COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: May 2021

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:

Water Storage & Supply Projects	Matthew.Stearns@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Water Sharing & ATM Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us* in the original ile formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	Dominion Water and Sanitation District
Name of Water Project	Sterling Ranch Rainwater Harvesting Pilot Project Infrastructure

CWP Grant Request Amount	$ 57,500
Other Funding Sources [redacted]	$ --
Other Funding Sources [redacted]	$ --
Other Funding Sources [redacted]	$ --
Applicant Funding Contribution	$ 57,500
Total Project Cost	$ 115,000

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Applicant & Grantee Information
Name of Grantee(s) Dominion Water & Sanitation District
Mailing Address 9250 E Costilla Ave, Suite 315, Greenwood Village, Colorado 80112
FEIN 73-1729122
Organization Contact – Andrea Cole, DWSD
Position/Title: General Manager
Email andrea.cole@dominionwsd.com
Phone 720 556 6840
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

Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
Dominion Water & Sanitation District (Dominion or DWSD) is a Title 32 Special District authorized to provide water and wastewater services to retail customers in northwest Douglas County. Dominion is the wholesale water and wastewater provider for Sterling Ranch Development and administrator of the state's irst precipitation pilot program at Sterling Ranch. Formed in 2004, Dominion has a mission to provide a new conjunctive use water supply that is seventy percent renewable, to an area with limited renewable water supply sources in accordance with the goals set in Douglas County's 2030 Comprehensive Master Plan. This project is instrumental in continuing to meet the goals of Dominion.

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Type of Eligible Entity (check one)	
	Public (Government): 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	**Public (Districts):** Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-pro it in nature.
	Covered Entity: As de ined in Section 37-60-126 Colorado Revised Statutes.

Type of Water Project (check all that apply)	
X	Study
	Construction
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)		
X	Water Storage & Supply - Projects that facilitate the development of additional storage, arti icial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity, multi-bene icial projects, water sharing agreements, Alternative Transfer Methods, and those projects identi ied in basin implementation plans to address the water supply and demand gap. *Applicable Exhibit A Task(s): all Exhibit A tasks* ***Note:*** *For Water Sharing Agreements or ATM Projects - please include the supplemental application available on the CWCB's website.*	
X	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, water ef iciency, and drought planning. *Applicable Exhibit A Task(s): all Exhibit A tasks*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. *Applicable Exhibit A Task(s):*	
	Agricultural - Projects that provide technical assistance and improve agricultural ef iciency. *Applicable Exhibit A Task(s):*	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

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Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Douglas County
Latitude	39.485993
Longitude	-105.069815

Water Project Overview
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 speci ically (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. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.
After over a decade of data collection supporting the legal right to harvest rainwater as a water supply, Dominion Water & Sanitation District (Dominion) is moving forward with the implementation of the state's irst regional rainwater harvesting (RWH) collection system at Sterling Ranch. This design-build project is an extension and retro it of existing stormwater infrastructure to facilitate the diversion, storage, and distribution of rainwater for non-potable use. Dominion has selected Prospect Village as the location of the irst planned regional rainwater harvesting at Sterling Ranch. Prospect Village includes two existing stormwater facilities, a regional park with non-potable demand, and existing infrastructure and easements for the distribution of rainwater harvested. Prior to the design and construction of the rainwater system a Feasibility Study and Operations Plan needs to be completed. The Feasibility Study will investigates project requirements, design criteria, and opinion of probable costs. The operations plan will de ine how rainwater will be legally harvested and administered as a non-potable supply. The completion of the Feasibility Study and Operations Plan will allow Dominion to make important planning decisions supporting the design, construction, and future funding for the project. Dominion is seeking a Colorado Water Plan Grant supporting the development of a Feasibility Study and Operations Plan to further the understanding of rainwater as a viable water supply.

Measurable Results	
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:	
5-15 acre-feet/project*	New Storage Created (acre-feet)

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40-50 acre-feet/year/project**	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)	
TBD***	Ef iciency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement	
~30,000 Coloradans ****	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
All Coloradans*****	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

*New storage developed is dependent on legal allowable harvest, physical yield, and infrastructure capture volumes. Project configurations support between 5 to 15 acre-feet/project or 25 to 75 acre-feet total of new storage created.
**400 acre-feet/year was the original estimated yield identified in the South Platte BIP as an IPP for Sterling Ranch for harvesting the entire site. Five targeted sites have been selected at Sterling Ranch, supporting between 200 to 250 acre-feet total or 40 to 50 acre-feet/project, depending on the final project configuration.
***Understanding the Efficiency Savings of rainwater harvesting on a regional scale is included in the project objectives for the Feasibility Study.
****~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.
*****This project is the first implementation of legally harvest rainwater on a regional scale, benefitting all Coloradans and the future of rainwater as a viable water supply.

Water Project Justi ication

Provide a description of how this water project supports the goals of Colorado's Water Plan, the Analysis and Technical Update to the Water Plan, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. 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).

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;)

This Grant will directly support Precipitation Harvesting Pilot Program's based on the development and capture of precipitation from new real estate developments as a viable water supply without harming existing water right owners. Below is a summary of the justi ication for the project and a description of how the project supports the goals and identi ied water values of the Colorado Water Plan and South Platte BIP.

South Platte & Metro BIP DRAFT Update

Goal 1: Maximize development of native South Platte supplies

- Strategy 2.A – storage solutions, ef icient usage, enhanced supply reliability in compliance with prior appropriation
  - *This RWH Pilot Project would enhance renewable supplies, locally, increase reliability of other conjunctive water sources, and, legally be con irmed using DWR's memo on the steps to take pilot projects through water court. This will be the irst project of this kind.*
- Strategy 2.C – sharing data/info on best practices, effective methods, tech advancements to maximize use in the basin
  - *Past Sterling Ranch data and methods have been shared via Water Plan grant deliverables. This feasibility study will give us the opportunity to work closely with high-tech stormwater management experts to determine how we can use forecasting, automated control, and live online control of operations.*

Goal 3: Maintain/promote municipal conservation/ef iciency

- Strategy 3.A – challenges/tradeoffs of different options
  - *The RWH Pilot Project program's intent is to develop data on the challenges and opportunities of RWH for outdoor use in new developments. This feasibility study will further elucidate barriers and tradeoffs in the design of rainwater capture facilities.*
- Strategy 3.C – encourage innovation & ef iciency improvements
  - *This pilot project is an opportunity to further the state's understanding of alternative supply options and how system-level management, with on-site resources, may lead to reduced demand stress.*
- Strategy 3.E – implementation of wise land use planning strategies while minimizing the demand for water for existing and new development.
  - *Sterling Ranch has included water conservation in planning throughout its history.*

Goal 12: Improve ef iciency and effectiveness of water project permitting

- Strategy 12.B Sharing strategies and lessons learned from water project permitting process
  - *This pilot project will be the irst water court application for an augmentation plan, and irst SWSP, for RWH in the State of Colorado. The feasibility report will include examination of legal feasibility and the water court process.*

<u>Colorado Water Plan (CWP)</u>

Chapter 5 of the Water Plan update inds that 'projected decreases in outdoor demand resulting from implementation of conservation measures in some scenarios was offset by increases in outdoor demand due to climate change.' Due to these effects, as well as continued development, outdoor demand will not disappear from the municipal category. 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.

Does the project reduce overall future water needs through cost-effective water ef iciency 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 irm 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 ef iciency 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 ef iciency 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 ef iciency ethic throughout Colorado?

Yes, the implementation of RWH factors and promotion of precipitation harvesting supports water conservation, water quality enhancement, and ef icient 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, in luencing not just water providers, but the users of our water resource.

Does the project explore additional water reuse options?

Not at this time. However at Sterling Ranch, Precipitation harvesting is part of an integrated raw water system that includes reuse of other water sources that allow the community to reliably deliver to non-potable water uses.

Does the project integrate land use and water planning?

Yes, the development of a regional precipitation harvesting system is reliant on the integration of land use and water planning. This supply is relies on the precipitation runoff from hardscape land uses, is captured from stormwater facilities, and combined with other water sources to meet irrigation demands of parks and open spaces.

Does the project advance conservation planning efforts?

Yes, The development of a regional precipitation harvesting system requires more data collection and detailed water supply planning for the ef icient use of precipitation. Taking advantage of water supplies onsite reduces transit losses and energy consumption to bring other water sources to the site. In basins where precipitation harvesting occurs, the basin's bene icial 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 irm 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 bene it 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 bene its of water conservation. Precipitation harvesting has the same or similar bene its:

- Water savings resulting from water ef iciency 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 ef icient use of infrastructure reducing non-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 bene its, Colorado can achieve other societal, political, and environmental bene its, 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 by offsetting non-potable demands. Operationally the integration, planning, and implementation of a precipitation harvesting system reaf irms Dominion's commitment to sustainability, conservation and effective demand management.

    - 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 de ined 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 identi ied 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 speci ically 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 irm and potentially more. Assuming all Pilot Programs are developed in the future, that is nearly 4,000 acre-feet or potentially 1% of the identi ied goal. This project supports the development of precipitation as a viable water supply and incentivizes additional Pilot Programs by paving the way forward through feasibility and water court toward infrastructure and operational permission.

"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 de ined in SWSI."

Regional precipitation harvesting combined with a conjunctive use water supply system requires comprehensive integrated water resource planning. Sterling Ranch's, a retail customer of Dominion, 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 de ined 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 monitoring, 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 technical peers to implement RWH factors and the legal framework identi ied in deliverables from the previous pilot project grant awarded to this team.

Does the project proponent address an identi ied water gap?

The Sterling Ranch Pilot Program is a Consumptive Identi ied Project and Process (IPP) in the South Platte BIP and is included the basin projects matrix (BIP update Appendix C) under Project ID MET-2020-21 in the 2022 BIP update. The project will reduce non-potable demands in the basin through

conservation at Sterling Ranch and use of on-site raw-water supply. 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 to offset 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 iscal and technical feasibility of the project?

The previous development of regional factors to support precipitation harvesting pilot programs shows it is technically feasible. The relatively small cost of designing and costing out the proposed project has huge bene its statewide for development of future RWH projects.

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.

The RWH Pilot Program has been ongoing in Colorado since 2009, and the Sterling Ranch project has been active for that full period. DWSD and LRE Water have been engaged with the CWCB and DWR to further the pilot project program through development of generalized RWH factors that can be used across the state for SWSPs in lieu of extensive on-site data requirements. The design and construction of the irst active RWH Pilot Project infrastructure will assist the state in achieving the ultimate goal of the pilot project legislation—extensive data pre- and post-development to understand both the challenge and promise of RWH as a renewable supply in Colorado.

Related studies/reports include the generalized RWH Factors approved by CWCB in Sept. 2019 (DWR report), methodology for site-speci ic accounting, and a memo outlining the legal framework of RWH pilot project SWSP/augmentation plans.

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

Grant deliverables for 2018 Colorado Water Plan Grant – Regional Factor Development for Precipitation Harvesting (LRE Water, July 2020).

HB15-1016 Rainwater Harvesting Pilot Project Regional Factors (Division of Water Resources, September 2019)

Previous CWCB Grants, Loans or Other Funding

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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: Percent CWCB Funding: 50% ($47,500) Grant Type: Colorado's Water Plan grant Grant Amount: $108,000 Project Date: January 16, 2018 Project Name: "*Regional Factor Development for Precipitation Harvesting"* Project Deliverable: LRE Water Task Memo reports, Division of Water Resources report on Regional Factors, memo describing legal process for RWH pilot project SWSP or augmentation plan. 1. Applicant Name(s): Dominion Water & Sanitation District 2. Water Activity Name(s): Regional Factors for Precipitation Harvesting 3. Approving RT: Metro 4. CWCB Board Meeting: (Under 50K, no Board approval necessary) 5. Contract Number/Purchase Order: POGG1 PDAA 201800000673 Percent CWCB Funding: 50% ($54,000)

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.
N/A

Submittal Checklist	
X	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.

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X	Statement of Work (Exhibit A)(1)
X	Budget & Schedule (Exhibit B)(1)
	Engineer's statement of probable cost (projects over $100,000)
X	Letters of Matching and/or Pending 3rd Party Commitments(1)
X	Map (if applicable)(1) (Exhibit C)
X	Photos/Drawings/Reports (Exhibit D)
X	Letters of Support (Pending Metro Basin Round Table & Mile High Flood District)
X	Certi icate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certi icate of Good Standing with Colorado Secretary of State(2)
X	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Water Sharing Agreements and Alternative Transfer Methods ONLY	
	Water Sharing Agreements and Alternative Transfer Methods Supplemental Application(1)

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

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**December 1, 2021**
Name of Grantee:	**Dominion Water & Sanitation District**
Name of Water Project:	**Sterling Ranch Rainwater Harvesting Project Feasibility Study and Operational Plan**
Funding Source:	**CWCB, Dominion Water & Sanitation District**

Water Project Overview:

After over a decade of data collection supporting the legal right to harvest rainwater as a water supply, Dominion Water & Sanitation District (Dominion) is moving forward with the implementation of the state's first regional rainwater harvesting (RWH) collection system at Sterling Ranch. This design-build project is an extension and retrofit of existing stormwater infrastructure to facilitate the diversion, storage, and distribution of rainwater for non-potable use.

Dominion has selected Prospect Village as the location of the first planned regional rainwater harvesting at Sterling Ranch. Prospect Village includes two existing stormwater facilities, a regional park with non-potable demand, and existing infrastructure and easements for the distribution of rainwater harvested.

Prior to the design and construction of the rainwater system a Feasibility Study and Operations Plan needs to be completed. The Feasibility Study will investigates project requirements, design criteria, and opinion of probable costs. The operations plan will define how rainwater will be legally harvested and administered as a non-potable supply. The completion of the Feasibility Study and Operations Plan will allow Dominion to make important planning decisions supporting the design, construction, and future funding for the project. Dominion is seeking a Colorado Water Plan Grant supporting the development of a Feasibility Study and Operations Plan to further the understanding of rainwater as a viable water supply.

Project Objectives:

Complete a feasibility study and operational plan that support the design, construction, and operation of a regional RWH project at Sterling Ranch.

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Tasks

Task 1 – Project Description, Objectives, and Preliminary System Configuration

Description of Task:

Task 1 focuses on defining the project, working from conceptual schematics and descriptions to define project components, project objectives, and system configurations. This task is important to communicate project objectives and vision to the project team.

a. **Project Description -** Develop a detailed description of all project components and systems supporting: 1) the collection, conveyance, storage, and distribution of rainwater for non-potable use and; 2) the operation and administration of rainwater as a raw water supply.

b. Project Objectives - Define and clarify the following project objectives:

- Maintains existing stormwater infrastructure function;
- Collects harvest rainwater prior to storage/detention in stormwater facilities avoiding 2019 stormwater statutes (i.e. 72 hour rule);
- Operates within the legal framework for harvesting rainwater in Colorado;
- Meets Dominion's interim standards for RWH and water supply objectives;
- Meets operational/design criteria to allow the system operate autonomously and potentially controlled remotely;
- Define and meet local permitting and regulatory requirements;
- Fit within the proposed site requirements;
- Maximizes system yield and minimizes system development cost.

c. System Configurations - Configure the following system components to meet project objectives:

- Rainwater conveyance and collection system;
- Non-potable distribution system;
- Stormwater system integration;
- Augmentation infrastructure;
- Water quality/treatment system;
- Monitoring systems;
- Operational/control components;
- Administration and reporting

Method/Procedure:

Dominion has identified a project team of experts supporting four primary components of the project that include: 1) legal administration 2) monitoring and reporting 3) operations and control 4) design and implementation. A two hour project kick-off/workshop will be held with the project team to support the project understanding, define objectives, and determine potential project configurations. After the initial workshop, the project team will work collaboratively to refine project objectives, project components, and system configurations.

Deliverable:
Task 1 Memorandum describing the project, the key objectives, and potential system configurations supporting the storage and conveyance of collected rainwater, non-potable distribution, treatment, and integration with existing stormwater infrastructure. The memorandum will provide updated schematics of a preliminary system configuration that meets project objectives and provides guidance for subsequent tasks.

Tasks
Task 2 – Administration and Operations Plan
Description of Task:
Based upon previous work completed supporting the methods for legally administering rainwater and the information from Task 1. Develop an administration and operations plan to functionally, practically, legally harvest rainwater on a regional scale. Define how the site specific system will: • Work functionally to convey, measure, divert, and store rainwater for a set volume of storm events; • Operate to augment out-of-priority rainwater collection; • Distribute collected rainwater to the non-potable system to meet demands; • Continue to maintain stormwater functions mitigating extreme events and water quality.
Method/Procedure:
The project team will work collaboratively to develop the administration and operations plan that ensures the preliminary project configuration meets criteria necessary to administer rainwater as a legal water supply and that the project is operationally and technically feasible.
Deliverable:
A memorandum detailing the administration and operations plan to functionally, practically, legally harvest rainwater on a regional scale.

Tasks
Task 3 – Site Specific Project Requirements, Specification, and Design Criteria
Description of Task:
Using the project description, objectives, and preliminary project configuration from Task 1 and the administration and operations plan from Task 2, develop the project requirements, specifications, and general infrastructure design criteria. This task will detail site specific project requirements/specifications and/or design criteria for the following: a. Water Rights Requirements • CDWR - SWSP and Augmentation Plan b. Rainwater Harvesting Requirements • Definition of Physical and Legal Yield

- Administrative requirements (measurement and reporting)

c. Rainwater Infrastructure Design Criteria
- Diversion/Storage (~80% runoff volume captured)
  - Sizing (optimization based on flow, demands, site limitations, costs, etc.)
- Above or below ground storage?
- Pumps and pipelines to place of use
- Non-potable distribution - Pumps and Pipes

d. Operations and Control
- Smart stormwater technologies (i.e. Continuous Monitoring and Adaptive Control (CMAC))
- SCADA
- Forecasted precipitation

e. Monitoring and Reporting Requirements
- Storm types and totals
- System and administrative monitoring and reporting requirements

f. Stormwater Requirements/Integration

g. Water Quality/Treatment Requirements
- Define non-potable water quality standards
- Define infrastructure/treatment requirements

h. Regulatory Permitting
- Douglas County - Permitting
- MDFCD - Drainage Criteria
- CDPHE – Water Quality Requirements
- Other considerations permitting/regulatory requirements

i. System Redundancy/Reliability

j. Maintenance

Method/Procedure:

The project team will work collaboratively to develop project requirements, specifications, and general infrastructure design criteria supporting refinements to the preliminary project configuration and the opinion of probable cost under Task 4.

Deliverable:

A memorandum defining project requirements, specifications, and general infrastructure design criteria supporting refinements and updates to the preliminary project configuration.

Tasks

Task 4 – Final Project Configuration and Opinion of Probable Cost

Description of Task:

Refine and update the preliminary project configuration defined in Task 1 to include project requirements, specifications, and general infrastructure design criteria from Task 3. Finalize the project configuration, specifications, and infrastructure design criteria to support the development of a comprehensive opinion of probable cost. Develop a comprehensive opinion of probable cost that includes estimated costs for: 1) for the

design and construction of required infrastructure to convey and storage of collected rainwater, non-potable distribution, treatment, and integration with existing stormwater infrastructure; 2) system operations and control; and 3) monitoring and reporting to support the legal administration of the rainwater system.
Method/Procedure:
The project team will work collaboratively to finalize the project configuration, specifications, and infrastructure design criteria. Team members specializing in legal administration, monitoring and reporting, operations and control, and design and construction will prepare an opinion of probable cost for the design and construction of the facility, and implementation of the project.
Deliverable:
1) Schematics and drawings supporting the final configuration of the project and a summary memorandum defining project requirements, specifications, and general infrastructure design criteria; 2) A comprehensive opinion of probable cost to design, construct, and operate the project.

Tasks
Task 5 – Project Feasibility Evaluation
Description of Task:
This task will focus on the feasibility of the project. A matrix will be developed to determine if the project is: • Physically Feasible • Legally Feasible • Operationally Feasible • Technically Feasible • Permissible • Financially Feasible
Method/Procedure:
Memorandums from Task 1 through 4 will provide the necessary supporting materials and information required for developing the Feasibility Matrix. The project team will work collaboratively on the development of a decision matrix for determining if the project is feasible, highlighting key obstacles and considerations.
Deliverable:
A memorandum and Feasibility Matrix evaluating the project components.

Last Updated: May 2021

Tasks

Task 6 – Final Feasibility Study Findings and Report

Description of Task:

Compile and summarize the Feasibility Study findings for Task 1 through Task 5 into a final report supporting the feasibility of the precipitation harvesting project, including final conclusions, recommendations, and cost-benefit for the feasibility of the project as an addition to Dominion's water portfolios. The final report is to include a clear description of the final project configuration, system criteria, and general design specifications allowing the project to move easily into the design and construction phase. As well as a summary of project yields and cost supporting Dominion's return on investment of the project and efficiency savings associated with pairing rainwater with water conservation practices. The operations, control, and administration section of the report will summarize how the system will function to legally harvest and administer rainwater as a supply, while still maintaining stormwater function for extreme events.

Method/Procedure:

Memorandums from Task 1 through 3 and the Feasibility Matrix from Task 4 will provide the necessary supporting materials and information required for developing the final report conclusions and recommendations. The project team will work collaboratively on the development of the final report.

Deliverable:

A final Feasibility Study report summarizing conclusions, project considerations, and recommendations for the conveyance and storage of collected rainwater, non-potable distribution, treatment, and integration with existing stormwater infrastructure. The report will include a clear description of the final project configuration, requirements, specification, and design criteria allowing the project to move easily into the design and construction phase.

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.

Last Updated: May 2021

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 pay out the last 10% of the budget when 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.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following:
(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit C. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when 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.
(b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.
(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.
(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit B

Budget and Schedule

Prepared Date: 12/1/2021

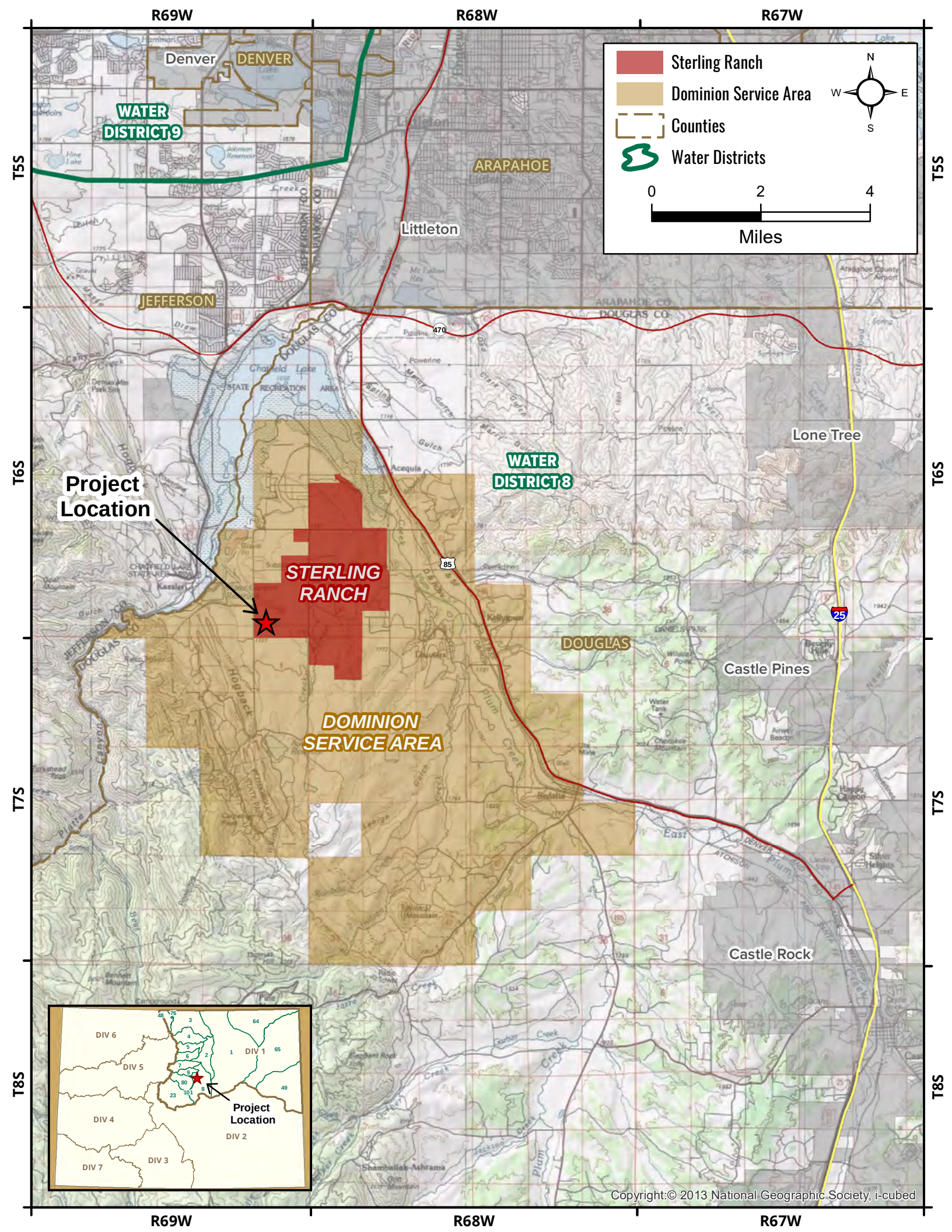
Name of Applicant: Dominion Water & Santiation District

Name of Water Project: Sterling Ranch Rainwater Harvesting Project Feasibility Study and Operations Plan

Project Start Date: 4/1/2022

Project End Date: 7/1/2022

Task No.	Task Description	Task Start Date	Task End Date	Water Consultant (LRE Water)	Monitoring & Telemetry Subcontractor (OneRain)	Operations & Control Subcontractor (OptiRTC)	Stormwater Engineer Subcontractor	Total	Grant Funding Request	Match Funding
1	Project Description, Objectives, and Preliminary System Configuration	$ 44,652	$ 44,666	$ 4,000	$ 2,000	$ 2,000	$ 2,000	$ 10,000	$ 5,000	$ 5,000
2	Administration and Operations Plan	4/10/2022	5/1/2022	$ 10,000	$ 5,000	$ 9,000	$ 1,000	$ 25,000	$ 12,500	$ 12,500
3	Site SpecificProject Requirements, Specification, and Design Criteria	5/2/2022	6/10/2022	$ 6,500	$ 5,000	$ 6,500	$ 12,000	$ 30,000	$ 15,000	$ 15,000
4	Final Project Configuration and Opinion of Probable Cost	5/2/2022	6/10/2022	$ 4,000	$ 2,500	$ 2,500	$ 9,000	$ 18,000	$ 9,000	$ 9,000
5	Project Feasibility Evaluation	5/28/2022	6/10/2022	$ 9,000	$ 2,000	$ 3,000	$ 6,000	$ 20,000	$ 10,000	$ 10,000
6	Final Feasibility Study Findings and Report	6/10/2022	7/1/2022	$ 5,000	$ 2,000	$ 2,000	$ 3,000	$ 12,000	$ 6,000	$ 6,000
Total				**$ 38,500.00**	**$ 18,500.00**	**$ 25,000.00**	**$ 33,000.00**	**$115,000.00**	**$ 57,500.00**	**$ 57,500.00**


R69W
R68W
R67W
T5S
T6S
T7S
T8S
Sterling Ranch
Dominion Service Area
Counties
Water Districts
N
S
E
W
0
2
4
Miles
Denver
DENVER
WATER DISTRICT 9
ARAPAHOE
Littleton
JEFFERSON
DOUGLAS CO
ARAPAHOE CO
Lone Tree
WATER DISTRICT 8
Project Location
STERLING RANCH
DOMINION SERVICE AREA
DOUGLAS
Castle Pines
Castle Rock
DIV 1
DIV 2
DIV 3
DIV 4
DIV 5
DIV 6
DIV 7
Project Location
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