COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

1/16/18

Mary Kay Provoznik
Dominion Water and Sanitation District
8390 E Crescent Parkway, Suite 500,
Greenwood Village, Colorado
80111

RE: CWP GRANTS – OFFICIAL NOTICE TO PROCEED – POGG1 PDAA 201800000673–Dominion Water and Sanitation District–Regional Factors for Precipitation Harvesting

Dear Mary Kay,

This letter is to inform you that the purchase order to assist in the above Colorado's Water Plan grant project has been approved. The documents attached to the email correspondence serve as your original contract documents.

With the executed agreement, you are now able to proceed with the project and invoice the State of Colorado for costs incurred through 6/30/2019. Please provide the project name and POGG1 number when corresponding with or invoicing for your project along with back-up documentation of cost incurred for the portion of the grant according to the original scope of work tasks. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 30 days after review and signed approval of the project manager.

Please refer to the CWP Grant Guidelines on our website for the six month progress report and final deliverable requirements in order to avoid a delay in payment. A 30-day advance notice in an official letter of request to the CWCB project manager is required in the event you are seeking an amendment to the term of this agreement.

If you have any questions or concerns regarding the project, please contact Kevin Reidy, Project Manager at 303-866-3441 x3252 or at Kevin.reidy@state.co.us. When submitting invoices and progress reports, please cc both the PM and waterplan.grants@state.co.us.

Thank you.

STATE OF COLORADO
Department of Natural Resources

ORDER
Number: POGG1 PDAA 201800000673
Date: 01/16/18
Description:
Water Plan Grant reg factor dev for precipitation harvesting
Effective Date: Expiration Date:

BUYER
Buyer:
Email:

VENDOR
DOMINION WATER AND SANITATION DISTRICT
1805 SHEA CENTER DRIVE #140
HIGHLANDS RANCH, CO 80129

Contact: SARA STONE
Phone: .

**** IMPORTANT ****
The order number and line number must appear on all invoices, packing slips, cartons and correspondence

BILL TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

SHIP TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

SHIPPING INSTRUCTIONS
Delivery/Install Date:
F.O.B:
VENDOR INSTRUCTIONS:

Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
1	G1000		0	0.00	$54,000.00	☐

Description: Water Plan Grant reg factor dev for precipitation harvesting

Service From: 02/01/18 Service To: 06/30/19

TERMS AND CONDITIONS
https://www.colorado.gov/osc/purchase-order-terms-conditions

DOCUMENT TOTAL = $54,000.00

Last Updated: July 5, 2017

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

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

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

Last Updated: July 5, 2017

regions of the State.
- Develop sample water budget accounting forms for administering precipitation harvesting using regional factors, and local climate data for future applicants.

Tasks

Provide a detailed description of each project task using the following format:

Task 1 – Document Current Precipitation Harvesting Legal Framework

Description of Task:

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.

Method/Procedure:

In collaboration with the State (CWCB & SEO) the following tasks will be completed to document the current precipitation harvesting framework:

- Develop a flow chart type schematic to help applicants navigate the legal framework for applying for a water right to capture precipitation.
- Establish and summarize the unique requirements associated with a precipitation harvesting SWSP.
- Work with SEO staff to identify the protocols and instrumentation required to properly administer harvested precipitation as a developed water supply.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

- 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.

CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task

- 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.

Last Updated: July 5, 2017

Tasks
Provide a detailed description of each project task using the following format:
Task 2 – Evaluation of Proposed Regional Factor Development Methodologies
Description of Task:
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.
Method/Procedure:
The following efforts are to be completed to further the proposed methodology: • 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. • 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. • 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. • 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. • 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. **This document will support the State's requirement to update the criteria and guidelines incentivizing applications to capture rainwater.**
Grantee Deliverable: Describe the deliverable the grantee expects from this task
• Through the development of the memo described below, the grantee seeks an approved method for the development of regionally applicable factors
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• A memorandum documenting the final approved methodology used to determine precipitation capture regional factors.

Last Updated: July 5, 2017

Tasks
Provide a detailed description of each task using the following format:
Task 3 – Summary of SITE SPECIFIC OBSERVED DATA
Description of Task:
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.
Method/Procedure:
Below is the approach for summarizing site specific data collected as from the Natural Conditions monitoring program at Sterling Ranch: • 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. • Perform QA/QC on datasets and document the process used to review each data set. • Format and organize data sets for use by both discrete and continuous models • 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). • 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. • Compile and review final evapotranspiration data set required for water balance and water budget.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
• A final data set that will be used as the basis for developing site specific factor and regional factors.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• A memorandum describing each data set and the review process completed. • A final data set that will be used as the basis for developing site specific factor and regional factors.

Last Updated: July 5, 2017

Tasks

Provide a detailed description of each task using the following format:

Task 4 – Site Specific and Regional Factor Development

Description of Task:

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.

Method/Procedure:

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.

- 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.
- 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.
- 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.
- 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.
- Update documentation of approved methodology with Proposed Regional Factors.

<u>State and Peer Review of Developed Regional Factors</u>

- 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.
- Work with State and peer reviewer to verify the data, process, and methods applied to calculate the site specific factors applicable to Sterling Ranch.
- 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.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

- 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.

Last Updated: July 5, 2017

Tasks
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• 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.

Tasks
Provide a detailed description of each task using the following format:
Task 5 –Sample Precipitation Harvesting Accounting Procedures Utilizing Regional Factors
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: • Identify required types of data inputs, time intervals for data collection, and required instrumentation for individual cisterns, and regional storage facilities. • 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. • Provide sample accounting to SEO staff for review and verification that it's administrable.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
• 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.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• 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.

Last Updated: July 5, 2017

Tasks
Provide a detailed description of each task using the following format:
Task 6 – Project Management and Progress Reports
Description of Task:
This task includes all planned project management and progress reports required for the duration of the project.
Method/Procedure:
Project Management: 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. **Progress Reports:** 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
• Project management tracking of project progress, budget, and schedule. • Project management tracking of CWP and applicant funding, and invoicing.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• Progress Reports meeting the requirement of the CWP grant.

Tasks
Provide a detailed description of each task using the following format:
Task 7 – Final Report
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:
Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: • Summarizes the project and how the project was completed.

Last Updated: July 5, 2017

Tasks
• Describes any obstacles encountered, and how these obstacles were overcome. • Confirms that all matching commitments have been fulfilled. • Includes photographs, summaries of meetings and engineering reports/designs.
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
• A final report meeting the CWCB grant reporting requirements.

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
Progress Reports: 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.
Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: • Summarizes the project and how the project was completed. • Describes any obstacles encountered, and how these obstacles were overcome. • Confirms that all matching commitments have been fulfilled. • Includes photographs, summaries of meetings and engineering reports/designs. 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.

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Water Plan Grant - Exhibit B
Budget and Schedule

Date: 01/11/2017

Name of Applicant: Dominion Water & Sanitation District

Name of Water Project: Regional Factor Development for Precipitation Harvesting

Task No.	Task Description	Start Date[(1)]	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	$ 8,050	$ 8,050	$ 16,100
3	Summary of Site Specific Observed Data	3/1/2018	6/1/2018	$ 9,250	$ 9,250	$ 18,500
4	Site Specific and Regional Factor Development	4/1/2018	8/1/2018	$ 21,700	$ 21,700	$ 43,400
5	Develop Sample Precipitation Harvesting Accounting Procedures Utililizing Regional Factors	8/18/2018	9/1/2018	$ 3,100	$ 3,100	$ 6,200
6	Project Management and Progress Reports	1/15/2018	10/25/2018	$ 3,900	$ 3,900	$ 7,800
7	Final Report	9/1/2018	10/25/2018	$ 4,200	$ 4,200	$ 8,400
Other Direct Costs and Admin Fees				$ 800	$ 800	$ 1,600
			Total	$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 "Start

·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 Grant

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Water Plan Grant - Detailed Budget Estimate

Date: 1/11/2018
Name of Applicant: Dominion Water & Sanitation District
Name of Water Project: Regional Factor Development for Precipitation Harvesting

	Water Consultants					Subconsultant	
Task	Senior Principal Engineer	Water Resources Project Manager	Water Resources Project Engineer	Water Resources Staff Engineer		Professional Engineer	
Hourly Costs	$ 255	$ 179	$ 144	$ 121	Subtotal	Lump Sum	Total
Task 1 - Document Current Precipitation Harvesting Legal Framework	**9.50**	**17.50**	**0.00**	**4.00**	**$ 6,039**	**$ -**	**$6,039**
Task 2 - Evaluation of Proposed Regional Factor Development Methodolgies	**8.00**	**26.00**	**0.00**	**28.00**	**$ 10,082**	**$ 6,000**	**$16,082**
Task 3 - Summary of Site Specific Observed Data	**4.00**	**12.00**	**10.00**	**115.00**	**$ 18,523**	**$ -**	**$18,523**
Task 4 - Site Specific and Regional Factor Development	**24.00**	**70.00**	**77.00**	**80.00**	**$ 39,418**	**$ 4,000**	**$43,418**
Task 5 - Sample Precipitation Harvesting Accounting Procedures Utilizing Regional Factors	**3.00**	**11.50**	**0.00**	**27.50**	**$ 6,151**	**$ -**	**$6,151**
Task 6 - Project Management and Progress Reports	**4.00**	**38.00**	**0.00**	**0.00**	**$ 7,822**	**$ -**	**$7,822**
Task 7 – Final Report	**8.00**	**26.00**	**0.00**	**14.00**	**$ 8,388**	**$ -**	**$8,388**
Subtotal Hours	**60.50**	**201.00**	**87.00**	**268.50**	**617.00**		**617.00**
Subtotal Labor/ Subcontractor cost	**$15,428**	**$35,979**	**$12,528**	**$32,489**	**$96,423**	**$ 10,000**	**$106,423**
Subcontractor Administration Fee (@ 5%)						**$ 500**	**$500**
Other Direct Costs (@1% of total costs)						**$ 1,080**	**$1,080**
TOTAL							**$108,003**

STATE OF COLORADO
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DOCUMENT TOTAL = $54,000.00

Last Updated: July 5, 2017

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

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

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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.
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- 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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regions of the State.
- Develop sample water budget accounting forms for administering precipitation harvesting using regional factors, and local climate data for future applicants.

Tasks

Provide a detailed description of each project task using the following format:

Task 1 – Document Current Precipitation Harvesting Legal Framework

Description of Task:

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Method/Procedure:

In collaboration with the State (CWCB & SEO) the following tasks will be completed to document the current precipitation harvesting framework:

- Develop a flow chart type schematic to help applicants navigate the legal framework for applying for a water right to capture precipitation.
- Establish and summarize the unique requirements associated with a precipitation harvesting SWSP.
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Grantee Deliverable: Describe the deliverable the grantee expects from this task

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The following efforts are to be completed to further the proposed methodology: • 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. • 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. • 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. • 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. • 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. **This document will support the State's requirement to update the criteria and guidelines incentivizing applications to capture rainwater.**
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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.
Method/Procedure:
Below is the approach for summarizing site specific data collected as from the Natural Conditions monitoring program at Sterling Ranch: • 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. • Perform QA/QC on datasets and document the process used to review each data set. • Format and organize data sets for use by both discrete and continuous models • 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). • 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. • Compile and review final evapotranspiration data set required for water balance and water budget.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
• A final data set that will be used as the basis for developing site specific factor and regional factors.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• A memorandum describing each data set and the review process completed. • A final data set that will be used as the basis for developing site specific factor and regional factors.

Last Updated: July 5, 2017

Tasks

Provide a detailed description of each task using the following format:

Task 4 – Site Specific and Regional Factor Development

Description of Task:

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.

Method/Procedure:

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.

- 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.
- 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.
- 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.
- 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.
- Update documentation of approved methodology with Proposed Regional Factors.

<u>State and Peer Review of Developed Regional Factors</u>

- 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.
- Work with State and peer reviewer to verify the data, process, and methods applied to calculate the site specific factors applicable to Sterling Ranch.
- 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.

Grantee Deliverable: Describe the deliverable the grantee expects from this task

- 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.

Last Updated: July 5, 2017

Tasks
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• 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.

Tasks
Provide a detailed description of each task using the following format:
Task 5 –Sample Precipitation Harvesting Accounting Procedures Utilizing Regional Factors
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: • Identify required types of data inputs, time intervals for data collection, and required instrumentation for individual cisterns, and regional storage facilities. • 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. • Provide sample accounting to SEO staff for review and verification that it's administrable.
Grantee Deliverable: Describe the deliverable the grantee expects from this task
• 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.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• 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.

Last Updated: July 5, 2017

Tasks
Provide a detailed description of each task using the following format:
Task 6 – Project Management and Progress Reports
Description of Task:
This task includes all planned project management and progress reports required for the duration of the project.
Method/Procedure:
Project Management: 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. **Progress Reports:** 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
• Project management tracking of project progress, budget, and schedule. • Project management tracking of CWP and applicant funding, and invoicing.
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
• Progress Reports meeting the requirement of the CWP grant.

Tasks
Provide a detailed description of each task using the following format:
Task 7 – Final Report
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:
Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: • Summarizes the project and how the project was completed.

Last Updated: July 5, 2017

Tasks
• Describes any obstacles encountered, and how these obstacles were overcome. • Confirms that all matching commitments have been fulfilled. • Includes photographs, summaries of meetings and engineering reports/designs.
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
• A final report meeting the CWCB grant reporting requirements.

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
Progress Reports: 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.
Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that: • Summarizes the project and how the project was completed. • Describes any obstacles encountered, and how these obstacles were overcome. • Confirms that all matching commitments have been fulfilled. • Includes photographs, summaries of meetings and engineering reports/designs. 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.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate

Date: 1/11/2018
Name of Applicant: Dominion Water & Sanitation District
Name of Water Project: Regional Factor Development for Precipitation Harvesting

	Water Consultants					Subconsultant	
Task	Senior Principal Engineer	Water Resources Project Manager	Water Resources Project Engineer	Water Resources Staff Engineer		Professional Engineer	
Hourly Costs	$ 255	$ 179	$ 144	$ 121	Subtotal	Lump Sum	Total
Task 1 - Document Current Precipitation Harvesting Legal Framework	**9.50**	**17.50**	**0.00**	**4.00**	**$ 6,039**	**$ -**	**$6,039**
Task 2 - Evaluation of Proposed Regional Factor Development Methodolgies	**8.00**	**26.00**	**0.00**	**28.00**	**$ 10,082**	**$ 6,000**	**$16,082**
Task 3 - Summary of Site Specific Observed Data	**4.00**	**12.00**	**10.00**	**115.00**	**$ 18,523**	**$ -**	**$18,523**
Task 4 - Site Specific and Regional Factor Development	**24.00**	**70.00**	**77.00**	**80.00**	**$ 39,418**	**$ 4,000**	**$43,418**
Task 5 - Sample Precipitation Harvesting Accounting Procedures Utilizing Regional Factors	**3.00**	**11.50**	**0.00**	**27.50**	**$ 6,151**	**$ -**	**$6,151**
Task 6 - Project Management and Progress Reports	**4.00**	**38.00**	**0.00**	**0.00**	**$ 7,822**	**$ -**	**$7,822**
Task 7 – Final Report	**8.00**	**26.00**	**0.00**	**14.00**	**$ 8,388**	**$ -**	**$8,388**
Subtotal Hours	**60.50**	**201.00**	**87.00**	**268.50**	**617.00**		**617.00**
Subtotal Labor/ Subcontractor cost	**$15,428**	**$35,979**	**$12,528**	**$32,489**	**$96,423**	**$ 10,000**	**$106,423**
Subcontractor Administration Fee (@ 5%)						**$ 500**	**$500**
Other Direct Costs (@1% of total costs)						**$ 1,080**	**$1,080**
TOTAL							**$108,003**

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate

Date: 1/11/2018
Name of Applicant: Dominion Water & Sanitation District
Name of Water Project: Regional Factor Development for Precipitation Harvesting

	Water Consultants					Subconsultant	
Task	Senior Principal Engineer	Water Resources Project Manager	Water Resources Project Engineer	Water Resources Staff Engineer		Professional Engineer	
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Subcontractor Administration Fee (@ 5%)						**$ 500**	**$500**
Other Direct Costs (@1% of total costs)						**$ 1,080**	**$1,080**
TOTAL							**$108,003**