***“Reduce Colorado’s 2050 municipal water demands by 400,000 acre-feet statewide”***

*The IBCC has a water conservation goal to reduce Colorado’s municipal demands by 400,000 acre-feet statewide. Precipitation harvesting is water conservation aimed at specifically reducing new real estate development non-potable demands. The Sterling Ranch Pilot program is only one of the authorized ten Statewide with the project estimated to yield nearly 400 acre-feet/year firm and potentially more. Assuming all Pilot Programs are developed that is nearly 4,000 acre-feet or potentially 1% of the identified goal for each application. This*



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## Water Project Justification

*project supports the development of precipitation as a viable water supply and incentivizes additional Pilot Programs through the development of regional factors.*

***“For the goal to be successful, water providers will be encouraged to do comprehensive, integrated water resource planning, geared toward implementing the best practices at the high customer participation levels, as defined in SWSI.”***

*Regional precipitation harvesting combined with a conjunctive use water supply system requires comprehensive integrated water resource planning. Sterling Ranch’s water conservation goals, commitment to demand management, and metering infrastructure support best practices and high customer participation through use of technology.*

**Pages 9-43 and 9-44 describe the criteria for project alignment with the Colorado Water values defined in Chapter 1. The following questions were asked:**

Does the project proponent demonstrate a commitment to collaboration?

*Through the development and implementation of the precipitation harvesting pilot project, Dominion has relied on its partners and collaborators to enhance the approach and move the project forward. This study continues our commitment to collaboration through a partnership with the State and technical peers to establish methods supporting the development of regional factors benefiting all regions and water providers with future development.*

Does the project proponent address an identified water gap?

*The Sterling Ranch Pilot Program is a Consumptive Identified Project and Process (IPP) in the South Platte BIP. The IPP is for 400 acre-feet of yield from existing supplies reducing non-potable demands at Sterling Ranch. Precipitation harvesting statewide is an important water supply meeting the municipal demand gaps in SWSI. Sterling Ranch is one example of precipitation harvesting. The development of regional factors and the legal framework will incentivize additional pilot programs supporting precipitation harvesting as a viable water supply.*

Does the project proponent demonstrate sustainability?

*As a renewable water resource precipitation harvesting is a sustainable solution for offsetting non-potable demands. The project maximizes the use of existing water supply while mitigating or avoiding impacts to water quality and the environment.*

Does the project proponent establish the fiscal and technical feasibility of the project?

*The development of regional factors to support precipitation harvesting pilot programs is technically and fiscally feasible. The relatively small cost of the project has huge benefits*



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**Water Project Justification**

*statewide.*

**Related Studies**

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

- *Holistic Approach to Sustainable Water Management in Northwest Douglas County (Leonard Rice, Inc., Meurer and Associates, January 2007)*

**Previous CWCB Grants, Loans or Other Funding**

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

Grant Type: HB05-1254 Water Efficiency Grant for Water Efficiency  
 Grant Amount: \$95,000  
 Project Date: January 27, 2005  
 Project Name: *“Water Efficient Landscaping , Irrigation System Efficiency, and Precipitation Management Study*  
 Project Deliverable: *“Holistic Approach to Sustainable Water Management in Northwest Douglas County(January 2007)” Report*

1. Applicant Name(s): Dominion Water & Sanitation District, Castle Pines North Metropolitan District, Douglas County
2. Water Activity Name(s): Dominion Water & Sanitation District, Castle Pines North Metropolitan District, Douglas County
3. Approving RT : N/A (Grant Funded Prior to Round Tables)
4. CWCB Board Meeting: (Under 50K, no Board approval necessary)
5. Contract Number/Purchase Order:
6. Percent CWCB Funding: 50% (\$47,500)

**Taxpayer Bill of Rights**

The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.

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<b>Submittal Checklist</b>	
X	I acknowledge the Grantee will be able to contract with CWCB using the <a href="#">Standard Contract</a> .
<b>Exhibit A</b>	
X	Statement of Work <sup>(1)</sup>
X	Budget & Schedule <sup>(1)</sup> ( <i>Spreadsheet</i> )
X	Letters of Matching and/or Pending 3 <sup>rd</sup> Party Commitments <sup>(1)</sup>
<b>Exhibit C</b>	
X	Map (if applicable) <sup>(1)</sup>
	Photos/Drawings/Reports
	Letters of Support (Support letter from Basin Roundtable encouraged)
	Certificate of Insurance (General, Auto, & Workers' Comp.) <sup>(2)</sup>
	Certificate of Good Standing with Colorado Secretary of State <sup>(2)</sup>
	W-9 <sup>(2)</sup>
	Independent Contractor Form <sup>(2)</sup> (If applicant is individual, not company/organization)
<b>Engagement &amp; Innovation Grant Applicants ONLY</b>	
	Engagement & Innovation Supplemental Application <sup>(1)</sup>

(1) Required with application.

(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

## **EXHIBIT A**

## DOMINION WATER AND SANITATION DISTRICT

8390 E CRESCENT PARKWAY | SUITE 500 | GREENWOOD VILLAGE | COLORADO | 80111 | 303-779-4525 PHONE | 303-773-2050 FAX

August 1, 2017

Mr. Kevin Riedi  
Colorado Water Conservation Board  
1313 Sherman Street, Suite 721  
Denver, Colorado 80203

RE: Commitment to match Colorado Water Plan Grant funds

Mr. Riedi,

Dominion Water & Sanitation District is invested in advancing precipitation harvesting as a viable water supply statewide. As the first and only Precipitation Harvesting Pilot program in the state, Dominion is excited about the opportunity to collaborate with the state and pave the path forward for future communities to legally harvest precipitation. As a part of this commitment, Dominion will provide \$54,000 of matching funds for the development of regional factors pursuant to HB 15-1016 benefiting both the Pilot Program and future applicants.

Sincerely,  
Dominion Water and Sanitation District



Mary Kay Provaznik  
Utilities Director

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<b>Colorado Water Conservation Board</b>
<b>Water Plan Grant - Exhibit A</b>

<b>Statement Of Work</b>
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<b>Date:</b>	<b>08/01/2017</b>
<b>Name of Applicant:</b>	<b>Dominion Water &amp; Sanitation District (Dominion)</b>
<b>Name of Water Project:</b>	<b>Regional Factor Development for Precipitation Harvesting</b>
<b>Funding Source:</b>	<b>Conservation, Land Use Planning CWP Grant</b>

**Water Project Overview:** Please provide a summary of the proposed water project (200 words or less). The same summary can be used from Page 5 of the CWP Grant Application.

On July 21, 2010, Dominion Water & Sanitation District was approved by the CWCB as the State’s first and only Precipitation Pilot Program allowing precipitation harvesting with 100% replacement. Now in its eighth year of monitoring the Pilot Program has collected significant amount of field data to support a water right for precipitation harvesting at Sterling Ranch.

During the 2015 legislative session HB15-1016 was passed with the primary purpose of incentivizing additional precipitation harvesting pilot programs. The primary objective of HB15-1016 is to develop regionally applicable factors that program sponsors can use for substitute water supply plan. The regional factors specify the amount of historical natural precipitation depletion from evapotranspiration of preexisting natural vegetative cover that does not need to be fully replaced from areas made impermeable. The development of regional factors is complex and requires data, which only Dominion has.

Dominion would like to partner with the State to support the development of these factors further incentivizing additional Pilot Programs. The CWP Grant will be used to fund a study evaluating the methods for developing regional factors and the legal frame work for future applicants by providing methods, tools, and guidance for developing precipitation as a viable water supply.

**Objectives:** List the objectives of the project.

Further Incentivize Precipitation Harvesting Pilot Programs By:

- Summarizing the current legal framework guiding pilot program applicants through the substitute water supply plan and augmentation plan processes.
- Providing clarity and guidance from the State on how precipitation harvesting will be administered
- Collaborating with the Colorado Water Conservation Board, Colorado Division of Water Resources, and external peer reviewer to develop, document, and obtain approval for proposed methods for establishing Regional Factors.
- Utilize Sterling Ranch Precipitation Pilot Program data to support the development of Regionally Applicable Factors.
- Develop methodology to calculate Regionally Applicable Factors for future applicants in other

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<p>regions of the State.</p> <ul style="list-style-type: none"> <li>• Develop sample water budget accounting forms for administering precipitation harvesting using regional factors, and local climate data for future applicants.</li> </ul>
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<b>Tasks</b>
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Provide a detailed description of each project task using the following format:
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<b>Task 1 – Document Current Precipitation Harvesting Legal Framework</b>
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Description of Task:
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<p>The CWCB Precipitation Harvesting Criteria and Guidelines (Amended by CWCB: January 26, 2016) define the requirements of Pilot Programs to capture precipitation in New Real Estate Development. However, the current legal framework and SWSP requirements are defined by the State’s Policy 2003-2 General Guidelines for Substitute Water Supply Plans Submitted to the State Engineer Pursuant to Section 37-92-308, CRS (2003). The State policies dictate the type of SWSP required and when an associated augmentation plan is required to be filed. The introduction of HB 15-1016 provisions makes it difficult to understand how the process has changed and what the benefits are for using Regional Factors. Task 1 will be to work with the Colorado Division of Water Resources staff to understand and document the process, requirements, and benefits of applying for a SWSP and augmentation plan to capture precipitation using Regional Factors.</p>
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Method/Procedure:
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<p>In collaboration with the State (CWCB &amp; SEO) the following tasks will be completed to document the current precipitation harvesting framework:</p> <ul style="list-style-type: none"> <li>• Develop a flow chart type schematic to help applicants navigate the legal framework for applying for a water right to capture precipitation.</li> <li>• Establish and summarize the unique requirements associated with a precipitation harvesting SWSP.</li> <li>• Work with SEO staff to identify the protocols and instrumentation required to properly administer harvested precipitation as a developed water supply.</li> </ul>
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Grantee Deliverable: Describe the deliverable the grantee expects from this task
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<ul style="list-style-type: none"> <li>• CWCB and SEO guidance and approval of the SWSP process that fits with the Criteria and Guidelines for Rainwater Harvesting and guidance from the State on how precipitation harvesting will be administered.</li> </ul>
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CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
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<ul style="list-style-type: none"> <li>• A memorandum and schematics documenting the current legal framework and processes for applying for a precipitation harvesting SWSP and subsequent augmentation plan. The document will act as a guidance document for navigating the current legal framework for applying for an SWSP and augmentation plan using Regional Factors. The document will also summarize the unique requirements as well as protocols and instrumentation for the administration of precipitation as a water supply in new real estate developments.</li> </ul>
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<b>Tasks</b>
Provide a detailed description of each project task using the following format:
<b>Task 2 – Evaluation of Proposed Regional Factor Development Methodologies</b>
Description of Task:
<p>Further the methodology for the development of regionally applicable factors and associated water budget accounting. On behalf of the Dominion, Leonard Rice Engineers (LRE) proposed a draft methodology to the State Engineer’s Office (SEO) and Urban Drainage and Flood Control District (UDFCD), and received positive feedback. Task 2, is to finalize a methodology with the State and an external peer reviewer on the proposed methods for the development of regionally applicable factors.</p>
Method/Procedure:
<p>The following efforts are to be completed to further the proposed methodology:</p> <ul style="list-style-type: none"> <li>• Coordinate with state personnel and an external peer reviewer on the proposed methods for the development of regionally applicable factors. Request feedback and refinement about the draft approach and how the methods are applicable regionally.</li> <li>• Develop example storm event(s) for evaluation by State agencies and peer reviewer, to confirm their understanding of the methodology and how regional factors are applied.</li> <li>• Coordinate with the State (SEO, CWCB) and external peer reviewer to approve the reasonableness of the methodology as a basis for an SWSP and water court application.</li> <li>• Collaborate with the State (SEO, CWCB) and external peer reviewer to regionalize factors and determine if the methods or results can be simplified to accommodate easier administration while protecting senior water rights.</li> <li>• Update draft documentation summarizing the approved methods and approach used to develop a transparent and repeatable process for the development of these regionally applicable factors.</li> </ul> <p><b><u>This document will support the State’s requirement to update the criteria and guidelines incentivizing applications to capture rainwater.</u></b></p>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<ul style="list-style-type: none"> <li>• Through the development of the memo described below, the grantee seeks an approved method for the development of regionally applicable factors</li> </ul>
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>• A memorandum documenting the final approved methodology used to determine precipitation capture regional factors.</li> </ul>

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<b>Tasks</b>
Provide a detailed description of each task using the following format:
<b>Task 3 – Summary of SITE SPECIFIC OBSERVED DATA</b>
Description of Task:
<p>Site specific data collection efforts for the Pilot Program began in 2010 with the installation of the climate station. Since that time a significant amount of natural conditions field data has been collected at Sterling Ranch to support the water budget of inflows (precipitation), outflows (runoff, deep percolation, and evapotranspiration-ET) and change in soil moisture reservoir. This site specific data collected to date will be used to support the development of regionally applicable factors. Task 3 is the summary of site specific observed data from the Sterling Ranch Pilot Program.</p>
Method/Procedure:
<p>Below is the approach for summarizing site specific data collected as from the Natural Conditions monitoring program at Sterling Ranch:</p> <ul style="list-style-type: none"> <li>• Compile and validate collected field data sets from pilot project applicable to the development of regional factors (precipitation, stream gage data, data from the lysimeter, etc.) in time increments consistent with the models of the approved methodology.</li> <li>• Perform QA/QC on datasets and document the process used to review each data set.</li> <li>• Format and organize data sets for use by both discrete and continuous models</li> <li>• Develop storm statistics to categorize storm events (March 2010 to June 2017). Precipitation statistics will include duration, frequency, depth, and maximum intensity (in/5 min).</li> <li>• Select observed storm events and hydrology with all required data to be analyzed representing the wide range of hydrologic conditions at the site to be used in developing calibrated regional factors.</li> <li>• Compile and review final evapotranspiration data set required for water balance and water budget.</li> </ul>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<ul style="list-style-type: none"> <li>• A final data set that will be used as the basis for developing site specific factor and regional factors.</li> </ul>
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>• A memorandum describing each data set and the review process completed.</li> <li>• A final data set that will be used as the basis for developing site specific factor and regional factors.</li> </ul>

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Tasks
Provide a detailed description of each task using the following format:
<b>Task 4 – Site Specific and Regional Factor Development</b>
Description of Task:
<p>Develop site specific factors independently using the approved methodology from Task 2 and the site specific data summarized as a part of Task 3. Work with State staff and peer reviewer to verify calibrated factors using site specific data and the correct application of readily available methods to calculate precipitation-runoff, soil moisture accounting, and ground water return flows. Assist state in the development of a process to calculate regional factors, and to what extent they would apply.</p>
Method/Procedure:
<p>Methods and procedures defined by the approved methodology in Task 2 will be used to support the development of site specific and regionally applicable factors.</p> <ul style="list-style-type: none"> <li>• Apply the approved regional factor methodology to selected storm events to characterize the site specific rainfall-runoff relationship and rainfall-infiltration/storage depression relationship in Sterling Gulch. Regional factors will be adjusted to calibrate simulated rainfall-runoff to reasonably match observed storm runoff volumes.</li> <li>• Analyze rainfall-runoff relationships for all selected storms and summarize conclusions to be used as the basis of Regionally Applicable Factors. It is expected that the regional factors will have a range of values for various storm events, and recommended factors will be conservatively selected to reasonably protect senior vested water rights.</li> <li>• Conduct water budget analysis of lysimeter data with rainfall infiltration as inflows and calibrating regional factors (Kc, soil moisture holding capacity) to reasonably match the amount of observed deep percolation.</li> <li>• Conduct a Glover analysis to determine the unit response function (URF) or monthly return pattern of deep percolating precipitation from natural conditions to the stream.</li> <li>• Update documentation of approved methodology with Proposed Regional Factors.</li> </ul> <p><u>State and Peer Review of Developed Regional Factors</u></p> <ul style="list-style-type: none"> <li>• Provide and present site specific factors, supporting data sets, models, and methods that Sterling Ranch would propose to use in subsequent SWSP and water court applications.</li> <li>• Work with State and peer reviewer to verify the data, process, and methods applied to calculate the site specific factors applicable to Sterling Ranch.</li> <li>• Work with State and peer reviewer on the extent to which the Sterling Ranch regional factors would apply, and develop criteria based on the approved methods defined in Task 2 for regionalizing factors for other parts of the State.</li> </ul>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<ul style="list-style-type: none"> <li>• The grantee will have a set of peer reviewed and approved Regionally Applicable Factors as the basis of their SWSP and subsequent augmentation plan for Sterling Ranch and others within Dominion’s service area in Northwestern Douglas County.</li> </ul>

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Tasks
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>Documented process of how to calibrate Regional Factors to existing data using readily available approved hydrologic methodologies along with a set of recommended criteria for determining the areal extent to which a set of peer reviewed Regionally Applicable Factors can be applied.</li> </ul>

Tasks
Provide a detailed description of each task using the following format:
<b>Task 5 –Sample Precipitation Harvesting Accounting Procedures Utilizing Regional Factors</b>
Description of Task:
Using the information developed from Task 1 that documents the current precipitation harvesting legal framework, sample precipitation harvesting accounting will be developed. This accounting will accompany an SWSP application and/or augmentation plan application, utilizing the approved regional factors, SEO defined accounting procedures and protocols, and instrumentation required to properly administer captured precipitation as a developed water supply.
Method/Procedure:
The following methods and procedures will be used to develop sample account for precipitation harvesting: <ul style="list-style-type: none"> <li>Identify required types of data inputs, time intervals for data collection, and required instrumentation for individual cisterns, and regional storage facilities.</li> <li>Develop daily sample accounting calculations using regional factors and SEO defined accounting procedures and protocols required to properly quantify precipitation owed to stream as direct runoff and deep percolation, and the amount that can be captured as a developed water supply.</li> <li>Provide sample accounting to SEO staff for review and verification that it's administrable.</li> </ul>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<ul style="list-style-type: none"> <li>A SEO reviewed sample accounting workbook that incorporates regional factors and SEO defined accounting procedures and protocols required to properly administer precipitation as a water supply for on-site irrigation use with an SWSP or in an augmentation plan.</li> </ul>
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>A SEO reviewed sample accounting workbook that incorporates regional factors and SEO defined accounting procedures and protocols required to properly administer precipitation as a water supply available for future applicants.</li> </ul>

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Tasks
Provide a detailed description of each task using the following format:
<b>Task 6 – Project Management and Progress Reports</b>
Description of Task:
This task includes all planned project management and progress reports required for the duration of the project.
Method/Procedure:
<b>Project Management:</b> This task includes the general project management including: project tracking of progress, budget, and schedule; The development and submission of monthly invoices; and CWP grant management.
<b>Progress Reports:</b> The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status 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.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<ul style="list-style-type: none"> <li>• Project management tracking of project progress, budget, and schedule.</li> <li>• Project management tracking of CWP and applicant funding, and invoicing.</li> </ul>
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>• Progress Reports meeting the requirement of the CWP grant.</li> </ul>

Tasks
Provide a detailed description of each task using the following format:
<b>Task 7 – Final Report</b>
Description of Task:
Upon conclusion of Task’s 1 through 5 a final report will be prepared meeting the CWP grant reporting requirements.
Method/Procedure:
<b>Final Report:</b> At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:
<ul style="list-style-type: none"> <li>• Summarizes the project and how the project was completed.</li> </ul>

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Tasks
<ul style="list-style-type: none"> <li>• Describes any obstacles encountered, and how these obstacles were overcome.</li> <li>• Confirms that all matching commitments have been fulfilled.</li> <li>• Includes photographs, summaries of meetings and engineering reports/designs.</li> </ul>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
<ul style="list-style-type: none"> <li>• A final report meeting the CWCB grant reporting requirements.</li> </ul>

**Repeat for Task 3, Task 4, Task 5, etc.**

Budget and Schedule
This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements
<p><b>Progress Reports:</b> The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status 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. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.</p>
<p><b>Final Report:</b> At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:</p> <ul style="list-style-type: none"> <li>• Summarizes the project and how the project was completed.</li> <li>• Describes any obstacles encountered, and how these obstacles were overcome.</li> <li>• Confirms that all matching commitments have been fulfilled.</li> <li>• Includes photographs, summaries of meetings and engineering reports/designs.</li> </ul> <p>The CWCB will withhold disbursement the last 10% of the budget until the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.</p>

Last Updated: July 5, 2017



# COLORADO

Colorado Water Conservation Board

Department of Natural Resources

## Colorado Water Conservation Board

### Water Plan Grant - Exhibit A Budget and Schedule

**Date: 08/01/2017**

**Name of Applicant: Dominion Water & Sanitatio District**

**Name of Water Project: Regional Factor Development for Precipitation Harvesting**

Task No.	Task Description	Start Date <sup>(1)</sup>	End Date	Grant Funding Request	Match Funding	Total
1	Document Current Precipitation Harvesting Legal Framework	2/1/2018	3/1/2018	\$ 3,000	\$ 3,000	\$6,000
2	Evaluation of Proposed Regional Factor Development Methodolgies (CWCB, DWR, and External Peer Reviewer)	3/1/2018	4/15/2018	\$ 8,000	\$ 8,000	\$16,000
3	Summary of Site Specific Observed Data	3/1/2018	6/1/2018	\$ 10,000	\$ 10,000	\$20,000
4	Site Specific and Regional Factor Development	4/1/2018	8/1/2018	\$ 21,000	\$ 21,000	\$42,000
5	Develop Sample Precipitation Harvesting Accounting Procedures Utililizing Regional Factors	8/18/2018	9/1/2018	\$ 3,000	\$ 3,000	\$6,000
6	Project Management and Progress Reports	1/15/2018	10/25/2018	\$ 4,500	\$ 4,500	\$9,000
7	Final Report	9/1/2018	10/25/2018	\$ 4,500	\$ 4,500	\$9,000
<b>Total</b>				\$54,000	\$54,000	\$108,000

(1) Start Date for funding under \$100K, minimum 45 Days from Board Approval; Start Date for funding over \$100K, minimum 90 Days from Board Approval.

-Round values up to the nearest hundred dollars.

-Reimbursement eligibility commences upon the grantee's receipt of a Notice to Proceed (NTP)

-NTP will not be accepted as a start date. Project activities may commence as soon as grantee enters contract and receives formal NTP if prior to the listed

-The applicant shall provide a progress repost every 6 months, beginning from the date of contract execution.

-CWCB will withhold disbursement of the last 10% of the total grant amount until a Final Report is completed to the satisfaction of CWCB staff (2017 CWP)

**EXHIBIT C**



# Exhibit C – Map of Project Location

