



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 file 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	Cross Creek Metropolitan District
Name of Water Project	Hale Reservoir Restoration, Cross Creek Park
CWP Grant Request Amount	\$ 750,000
GOCO & El Paso County Urban Park Grant	\$500,000 & \$25,000
Other Funding Sources <u>COP-FOUNTAIN</u>	\$ 3,500,000
Other Funding Sources <u>CCMD CTF FUNDS</u>	\$ 145,000
Applicant Funding Contribution	\$ 882,271
Total Project Cost	\$ 5,802,271



Last Updated: May 2021

Applicant & Grantee Information	
Name of Grantee(s)	Cross Creek Metropolitan District
Mailing Address	P.O. Box 1834, Colorado Springs, CO 80901
FEIN	73-1694343
Organization Contact	Elise Bergsten
Position/Title	District Manager
Email	elise.balancedmgmt@gmail.com
Phone	(719) 963-1809
Grant Management Contact	Elise Bergsten
Position/Title	District Manager
Email:	elise.balancedmgmt@gmail.com
Phone:	(719) 963-1809
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).	
Cross Creek Metropolitan District is a Title-32 Special District located in the Arkansas Basin, at 8115 Parkglen Avenue, Fountain CO 80817. District functions include Parks and Recreation (Education and Outreach) and Stormwater Management. The District's Cross Creek Park is a 60-acre tract which provides multiple environmental and recreational amenities. These include Hale Reservoir (W-1418), with a pond, wetlands, and riparian habitat. Hale Reservoir will be reconstructed to mitigate storm water runoff and alleviate flooding. The project serves multiple purposes: recreation, water quality improvements, wetland restoration, species habitat enhancement, education and as a non-potable water source park turf irrigation.	



Last Updated: May 2021

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-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes .

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

Category of Water Project (check the primary category that applies and include relevant tasks)	
X Primary	Water Storage & Supply - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity, multi-beneficial projects, water sharing agreements, Alternative Transfer Methods, and those projects identified in basin implementation plans to address the water supply and demand gap. <i>Applicable Exhibit A Task(s):</i> 1. Construct a new dam to increase water storage capacity at Hale Reservoir while mitigating an historic and on-going flooding challenge, creating new species habitat (wetlands) and a regional recreational amenity with water outreach and education initiatives. 6. Eliminate flood risk from storm events while protecting water quality. <i>Note: For Water Sharing Agreements or ATM Projects - please include the supplemental application available on the CWCB's website.</i>
✓	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, water efficiency, and drought planning. <i>Applicable Exhibit A Task(s):</i> 7. Transition from a potable to nonpotable irrigation mode, conserving 10-15 acre-feet annually.
✓	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. <i>Applicable Exhibit A Task(s):</i> 3. Construct recreational amenities for access to the restored reservoir including an ADA-Accessible fishing ramp and bird watching blinds. 5. Provide educational signage and develop educational programing related to the aquatic and wetland habitat and species.



Last Updated: May 2021

	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. <i>Applicable Exhibit A Task(s):</i>	
✓	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. 2. Develop 10-15 acres of new wetland areas. 4. Restore 3-4 acres of nonjurisdictional wetlands following construction. <i>Applicable Exhibit A Task(s):</i>	
✓	Other	8. Provide subregional water quality structures upstream of the restored reservoir for improvement of nonpotable water supply and enhanced species habitat.

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/Countries	El Paso County
Latitude	38.711
Longitude	104.685

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 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.

The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.



Last Updated: May 2021

Cross Creek Metropolitan District (CCMD) was formed in El Paso County in November 2003. The purpose of CCMD is to construct and maintain a regional park in Southern El Paso County and the City of Fountain. The Hale Reservoir dam has breached twice in storm events (pre-2012) and been restored at the expense of the CCMD. This grant request's purpose is to rehabilitate Hale Reservoir dam, a historic farm pond decreed in Water Division 2, Case No. W-1814, with a Priority Date of July 19, 1945. W-1814 further states: "*this right shall be junior...to 1972.*" The District has procured and conveyed to the City of Fountain ditch company water shares to cover the evaporative loss of the historic structure. The enhanced reservoir will be included in the City of Fountain's blanket well augmentation plan.

New capacity for 72-hour stormwater storage of 10+/- acre-feet, combined with water quality mitigation infrastructure, will support creation of 7.5 or more acres of new wetland habitat (10-15 acres with buffering features). The new pond will provide a source for nonpotable irrigation for the park's five acres of turfed recreation facilities. Combined with restoration of 3.5+/- acres of non-jurisdictional wetland and extensive recreational amenities, including an ADA-accessible fishing pier and boardwalk, this community asset will become a showcase for multi-purpose water resource projects. Educational signage will enhance the communities' enjoyment of the upgraded environmental assets. Collaborating with the City of Fountain, the project partnership is an exemplar of regional cooperation to address water quality, stormwater mitigation, public safety, environmental restoration and recreational amenities.

Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
10+/-	New Storage Created (acre-feet)	
10-15 AF Conserved	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
55 AF	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
\$22,000-\$43,000	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
10-15 acres +/-	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
3 mi radius +/- 40,000	Number of Coloradans Impacted by Engagement Activity	
Fort Carson Military Reservation (U.S. Army)	Other	Explain: Fountain is the host community for Fort Carson. Many of the troops stationed at Fort Carson use Cross Creek Park with their young families.



Last Updated: May 2021

Water Project Justification

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 project conforms to the CWP Framework, Chapter 10, in the following ways:

1. The project proponent has demonstrated a commitment to collaboration in working with project partner City of Fountain to address multiple needs:

A. Conservation: This water activity will conserve an estimated 10 – 15 acre-feet of potable water each year. Non-potable water will replace potable water, and will be augmented with inexpensive effluent return flows, in partnership with the City of Fountain.

B. Multiple Participants: The CCMD Board of Directors are volunteers from the adjacent community. A second metropolitan district to the East of the park is contributing park fees to City of Fountain for construction of recreational amenities.

C. Consult and Provide Opportunity for Input: Hale Reservoir was cited in the Arkansas Basin Plan as a project with a defined Plan of Action. Most recently, the project proponent briefed the Environment and Recreation Committee of the Basin Roundtable and received constructive input and a declaration of support pending review of the application.

2. The project addresses an identified water gap when Hale Reservoir was cited in the Arkansas Basin Plan as a project with a defined Plan of Action. Since the 2015 Ark BIP, Hale Reservoir has emerged as a top bird-watching location and is poised to meet Nonconsumptive Needs identified in the Ark BIP update.

3. The project demonstrates sustainability by:

A. Enhancing storm runoff water quality to provide a sustainable nonpotable irrigation source;

B. Maximizes the use of water resources by restoring a water reservoir and using expanded 72-hour storage capacity to develop new wetland and riparian habitat; and

C. Assure the expanded water body is fully augmented as required by the Arkansas River Compact and subsequent *Kansas v. Colorado* lawsuit.

4. The project as redesigned meets the most current technical feasibility by capturing 72-hour storage to create and enhance the environmental attributes of a community park that has become a local favorite for bird watchers.

5. The project as proposed is a partnership with the City of Fountain, who is stepping up with Certificate of Participation (COP) funds in the amount of \$3,500,000. CCMD itself provides a significant cash match and a recurring revenue stream for maintenance of the new facilities and COP repayment.

6. The project is ready to proceed, with CCMD funded updated reservoir design and permitting at 90% completion, a wetland creation and enhancement plan in design and a commitment from Fountain for leased augmentation supplies in support of the nonpotable irrigation. Preliminary design of the nonpotable well structure is complete. The project will be shovel-ready by end of year 2021.

Here are specific references in Chapter 10 that the project addresses: Page 10-8 A. Supply-Demand Gap Meet Colorado's Water Gaps

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.



Last Updated: May 2021

Not a study, but a link to the Cross Creek Park e-bird hot spot: <https://ebird.org/hotspot/L5094073>. 173 species of birds have been spotted at the park since it became a hot spot a few years ago, a remarkable number for a park of its size. Healthy wetlands and upland prairie contribute to the variety of birds spotted.

In 2012, the CWCB approved a grant for final design and permitting of this project. That design was completed in 2013, but construction funding was not available following design and permit approvals. Currently, CCMD has been able to self-fund an update to dam design and permitting. New rules regarding stormwater, water quality and flooding are incorporated in the design edits. These edits are 90% complete, and updated permitting is also underway.

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.

WSRF Grant 2013

Applicant: Cross Creek Metropolitan District

Water Activity Name: Hale Reservoir Renovation – Final Design & Permitting

Approving Roundtable: Arkansas Basin Roundtable

CWCB Board Meeting Date: September 2012

Contract Date: December 31, 2012

Contract Number: C150504

Percentage of other CWCB funding for overall project: none

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.

CCMD will remain compliant with all TABOR requirements if the grant/loan package is approved, as will City of Fountain.



Last Updated: May 2021

Submittal Checklist	
X	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract .
	Statement of Work ⁽¹⁾
X	Budget & Schedule ⁽¹⁾
X	Engineer's statement of probable cost (projects over \$100,000)
	Letters of Matching and/or Pending 3 rd Party Commitments ⁽¹⁾
	Map (if applicable) ⁽¹⁾
	Photos/Drawings/Reports
	Letters of Support (Optional)
	Certificate of Insurance (General, Auto, & Workers' Comp.) ⁽²⁾
	Certificate of Good Standing with Colorado Secretary of State ⁽²⁾
	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.

Last Updated: May 2021

ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

Colorado's Water Plan calls for an outreach, education, public engagement, and innovation grant fund in Chapter 9.5.

The overall goal of the Engagement & Innovation Grant Fund is to enhance Colorado's water communication, outreach, education, and public engagement efforts; advance Colorado's water supply planning process; and support a statewide water innovation ecosystem.

The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
The Project brings an historic farm pond into the 21 st Century with respect to water quality, recreational access for handicapped citizens, educational signage and enhanced species habitat.
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
The Project achieves the goals and objectives of a Title 32 Metropolitan District governed by a board of citizen volunteers. The regional park serves a population of 40,000+ persons, including many military service members, with events, recreational amenities (5 acres of irrigated turf) and an annual clean up event.
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?
The largest contribution to the Project budget is by the City of Fountain, the land use authority that entitled the Cross Creek Metropolitan District in 2003. The Project includes collaboration with the Mesa Ridge Metropolitan District #2, an entity formed to the East, and abutting the park. Park fees paid to the City of Fountain will contribute to the overall development of the regional park. An anticipated grant application to El Paso County Parks will tap into funds reserved for park facilities in urban locations.



Last Updated: May 2021

Describe how you plan to measure and evaluate the success and impact of the project?
The District will track the feedback from the Project on its website and social media to obtain anecdotal evidence of positive results. The District provides an online reservation system. Year over year comparison of community reservations will provide empirical data of the anticipated uses.
What research, evidence, and data support your project?
173 species of birds have been spotted at the park since it became a birding hot spot a few years ago, a remarkable number for a park of its size. Healthy wetlands and upland prairie contribute to the variety of birds spotted. (see link above)
Describe potential short- and long-term challenges with this project.
The short term challenge is assembling the funding to match the project costs, which keep moving upward in this period of inflation and limited supply. The long-term challenge will be managing the Project assets to maintain the quality of the facility. This Project may be challenged by too much love for this type of recreational facility.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado's Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
The primary method will be signage and constructed trails, along with the ADA fishing dock. Working with the City of Fountain Utilities, the Project expects to highlight the cost and water savings associated with the nonpotable irrigation system. Collaborating with El Paso County Parks, the Project expects to highlight the importance of wetlands and species habitat, particularly for primary and middle school age children.
Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
The importance of public safety with respect to stormwater runoff will be highlighted in the reconstruction of the Hale Reservoir dam. With water quality features, the updated and enlarged structure will demonstrate the opportunity to achieve water quantity, quality, recreation and environmental objectives in an integrated fashion.



Last Updated: May 2021

Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).
The City of Fountain Utilities plays a leading role in the Arkansas Basin Roundtable and implementation of the Arkansas Basin Implementation Plan. The Utilities' outreach programs will periodically feature the Project, combined with regular reports to the Fountain City Council.
Describe how the project achieves the basin roundtable's PEPO Education Action Plans.
The Project presents an opportunity to connect with young people to help them understand the relationship between water quantity, water quality and the natural environment.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.



Last Updated: May 2021

Colorado Water Conservation Board

Water Plan Grant - Exhibit A

Statement Of Work

Date:	November 10, 2021
Name of Grantee:	Cross Creek Metropolitan District
Name of Water Project:	Hale Reservoir Restoration Project
Funding Source:	Multiple, including a CWCB project loan to City of Fountain
Water Project Overview:	
Cross Creek Metropolitan District (CCMD) was formed in El Paso County in November 2003. The purpose of the CCMD is to construct and maintain a regional park in Southern El Paso County and the City of Fountain. The Hale Reservoir dam has breached twice in storm events and been restored at the expense of the CCMD. This grant request's purpose is to rehabilitate Hale Reservoir dam, a historic farm pond decreed in Water Division 2, Case No. W-1814, with a Priority Date of July 19, 1945. W-1814 further states: "<i>this right shall be junior...to 1972.</i>" New capacity for 72-hour stormwater storage of 10+/- acre-feet, combined with water quality mitigation infrastructure, will support creation of 7.5+/- acres of new wetland habitat. The new pond will provide nonpotable irrigation for the park. Combined with restoration of 3.5+/- acres of non-jurisdictional wetland and extensive recreational amenities, including an ADA-accessible fishing pier, this community asset will become a showcase for multi-purpose water resource projects. Collaborating with the City of Fountain, the project partnership is an exemplar of regional cooperation to address water quality, stormwater mitigation, public safety, environmental restoration and recreational amenities.	
Project Objectives:	
1. Construct a new dam to increase water storage capacity at Hale Reservoir while mitigating an historic and on-going flooding challenge, creating new species habitat (wetlands) and a regional recreational amenity with water outreach and education initiatives. 2. Develop 10-15 acres of new wetland areas. 3. Construct recreational amenities for access to the restored reservoir including an ADA-Accessible fishing ramp and bird watching blinds. 4. Restore 3-4 acres of nonjurisdictional wetlands following construction. 5. Provide educational signage and develop programing related to the aquatic and wetland habitat and species. 6. Eliminate flood risk from storm events while protecting water quality 7. Transition from a potable to nonpotable irrigation mode, conserving 10-15 acre-feet annually. 8. Provide subregional water quality structures upstream of the restored reservoir for improvement of nonpotable water supply and enhanced species habitat.	



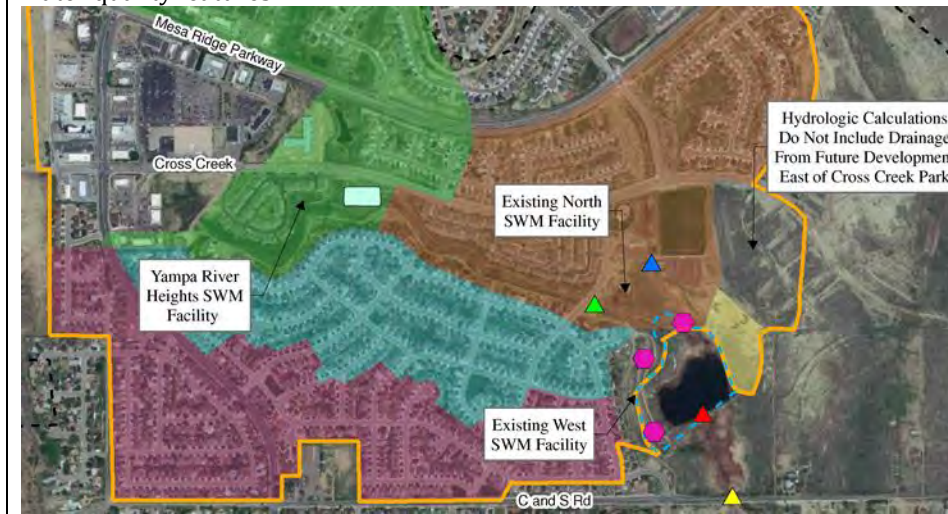
Last Updated: May 2021

Tasks	
Task 1 – Dam Construction	
Description of Task:	
Mobilization, Site Preparation, Earthwork, Dam Structures and Outlet Works, Site Reclamation & Traffic Control.	
	
Method/Procedure:	
Third Party Contract by bid process.	
Deliverable:	



Last Updated: May 2021

Restored Hale Reservoir with expanded (10+ AF) of 72-hour storage capacity and upstream stormwater water quality features.



Tasks

Task 2 – Stormwater Infrastructure

Description of Task:

Existing stormwater features will be converted into 72-hour impoundments contained by the new dam structure.

Method/Procedure:

Last Updated: May 2021

Third Party Contract by bid process

Deliverable:

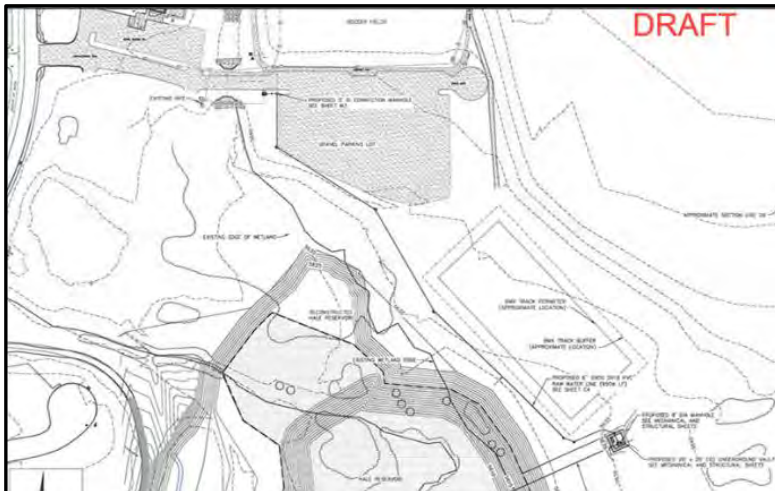
Inspected and approved structures

Tasks

Task 3 – Non-potable Irrigation System

Description of Task:

Design, permit and construct a non-potable well house and pipeline to irrigate the park's turf.





Method/Procedure:
Third Party Contract by bid process
Deliverable:
Inspected and approved structures
Task 4 - Wetland Reconstruction/Revegetation
Description of Task:
Construct and restore wetland features including Cattail Fringe, Marsh/Playa Mudflats and Meadows/Marsh Margins with adjacent shrub wetlands. Enhance riparian corridors.



Last Updated: May 2021



Method/Procedure:

Third Party Contract by bid process. We are working to create community volunteer opportunities for some of the wetlands and surrounding landscape restoration, where safely accessible by volunteers.

Deliverable:



Last Updated: May 2021

Inspected and approved constructed items with period for replacement until well established.

Tasks
Task5 - Park & Recreation Features
Description of Task: Construct boardwalk, floating dock, walking paths, and ADA-Accessible fishing pier. Place Rule & Regulation signage, wayfinding signage, pet waste stations, bike racks and bird watching features.
Method/Procedure: Third Party Contract by bid process
Deliverable:



Last Updated: May 2021

Inspected and approved structures

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.

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



Last Updated: May 2021

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.

Last Updated: May 2021

ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

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The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
The Project brings an historic farm pond into the 21 st Century with respect to water quality, recreational access for handicapped citizens, educational signage and enhanced species habitat.
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
The Project achieves the goals and objectives of a Title 32 Metropolitan District governed by a board of citizen volunteers. The regional park serves a population of 40,000+ persons, including many military service members, with events, recreational amenities (5 acres of irrigated turf) and an annual clean up event.
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?
The largest contribution to the Project budget is by the City of Fountain, the land use authority that entitled the Cross Creek Metropolitan District in 2003. The Project includes collaboration with the Mesa Ridge Metropolitan District #2, an entity formed to the East, and abutting the park. Park fees paid to the City of Fountain will contribute to the overall development of the regional park. An anticipated grant application to El Paso County Parks will tap into funds reserved for park facilities in urban locations.



Last Updated: May 2021

Describe how you plan to measure and evaluate the success and impact of the project?
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173 species of birds have been spotted at the park since it became a birding hot spot a few years ago, a remarkable number for a park of its size. Healthy wetlands and upland prairie contribute to the variety of birds spotted. (see link above)
Describe potential short- and long-term challenges with this project.
The short term challenge is assembling the funding to match the project costs, which keep moving upward in this period of inflation and limited supply. The long-term challenge will be managing the Project assets to maintain the quality of the facility. This Project may be challenged by too much love for this type of recreational facility.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado's Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
The primary method will be signage and constructed trails, along with the ADA fishing dock. Working with the City of Fountain Utilities, the Project expects to highlight the cost and water savings associated with the nonpotable irrigation system. Collaborating with El Paso County Parks, the Project expects to highlight the importance of wetlands and species habitat, particularly for primary and middle school age children.
Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
The importance of public safety with respect to stormwater runoff will be highlighted in the reconstruction of the Hale Reservoir dam. With water quality features, the updated and enlarged structure will demonstrate the opportunity to achieve water quantity, quality, recreation and environmental objectives in an integrated fashion.



Last Updated: May 2021

Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).
The City of Fountain Utilities plays a leading role in the Arkansas Basin Roundtable and implementation of the Arkansas Basin Implementation Plan. The Utilities' outreach programs will periodically feature the Project, combined with regular reports to the Fountain City Council.
Describe how the project achieves the basin roundtable's PEPO Education Action Plans.
The Project presents an opportunity to connect with young people to help them understand the relationship between water quantity, water quality and the natural environment.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.

**COLORADO**Colorado Water
Conservation Board

Department of Natural Resources

Colorado Water Conservation Board**Water Plan Grant - Detailed Budget Estimate****Fair and Reasonable Estimate****Prepared Date:****11/30/2021****Name of Applicant:****Cross Creek Metropolitan District****Name of Water Project:****Hale Reservoir Re-Construction****Construction****Task 1 - Dam Construction****July - December 2022**

<i>Sub-task</i>	<i>Unit</i>	<i>Quantity</i>	<i>Unit Cost</i>	<i>Total Cost</i>	<i>Water Plan Grant</i>	<i>CCMD-CTF Funds</i>	<i>Applicant & Matching</i>
Mobilization		1	\$ 115,900	\$ 115,900			\$ 115,900
Site Preparation		1	\$ 199,543	\$ 199,543			\$ 199,543
Earthwork		1	\$ 3,417,617	\$ 3,417,617	\$ 388,350		\$ 3,029,267
Dam Structures & Outlet Works		1	\$ 265,080	\$ 265,080	\$ 66,270		\$ 198,810
Site Reclamation		1	\$ 7,500	\$ 7,500	\$ 1,500		\$ 6,000
Traffic Control		1	\$ 2,500	\$ 2,500	\$ 500		\$ 2,000
Construction Contingency		1	\$ 401,814	\$ 401,814	\$ 80,363		\$ 321,451

\$ 4,409,954**Task 2 - Stormwater Infrastructure****July - December 2022**

Forebay Construction (includes 20% contingency)		3	\$ 20,400	\$ 61,200	\$ 15,300		\$ 45,900
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\$ 61,200**Task 3 - Non-Potable Irrigation System****July - December 2022**

Pump House		1	\$ 75,000	\$ 75,000	\$ 18,750		\$ 56,250
Irrigation Lines		1	\$ 25,000	\$ 25,000	\$ 6,250		\$ 18,750
Electrical Connection		1	\$ 5,000	\$ 5,000	\$ 1,250		\$ 3,750

\$ 105,000**Task 4 - Wetlands Reconstruction/Revegetation****December 2022 - August 2023**

Stripping/Stockpiling wetland topsoil/replacement	CY	5	\$ 9,600	\$ 48,000	\$ 12,000		\$ 36,000
6" Aluminum Gated Irrigation Pipe (flow spreader)	LF	300	\$ 30	\$ 9,000	\$ 2,250		\$ 6,750
Invasive Plant Control	LS	1	\$ 3,700	\$ 3,700	\$ 925		\$ 2,775
Harvesting and Planting	LS	1	\$ 3,100	\$ 3,100	\$ 775		\$ 2,325
Riparian Corridor	Zone	1	\$ 12,454	\$ 12,454	\$ 3,114		\$ 9,341
Shrub/Scrub Wetlands	Zone	1	\$ 20,923.00	\$ 20,923	\$ 5,231		\$ 15,692
Meadow/Marsh Margins	Zone	1	\$ 3,302.00	\$ 3,302	\$ 826		\$ 2,477
Marsh/Playa Mudflats	Zone	1	\$ 1,337.00	\$ 1,337	\$ 334		\$ 1,003
Cattail Fringe	Zone	1	\$ 4,556.00	\$ 4,556	\$ 1,139		\$ 3,417
							\$ -

\$ 106,372**Task 5 - Park & Recreation Features****December 2022 - August 2023**

Rough Grading	SF	577,251	\$ 0.10	\$ 57,725	\$ 11,545		\$ 46,180
Landscape Grading	SF	400,000	\$ 0.10	\$ 40,000	\$ 8,000		\$ 32,000
Seed Area w/amendments (M&L)	SF	332,152	\$ 0.40	\$ 132,861	\$ 26,572		\$ 106,289
Plants - ornamental grasses (M&L)	EA	100	\$ 25	\$ 2,450	\$ 490		\$ 1,960
Plants - shrubs	EA	75	\$ 66	\$ 4,950	\$ 990		\$ 3,960
Trees - deciduous	EA	75	\$ 708	\$ 53,100	\$ 10,620		\$ 42,480
Trees - evergreen	EA	25	\$ 606	\$ 15,150	\$ 3,030		\$ 12,120
Boardwalk	SF	3,775	\$ 55	\$ 207,625	\$ 51,906	\$ 100,000	\$ 55,719
Floating Dock	EA	1	\$ 20,000	\$ 20,000	\$ 5,000	\$ 15,000	\$ -
Crushed Limestone Trail Surfacing	SF	42,970	\$ 2	\$ 64,455	\$ 16,114	\$ 4,000	\$ 44,341
Benches (with back)	EA	4	\$ 1,745	\$ 6,980	\$ 1,745	\$ 5,235	\$ -
Benches (no back)	EA	4	\$ 1,745	\$ 6,980	\$ 1,745	\$ 5,235	\$ -
Pet Waste Stations	EA	4	\$ 475	\$ 1,900	\$ 475	\$ 1,425	\$ -
Waste Receptacles	EA	6	\$ 1,530	\$ 9,180	\$ 2,295	\$ 6,885	\$ -
Signage Rules & Regs	EA	2	\$ 2,000	\$ 4,000	\$ 1,000	\$ 2,252	\$ 748
Signage Wayfinding	EA	8	\$ 1,500	\$ 12,000	\$ 3,000	\$ 4,968	\$ 4,032
Bike Rack	EA	3	\$ 465	\$ 1,390	\$ 348		\$ 1,043

\$ 640,746**Task 6 - Project/Grant Management****July 2022 - August 2023**

Construction Observation-Engineer		1	221,000	\$	221,000		\$	221,000	
Testing		1	221,000	\$	221,000		\$	221,000	
Construction Management-Owners Rep		1	34,000	\$	34,000		\$	34,000	
Grant Management	HR	40	75		3,000		\$	3,000	
									\$ 479,000
TOTAL			\$ 5,802,272	\$	750,000	\$	145,000	\$	4,907,271

**Cross Creek Park & Hale Reservoir
Funding Sources**

Last Updated:

11/1/2021

Colorado Water Plan Grant	\$ 750,000	
GOCO	\$ 500,000	Applying Spring 2022
El Paso County Urban Park Grant	\$ 25,000	Applying January 2022
City of Fountain-COP Funds	\$ 3,500,000	
CCMD-CTF Funds	\$ 145,000	
CCMD Matching Funds	\$ 882,271	
	\$ 5,802,271	



Hale Reservoir

Updated March 2014 Costs Using

BOR Construction Cost Trends for Earth Dams

1490 W. 121st Ave. Suite 100

Denver, CO 80234

Phone: (303) 452-6611

Fax: (303) 452-2759

Job No. : 12-130

By: SAS

Date: 9/14/2021

Client: Cross Creek Metro
District

Item	Item Description	Units	Quantity	Unit Cost	Total Cost
Administration					
1a	Mobilization	LS	1	\$ 103,700	\$ 103,700
1b	Bonds and Permits	LS	1	\$ 12,200	\$ 12,200
Site Preparation					
2a	Dewatering and Control	LS	1	\$ 103,700	\$ 103,700
2b	Removal of Existing Dam and Appurtenances	CY	7,119	\$ 7	\$ 49,833
2c	Clearing and Grubbing	AC	2	\$ 6,100	\$ 12,200
2d	Erosion and Sediment Control	LS	1	\$ 12,200	\$ 12,200
2e	Construction Bypass Channels	CY	2,000	\$ 6	\$ 12,000
2f	Furnish and Place Temporary 30" CMP Culvert	LF	310	\$ 31	\$ 9,610
Earthwork					
3a	Stripping and Stockpiling Topsoil	CY	1,500	\$ 5	\$ 7,500
3b	Excavation & Processing	CY	282,769	\$ 7	\$ 1,979,383
3c	Dam Placement	CY	57,028	\$ 10	\$ 570,280
3d	Foundation Preparation	CY	3,000	\$ 11	\$ 33,000
3e	Furnish and Place 6" D50 Riprap	TN	1,700	\$ 43	\$ 73,100
3f	Furnish and Place 9" D50 Riprap	TN	4,120	\$ 43	\$ 177,160
3g	Furnish and Place 12" D50 Riprap	TN	6,490	\$ 43	\$ 279,070
3h	Furnish and Place 18" D50 Riprap	TN	1,240	\$ 43	\$ 53,329
3i	Furnish and Place Concrete Grout for Grouted Riprap	CY	41	\$ 250	\$ 10,125
3j	Furnish and Place Type II Granular Bedding	TN	7,570	\$ 31	\$ 234,670
Dam Structures and Outlet Works					
4a	Furnish and Place 24" C905 Encased Outlet Conduit Pipe	LF	123	\$ 760	\$ 93,480
4b	Furnish and Place 24" C905 Encased Standpipe Overflow	LF	15	\$ 760	\$ 11,400
4c	Furnish and Place 24" C905 Outlet Conduit Pipe	LF	260	\$ 130	\$ 33,800
4d	Furnish and Place Structural Concrete with Rebar	CY	35	\$ 800	\$ 28,000
4e	Furnish and Place Baffled Outlet	CY	15	\$ 1,300	\$ 19,500
4f	Furnish and Place Fittings for Standpipe	EA	2	\$ 2,500	\$ 5,000
4g	Furnish and Place Outlet Intake Fitting	LS	1	\$ 2,500	\$ 2,500
4h	Furnish and Place Overflow Standpipe Trashrack	LS	1	\$ 1,900	\$ 1,900
4i	Furnish and Place Inlet Trashrack	LS	1	\$ 3,100	\$ 3,100
4j	Furnish and Place Baffle Structure Gate	LS	1	\$ 1,900	\$ 1,900
4k	Furnish and Place Outlet Slide Gate, 30-inch Diameter	LS	1	\$ 9,200	\$ 9,200
4l	Furnish and Place Staff Gages	LS	1	\$ 6,100	\$ 6,100
4m	Furnish and Place Filter Diaphragm	CY	10	\$ 130	\$ 1,300
4n	Furnish and Place Toe Drain	LF	700	\$ 50	\$ 35,000
4o	Furnish and Place Precast Toe Drain Manhole	LS	1	\$ 2,500	\$ 2,500
4p	Furnish and Place 8" C900 Toe Drain Outlet Pipe	LF	260	\$ 40	\$ 10,400
Site Reclamation					
5a	Seeding	AC	3	\$ 1,300	\$ 3,900
5b	Haul off old debris 3 mi to Fountain Landfill	LS	1	\$ 6,100	\$ 6,100
5c	Place topsoil	CY	1500	\$ 5	\$ 7,500
Optional Bid Items					
1	Traffic Control	LS	1	\$ 2,500	\$ 2,500
				Sub Total	\$ 4,018,140
Contingency					
1	Design and Contractor Contingency	%		0%	\$ -
2	Construction Contingency	%		10%	\$ 401,813.96
				Engineering and Construction Base Bid	\$ 4,419,954
	Stripping and Stockpiling Wetland Topsoil	CY	4,800	\$ 5	\$ 24,000
	Wetlands Topsoil Placement	CY	4,800	\$ 5	\$ 24,000
	6" Aluminum Gated Irrigation Pipe (Wetland Flow Spreader)	LF	300	\$ 30	\$ 9,000
	Invasive Plant Control	LS	1	\$ 3,700	\$ 3,700
	Harvesting and Planting	LS	1	\$ 3,100	\$ 3,100
	Construction Observation	%		5%	\$ 221,000
	Testing	%		5%	\$ 221,000
	Survey	%		2%	\$ 89,000
				Grand Total	\$ 5,014,754

ENGINEER'S INSPECTION REPORT

INSPECTOR: **JEH**

OFFICE OF THE STATE ENGINEER - DIVISION OF WATER RESOURCES - DAM SAFETY BRANCH

1313 SHERMAN STREET, ROOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME: HALE - DWIGHT G	T: 150S R: 0650W S: 29	COUNTY: EL PASO	DATE OF INSPECTION: 12/7/2017
DAM ID: 100136 YR Compl: 1940	DAM HEIGHT(FT): 13.5	SPILLWAY WIDTH(FT): 82.0	PREVIOUS INSPECTION: 9/28/1987
CLASS: Low hazard	DAM LENGTH(FT): 600.0	SPILLWAY CAPACITY(CFS): 1062.0	NORMAL STORAGE (AF): 6.0
DIV: 2 WD: 10	CRESTWIDTH(FT): 10.0	FREEBOARD (FT): 4.0	SURFACE AREA(AC): 2.0
EAP: Not Required	CRESTELEV(FT): 5600.0	DRAINAGE AREA (AC.): 1050.0	OUTLET INSPECTED:

CURRENT RESTRICTION: -- NONE --

OWNER: ELISE BERGSTEN,	OWNER REP.: ELISE BERGSTEN
ADDRESS: PO BOX 1834	CONTACT NAME: ELISE BERGSTEN
COLORADO SPRINGS CO 80901	CONTACT PHONE:

INSPECTION PARTY : Elise Bergsten	Gary Barber	John Hunyadi, PE
REPRESENTING : Cross Creek Metro District		Colorado Dam Safety

FIELD CONDITIONS OBSERVED	WATER LEVEL: BELOW DAM CREST -5 FT. Below Spillway -1 FT. GAGE ROD READING no gage
	GROUND MOISTURE CONDITION: ☒ DRY ☐ WET ☐ SNOWCOVER OTHER Clear, Calm, 35F

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY

UPSTREAM SLOPE

- PROBLEMS NOTED ☐ (0) NONE ☒ (1) RIPRAP - **MISSING, SPARSE, DISPLACED, WEATHERED** ☒ (2) WAVE EROSION - **WITH SCARPS**
- ☐ (3) CRACKS **WITH DISPLACEMENT** ☐ (4) SINKHOLE ☒ (5) APPEARS TOO STEEP ☐ (6) DEPRESSIONS OR BULGES ☐ (7) SLIDES
- ☐ (8) CONCRETE FACING - **HOLES, CRACKS, DISPLACED, UNDERMINED** ☒ (9) OTHER **Trees and thick vegetation**

The existing Hale dam is on property managed by Cross Creek Metro District. On June 7, 2014, this office approved design plans/specifications for removal of this existing structure and construction of a new dam slightly downstream. We discussed with CCMD representatives that the approval lasts for 5 years and would need to be re-submitted again to the SEO for approval. CCMD representatives indicated they have potential funding sources available that could allow construction to start/happen prior to June 7, 2019. Either way, this office is available for consultation/questions.

The existing Hale Dam is overall marginally considered conditionally satisfactory. Several issues that would require physical construction to address will be resolved with construction of the new dam. This report recognizes that and will focus on identifying critical issues for monitoring and maintenance of the existing structure to keep it operational between now and new dam construction.

UPSTREAM SLOPE

The upstream slope is significantly overgrown with brush and numerous large trees with roots that visibly extend for many tens of feet. The majority of the upstream slope is near vertical due to wave erosion.

ACTIONS

Slope should be monitored for signs of continued erosion that could affect the stability of the dam. In particular, should observed for signs of cracking on the crest, near the upstream slope. While not an ideal condition, no immediate stability concerns were identified on upstream slope as a whole. (Reference seepage section for concerns associated with previous embankment failure).

PHOTOS 1 to 6

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☒ Poor

CREST

- PROBLEMS NOTED ☐ (10) NONE ☐ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - **WITH DISPLACEMENT** ☐ (14) SINKHOLES
- ☐ (15) NOT WIDE ENOUGH ☒ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) IMPROPER SURFACE DRAINAGE ☐ (19) OTHER

Crest is about 10-ft wide and has a gravel surface. There is a low spot where the dam had previously failed and been repaired towards the left end of the dam.

The area of the previous failure should be closely observed for continued settlement or sloughing on downstream slope around pipe.

PHOTOS 7 to 9

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☐ Poor

DOWNSTREAM SLOPE

PROBLEMS NOTED ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☐ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT ☐ (24) SINKHOLE
☐ (25) APPEARS TOO STEEP ☐ (26) DEPRESSIONS OR BULGES ☐ (27) SLIDE ☐ (28) SOFT AREAS ☐ (29) OTHER

The downstream slope is generally about 2.5H:1V with a covering of weeds. Overall, the slope is fairly uniform. The major point of concern would be the area of the previous failure (location shown in attached site location Map). This area was repaired with an about 12-inch diameter ADS plastic pipe that allows flows to enter from the reservoir (although the upstream intake could not be located). On the downstream side, the pipe enters into the downstream toe. The slopes are near vertical around the pipe and there is concrete rubble used as backfill around the pipe. No cloudy seepage was observed.

The area of the previous failure should be monitored regularly for signs of increasing seepage, or progressively steepening slopes around the ADS pipe. If there was not a plan to construct a new embankment in the works and planned relatively soon, this area would require full removal of the ADS pipe, and proper repair/compaction of the previously filled zone. If any signs of increased seepage, cloudy seepage, or progressive slope failures are observed prior to the new dam construction, it will be required to lower the reservoir and properly repair this area.

PHOTOS 10 to 11.

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☒ Poor

SEEPAGE

PROBLEMS NOTED ☐ (30) NONE ☐ (31) SATURATED EMBANKMENT AREA ☒ (32) SEEPAGE EXITS ON EMBANKMENT
☒ (33) SEEPAGE EXITS AT POINT SOURCE ☒ (34) SEEPAGE AREA AT TOE ☒ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED / MUDDY
DRAIN OUTFALLS SEEN ☒ No ☐ Yes Show location of drains on sketch and indicate amount and quality of discharge. ☐ (37) FLOW INCREASED / MUDDY ☐ (38) DRAIN DRY / OBSTRUCTED
☐ (39) OTHER

1. Seepage area 1 already described as pipe through at area of old embankment failure. This seepage disseminates into the downstream toe area from the pipe and is estimated to be about 10 to 20 gpm. The entrance to the pipe should be located, if practical.

2. Seepage area 2 is located near the old outlet pipe with the inoperable outlet wheel. There is standing water and an incised channel about 20-ft left of the concrete headwall that the old outlet discharges into at downstream toe. No adverse seepage conditions noted at this location.

PHOTOS 12 to 16

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☐ Poor

OUTLET

PROBLEMS NOTED ☐ (40) NONE ☒ (41) NO OUTLET FOUND ☐ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE
☐ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☐ YES ☐ NO
INTERIOR INSPECTED ☐ (120) NO ☐ (121) YES ☐ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED ☐ (48) VALVE LEAKAGE
☐ (49) OTHER

There is remnants of an old outlet near the right-central portion of the dam. An inoperable wheel/stem is on the upstream slope and the concrete headwall at the discharge downstream was located amongst thick cattails. There is no effective outlet for this structure. If a drawdown were planned/required, it would need to be pumped down.

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☒ Poor

SPILLWAY

PROBLEMS NOTED ☐ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☒ (52) EROSION WITH BACKCUTTING ☐ (53) CRACK - WITH DISPLACEMENT
☐ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL ☐ (56) INADEQUATE FREEBOARD ☐ (57) FLOW OBSTRUCTED
☐ (58) CONCRETE DETERIORATED / UNDERMINED ☐ (59) OTHER

There is an 18-inch CMP located near the left abutment that is slightly higher in elevation it appears that the emergency spillway channel located on the right abutment. The emergency spillway has significant headcutting about 40-ft below the spillway crest. The headcutting is about 4.5-ft deep in sandy soils and about 20-ft wide.

This headcutting should be repaired during the interim period to new dam construction, given the proven likelihood of storm events creating flow through the spillway in recent years. The slopes of the headcut area should be sloped back and allow for new fill to be properly compacted in thin lifts up to the spillway channel grade. The surface of the area should be protected with riprap as an armor protection measure.

CONDITIONS OBSERVED: ☐ Good ☐ Acceptable ☒ Poor

MONITORING

EXISTING INSTRUMENTATION FOUND ☒ (110) NONE ☐ (111) GAGE ROD ☐ (112) PIEZOMETERS ☐ (113) SEEPAGE [WEIRS](#) / [FLUMES](#)

☐ (114) SURVEY MONUMENTS ☐ (115) OTHER

MONITORING OF INSTRUMENTATION ☒ (116) NO ☐ (117) YES PERIODIC INSPECTIONS BY: ☐ (118) OWNER ☐ (119) ENGINEER

Key monitoring is located at the previous dam failure location. Any signs of increasing seepage, cloudy seepage, or active/progressive slope movement would initiate need to remove ADS black pipe and properly compact/repair this area interim to new construction. Therefore, it is considered important for the owner to visually inspect this area on a routine basis.

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☐ Poor

MAINTENANCE AND REPAIRS

PROBLEMS NOTED ☐ (60) NONE ☐ (61) ACCESS ROAD NEEDS MAINTENANCE ☐ (62) LIVESTOCK DAMAGE

☒ (63) BRUSH ON [UPSTREAM SLOPE](#), [CREST](#), [DOWNSTREAM SLOPE](#), [TOE](#) ☒ (64) TREES ON [UPSTREAM SLOPE](#), [CREST](#), [DOWNSTREAM SLOPE](#), [TOE](#)

☐ (65) RODENT ACTIVITY ON [UPSTREAM SLOPE](#), [CREST](#), [DOWNSTREAM SLOPE](#), [TOE](#) ☐ (66) DETERIORATED CONCRETE - [FACING](#), [OUTLET](#), [SPILLWAY](#)

☐ (67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐ (68) OTHER

The primary maintenance required is to repair the emergency spillway channel headcut as described above.

CONDITIONS OBSERVED: ☐ Good ☒ Acceptable ☒ Poor

Go to next page for Overall Conditions and Items Requiring Actions

OVERALL CONDITIONS

Overall, it is recognized that this structure is slated for removal/replacement within the next year or two. With that in mind, the structure is considered conditionally satisfactory, only marginally so. Of primary importance is to monitor the area of the previous failure for changing seepage conditions and slope stability as well as repairing the headcut erosion in the emergency spillway channel.

Owner should continue to keep this office notified of planned construction period for project C-2022. As noted, approval of current plan set is set to expire on June 7, 2019.

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐ (71) SATISFACTORY

☒ (72) CONDITIONALLY SATISFACTORY

☐ (73) UNSATISFACTORY

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

MAINTENANCE - MINOR REPAIR - MONITORING

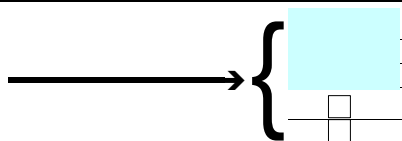
- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE _____
- ☐ (82) CLEAR TREES AND/OR BRUSH FROM: _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: **REFERENCE MONITORING SECTION** _____
- ☐ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☒ (88) OTHER **REFERENCE MAINTENANCE SECTION** _____
- ☐ (89) OTHER _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans and Specifications must be approved by State Engineer prior to construction.)

- ☐ (90) PREPARE PLANS AND SPECIFICATIONS FOR REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL: RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- ☐ (104) CONTINUE EXISTING RESTRICTION



FT. BELOW DAM CREST
FT. BELOW SPILLWAY CREST
FT. GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE ~~OR CONTINUED STORAGE AT THE RESTRICTED LEVEL~~

Engineer's
Signature

INSPECTED BY

Owner's
Signature

OWNER/OWNER'S REPRESENTATIVE

DATE: ____/____/____

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain outfalls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:
1) Designed drain or seepage flows have increased without increase in reservoir level.
2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
3) Widespread seepage, concentrated seepage, or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Monitoring includes movement surveys and leakage measurements for all dams, and piezometer readings for High hazard dams. Instrumentation is in reliable, working condition. A plan for monitoring the instrumentation and analyzing results by the owner's engineer is in effect. Periodic inspections by owner's engineer.

ACCEPTABLE

Monitoring includes movement surveys and leakage measurements for High and Significant hazard dams; leakage measurements for Low hazard dams. Instrumentation is in serviceable condition. A plan for monitoring instrumentation is in effect by owner. Periodic inspections by owner or representative. OR, NO MONITORING REQUIRED.

POOR

All instrumentation and monitoring described under "ACCEPTABLE" here for each class of dam, are not provided, or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Dam appears to receive effective on-going maintenance and repair, and only a few minor items may need to be addressed.

ACCEPTABLE

Dam appears to receive maintenance, but some maintenance items need to be addressed. No major repairs are required

POOR

Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair has begun to threaten the safety of the dam.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam, and the dam is expected to perform satisfactorily under all design loading conditions. Most of the required monitoring is being performed.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (seepage, evidence of minor displacements, etc.), which, if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection, and maintenance must be performed as a requirement for continued full storage in the reservoir.

UNSATISFACTORY

The safety inspection indicates definite signs of structural distress (excessive seepage, cracks, slides, sinkholes, severe deterioration, etc.), which could lead to the failure of the dam if the reservoir is used to full capacity. The dam is judged unsafe for full storage of water.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance, or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

HAZARD CLASSIFICATION OF DAMS

High hazard

Loss of human life is expected in the event of failure of the dam, while the reservoir is at the high water line.

Significant hazard

Significant damage to improved property is expected in the event of failure of the dam while the reservoir is at the high water line, but no loss of human life is expected.

Low hazard

Loss of human life is not expected, and damage to improved property is expected to be small, in the event of failure of the dam while the reservoir is at high water line.

NPH hazard - No loss of life or damage to improved property, or loss of downstream resource is expected in the event of failure of the dam while the reservoir is at the high water line.

Hale Dam
DAMID 100136
Inspection Photos

JEH, 07 DEC 2017

Hale Dam (existing)

Legend

Feature 1

Hale Dam

Previous failure (Culvert location)

Outlet Operator (non-operational)

Outlet Discharge

Spillway Headcutting

Google Earth

© 2017 Google

200 ft





01_Upstream Slope, from right abutment



02_Upstream Slope, trees/roots



03_Upstream Slope, roots



04_Upstream Slope, previous failure



05_Upstream Slope, previous failure location



06_Upstream Slope, previous failure location



07_Dam Crest



08_Dam Crest



09_Dam Crest



10_Downstream Slope, looking right at central portion



11_Downstream Slope, above old outlet



12_Seepage, previous failure



13_Seepage, previous failure



14_Seepage, previous failure



15_Outlet, old operator



15_Seepage, previous failure



17_Outlet, operator stem



18_Outlet, old discharge point concrete



19_Seepage area left of outlet



20_Seepage area left of old outlet



21_Pipe Spillway on left end of dam



22_Pipe spillway on left end of dam



23_Em Spwy crest



24_Em Spwy headcutting



25_Em Spwy Headcutting

September 23, 2021

Elise Bergsten
Cross Creek Metropolitan District
PO Box 1834
Colorado Springs, CO 80901
Via email: elise.balancedmgmt@gmail.com

RE: Scope of Work for Dam Safety Plan Modifications and Stormwater Design

Dear Elise:

Applegate Group, Inc. (Applegate) recently completed a Hydrologic Hazard Analysis for Hale Reservoir based on the 2013 rehabilitation design to confirm emergency spillway adequacy and the Inflow Design Flood (IDF). A formal submittal was transmitted to the Colorado Division of Water Resources Dam Safety Branch (Dam Safety) on August 27, 2021 and while we have not yet received comments, we are optimistic that the State will agree with our findings which indicate the emergency spillway is adequately sized. However, there are minor design modifications that need to be made to the 2013 construction drawings to re-permit the project; the required updates and associated costs are summarized in this proposal.

Additionally, the City of Fountain's updated stormwater regulations will require a new approach to meeting requirements for water quality treatment and flood storage associated with untreated drainage to Hale Reservoir. The 2013 design was permitted by demonstrating that the proposed service spillway standpipe would provide adequate full-spectrum storage volume as required at the time of the City's 2013 approval of the design. However, new regulations will require pretreatment of all inflows Hale Reservoir, consideration of operational scenarios when water levels are drawn down below the service spillway standpipe and conformance to current design standards. Some water quality treatment may need to occur outside of Hale due to the increased size of the contributing drainage. A scope of work and fee estimate for developing and implementing a new stormwater design approach is summarized below, which will meet Fountain's current stormwater regulations and CCMD's design objectives.

SCOPE OF SERVICES

Task 1 – Dam Safety Plan Modifications

Applegate will update the 2013 construction drawings for Hale Reservoir to account for the following design changes:

1. Raising the dam crest approximately 6 inches to provide 1-foot of residual freeboard in the emergency spillway during the IDF. It should be noted that raising the dam will allow us to keep the 2013 emergency spillway design and still meet the updated hydrologic hazard rule from the Dam Safety Branch.
2. Revised grading of the reservoir footprint associated with planned wetland and proposed stormwater treatment.

3. Revised construction details for the service spillway standpipe based on updated water quality detention calculations.

Note the above scope assumes that Dam Safety will agree with results of the Hydrologic Hazard Analysis and that the proposed emergency spillway will not need to be redesigned. It is also assumed that no other substantial changes to the 2013 design or construction drawings will be required by the Dam Safety engineer to re-permit the project. If necessary, the scope of work and fee estimate for Task 1 will be updated to incorporate additional changes to the 2013 plan set as required by Dam Safety.

Task 2 – Stormwater Design - Conceptual

Task 2 will involve development of a conceptual design plan meeting the City's current stormwater requirements and CCMD's desire to eliminate the existing stormwater facilities to the north and west of Hale Reservoir. Applegate anticipates that this task will involve the following work:

1. Identify and evaluate alternative options for providing adequate stormwater quality treatment for contributing drainage not already managed by existing detention basins with the objective of minimizing overall project footprint and incorporating proposed wetlands to the extent practicable.
2. Coordination with NES regarding proposed wetlands and stormwater treatment requirements.
3. Preliminary water quality and hydraulic calculations to evaluate the potential need for additional stormwater facilities as well as type and approximate size.
4. Develop conceptual mapping and stormwater design summary for discussion with City staff.
5. Coordination with the City regarding the proposed stormwater design approach, submittal requirements, permitting timeline and construction sequencing. It is assumed that all meetings with City staff will be virtual; a total of 12 hours' time has been budgeted for coordination.
6. Develop budgetary cost estimates for construction of proposed stormwater facilities as determined acceptable by the City.

Development of a concept plan for stormwater treatment was initiated to help formulate a scope of work and cost estimate for final design and permitting which is summarized in Tasks 3 – 5. It is our opinion that full spectrum detention requirements for the untreated contributing drainage area to Hale Reservoir could be achieved through a combination of passive flow-through and automation of the low-level outlet. Passive flow-through of storm inflows to Hale would be conveyed through the service spillway standpipe when the reservoir is full (water level at normal pool elevation 5622) and automation of the low-level outlet gate would control detention time(s) of storm inflows when the reservoir is drawn down below the service standpipe due to irrigation and augmentation releases. Concurrently, construction of an extended detention basin (EDB) south of Mesa Ridge Parkway could decrease required treatment and flood storage volumes in Hale, possibly increasing active supply storage in the reservoir. Figure 1, attached, shows contributing drainage areas to Hale Reservoir, the proposed 'satellite' EDB south of Mesa Ridge Parkway, reservoir forebays for pretreatment of Hale inflows and flow measurement/telemetry equipment intended to provide real-time mass-balance accounting for automation of the low-level outlet.

Automation of stormwater facilities has been successful in other areas of the country and the Mile High Flood District (MHFD) recently completed a pilot study of a rainwater harvesting system utilizing automated controls which proved to be an effective system for managing stormwater. However, if the City of Fountain is not amenable to the proposed design concept, additional 'satellite' facilities may be necessary to provide stormwater quality treatment outside of Hale Reservoir.

Task 3 – Stormwater Design - Final

Task 3 assumes construction plans will be developed for one stormwater facility south of Mesa Ridge Parkway (EDB assumed for cost estimating) and that additional construction details for pretreatment and

automation of the low-level outlet will be developed and incorporated in the design plans for rehabilitating Hale Reservoir. Work under this task will involve the following activities:

1. Topographic survey of the existing stormwater ponds west and north of Hale Reservoir as well as the drainageway between Cross Creek and Mesa Ridge Parkway (note 6 to 8 weeks' lead time from Notice to Proceed). Estimated survey costs for the corridor are estimated to be approximately \$10,000 based on initial bids and have been incorporated in the task budget.
2. Updated hydrology and water quality calculations based on the approved concept design (required facility type(s) and location(s)).
3. Hydraulic analysis/calculations for design of outlet structures, spillways and erosion/scour protection at facility inflows and outflows.
4. Coordination with NES regarding proposed wetlands and integration with stormwater facilities.
5. Development of full-size plan sets consisting of 4 to 5 sheets per facility; note plan sets will include all necessary information to meet the City's requirements for GESQC plans. Development of additional construction details for pretreatment forebays at stormwater inflows to Hale Reservoir and flow measurement, recording and automation equipment necessary for automating the low-level outlet gate.
- 6.

Note the scope of work and cost estimate for final design of required stormwater facilities is subject to change based on coordination with the City of Fountain and will be updated following completion of Task 3. Our budget estimate for this task assumes one additional stormwater detention basin will be required, and the associated estimate can be scaled up depending on the final number of facilities required by City of Fountain.

Task 4 – Final Drainage Report Update

CCMD authorized Applegate Group to complete a Final Drainage Plan and Report for Hale Reservoir in our January 23, 2020 scope of work, but additional scope is provided under Task 4 as the January 2020 scope assumed it would be possible to provide all necessary treatment through Hale Reservoir (one facility). Subsequent topographic data and hydrologic modeling indicate that multiple detention facilities may be required to meet water quality detention requirements. Task 4 will involve updating the Final Drainage Report for Hale Reservoir based on the proposed stormwater concept design; this task is anticipated to include the following work:

1. Documentation of revised hydrologic and hydraulic calculations associated with the proposed stormwater facility south of Mesa Ridge Parkway (EDB assumed).
2. Updated local drainage maps for new facility.
3. Inspection and Maintenance Plans (IM Plans) for 1 additional facility type (EDB).
4. Cost estimates for financial assurance.
5. Updated report narrative and appendices.

Estimated costs for this task assume one stormwater detention basin will be required by the City, and the remainder of detention requirements will be met using an automated low-level outlet for Hale Reservoir. The associated budget estimate can be scaled up depending on the final number of detention facilities required by City of Fountain.

Task 5 – Stormwater Management Plan (SWMP) Development

Task 5 will involve the development of two separate SWMPs for the project; it is assumed that one SWMP will be developed for Hale Reservoir, and that a separate SWMP will need to be developed for the proposed EDB south of Mesa Ridge. The budget for this task includes minimal time for coordination with Colorado

Department of Public Health and Environment (CDPHE) and assumes the selected contractor(s) will be responsible for obtaining all necessary construction permits. Note the SWMP development was not included as part of the January 23, 2020 scope of work. Estimated costs for this task assume one stormwater detention basin will be required by the City, and the remainder of detention requirements will be met using an automated low-level outlet for Hale Reservoir. The associated budget estimate can be scaled up depending on the final number of detention facilities required by City of Fountain.

BUDGET

We proposed to bill Cross Creek Metropolitan District on a time and materials basis, with the following estimated not to exceed budget. Please note the estimated costs for Tasks 3 through 5 may vary depending on confirmation of the stormwater design approach. We will notify you if our level of effort approaches the Not-to-Exceed amount and seek your authorization for additional budget before completing any additional work.

	Task	Budget
1	Dam Safety Plan Modifications	\$13,700
2	Stormwater Design - Concept	\$11,000
3a*	Stormwater Design - Final (Construction Drawings and GESQC Plans for EDB)	\$23,900
3b*	Stormwater Design – Final (Edits to Hale Plans for Pretreatment and Automation)	\$7,500
4*	Final Drainage Report for Hale Reservoir and Additional Stormwater Facility**	\$ 9,000
5*	SWMP Development Hale Reservoir and Additional Stormwater Facility	\$9,100
Total		\$74,200*

*Estimated costs may vary based on final design approach; the cost provided assumes one additional water quality detention basin

**Estimated costs are in addition to fees included in January 23, 2020 scope of work; the cost provided assumes one additional water quality detention basin

SCHEDULE

Applegate anticipates starting on Tasks No. 1 and No. 2 within one week of Notice to Proceed. The duration for Task 1 will depend on comments received from Dam Safety on the Hydrologic Hazard Analysis (in terms of timing and substance) and also on the State's schedule for review of a final submittal. It is assumed that a 'final' submittal to Dam Safety will precede final stormwater design, and that minor modifications may need to be made retroactively to the Dam Safety design plans for record at a later date pending approval by the City of Fountain. Applegate estimates 3 weeks' time from NTP to develop a stormwater concept design submittal for the City; note completion of Task 2 will depend on the City's availability to review and discuss concept plans. The schedule for completing Tasks 3 through 5 will be dependent on the completion of Tasks 1 and 2; a tentative schedule has not yet been developed, but the estimated durations for each of these tasks is summarized below. Note that much of the work included under Tasks 3 – 5 could take place concurrently.

- Task 3: 10-12 weeks following receipt of survey which has an estimated lead time of 6 to 8 weeks'w
- Task 4: 8 to 10 weeks
- Task 5: 8 to 10 weeks

SUMMARY

We appreciate the opportunity to continue to assist CCMD in furthering the design and permitting for Hale Reservoir. If this proposal is acceptable to you, please sign below and the Work Order provided with this

proposal. We can complete the work under the Professional Services Agreement dated October 11, 2006. Please let me know if you have any questions regarding this work.

Sincerely,

Applegate Group, Inc.

Client Authorization



Steve Smith, PE
Vice President/Senior Water Resource Engineer

SAS/tk

AG#12-130

Signature

Date

Printed Name

Title

Hale Reservoir
Renovation
Cross Creek
Regional Park

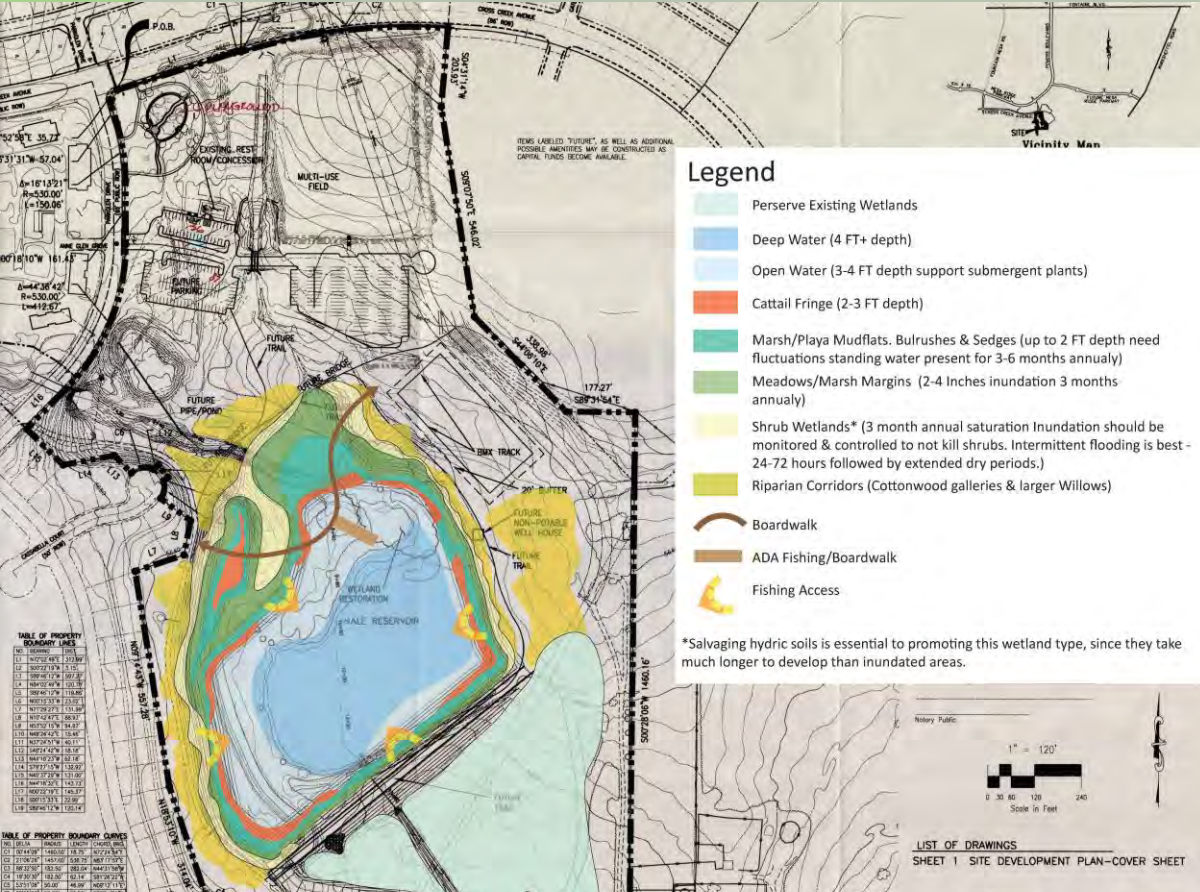


Project Description

- Cross Creek Metropolitan District (CCMD) was formed in El Paso County in November 2003. CCMD's mission is two-fold:
 - Parks and Recreation
 - Stormwater Management
- Its primary capital project is a 60-acre regional park that includes Hale Reservoir, an old farm pond. The park is located within the City of Fountain. The Hale Reservoir dam has breached twice in storm events and been restored at the expense of the CCMD. This grant request's purpose is to rehabilitate and expand Hale Reservoir dam.

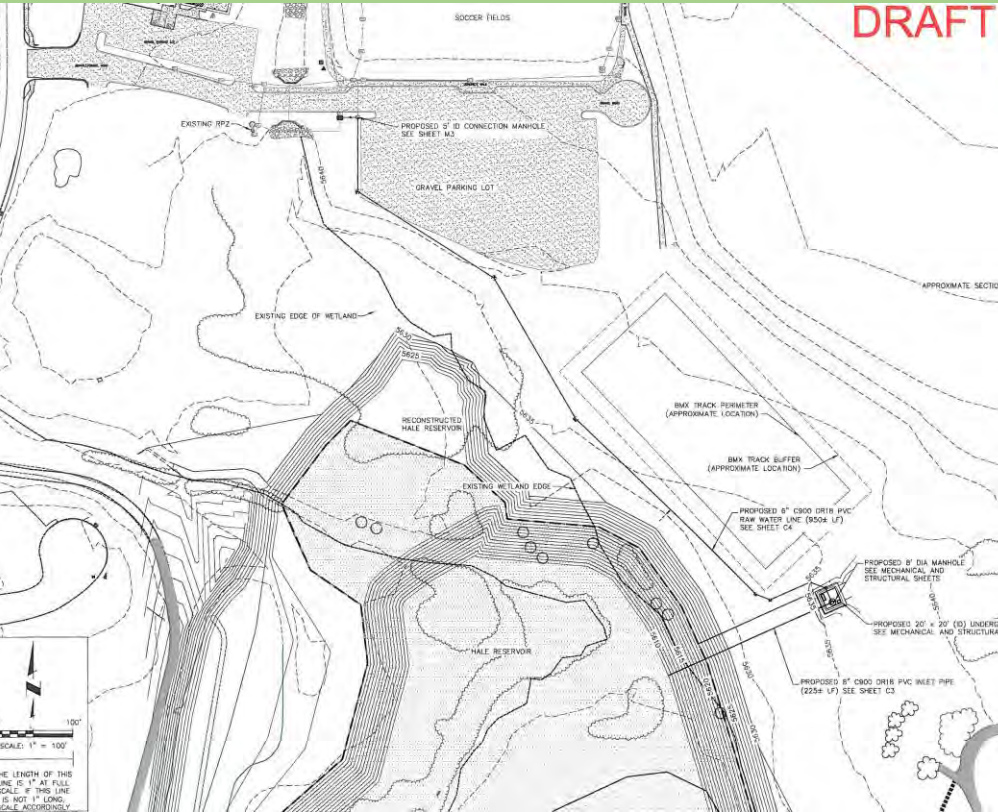


Project Benefits



- When rehabilitated, the lake will serve multiple purposes:
 - Environmental – Hale and its environs will include rehabilitated and increased wetlands and riparian habitat – approximately 7 ½ new acres of wetland habitat will be added to an existing 3 1/5 acres. Wildlife habitat will be enhanced and protected by the new design.
 - Recreational – The reservoir, by design, will direct and limit human contact; through boardwalks, fishing piers, signage, and ADA accessible trails around the perimeter.

Project Benefits



- When rehabilitated, the lake will serve multiple purposes:
 - Water Conservation – Hale will serve as a source of non-potable water. In partnership with City of Fountain for augmentation, it is expected that an estimated 11 – 27 acre-feet per year of potable water from the City of Fountain will be replaced with inexpensive return flows. The augmentation agreement with Fountain will also cover evaporative loss from the expanded reservoir.
 - Stormwater Management – While serving as a park, Hale Reservoir has been re-designed to manage new capacity for 72-hour stormwater storage of 10+/- acre-feet, combined with water quality mitigation infrastructure.

Cross Creek Park & Hale Reservoir		
Funding Sources		
Last Updated:		11/1/2021
Colorado Water Plan Grant	\$ 750,000	
GOCO	\$ 500,000	Applying Spring 2022
El Paso County Urban Park Grant	\$ 25,000	Applying January 2022
City of Fountain-COP Funds	\$ 3,500,000	
CCMD-CTF Funds	\$ 145,000	
CCMD Matching Funds	\$ 882,271	
	\$ 5,802,271	

Cross Creek Park & Hale Reservoir				
Budget				

Last Updated:		11/1/2021		
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Task 1 - Dam Construction			\$	4,409,954
Task 2 - Stormwater Infrastructure			\$	61,200
Task 3 - Non-Potable Irrigation System			\$	105,000
Task 4 - Wetlands Reconstruction/Revegetation			\$	106,371
Task 5 - Park & Recreation Features			\$	640,746
Task 6 - Project/Grant Management			\$	479,000
TOTAL			\$	5,802,271

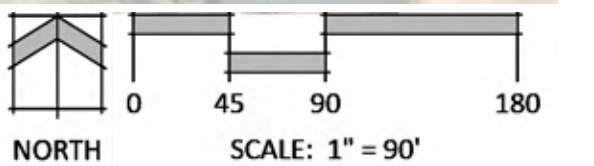
Water Rights – covering our bases

- Hale Reservoir is a historic farm pond decreed in Water Division 2, Case No. W-1814, with a Priority Date of July 19, 1945. W-1814 further states: *“this right shall be junior...to 1972.”*
- Working with State Engineer’s Office on new rainfall rules, which resulted in raising the dam by 6 inches to account for a 1000-year rain event. Dam permit application in process.
- Working with Division Engineer, Doug Hollister, to rectify un-decreed pond status. Installing gages and ready to monitor for stormwater releases.
- Partnered with Fountain Utilities, amending an Augmentation Agreement to account for irrigation losses and increased evaporative losses.
- Working with City of Fountain, using the El Paso County Drainage Criteria Manual, to re-design for water quality and stormwater management.
- This community asset will become a showcase for multi-purpose water resource projects. Collaborating with the City of Fountain and a neighboring metro district, the project partnership is an exemplar of regional cooperation to address water quality, stormwater mitigation, public safety, environmental restoration and recreational amenities.

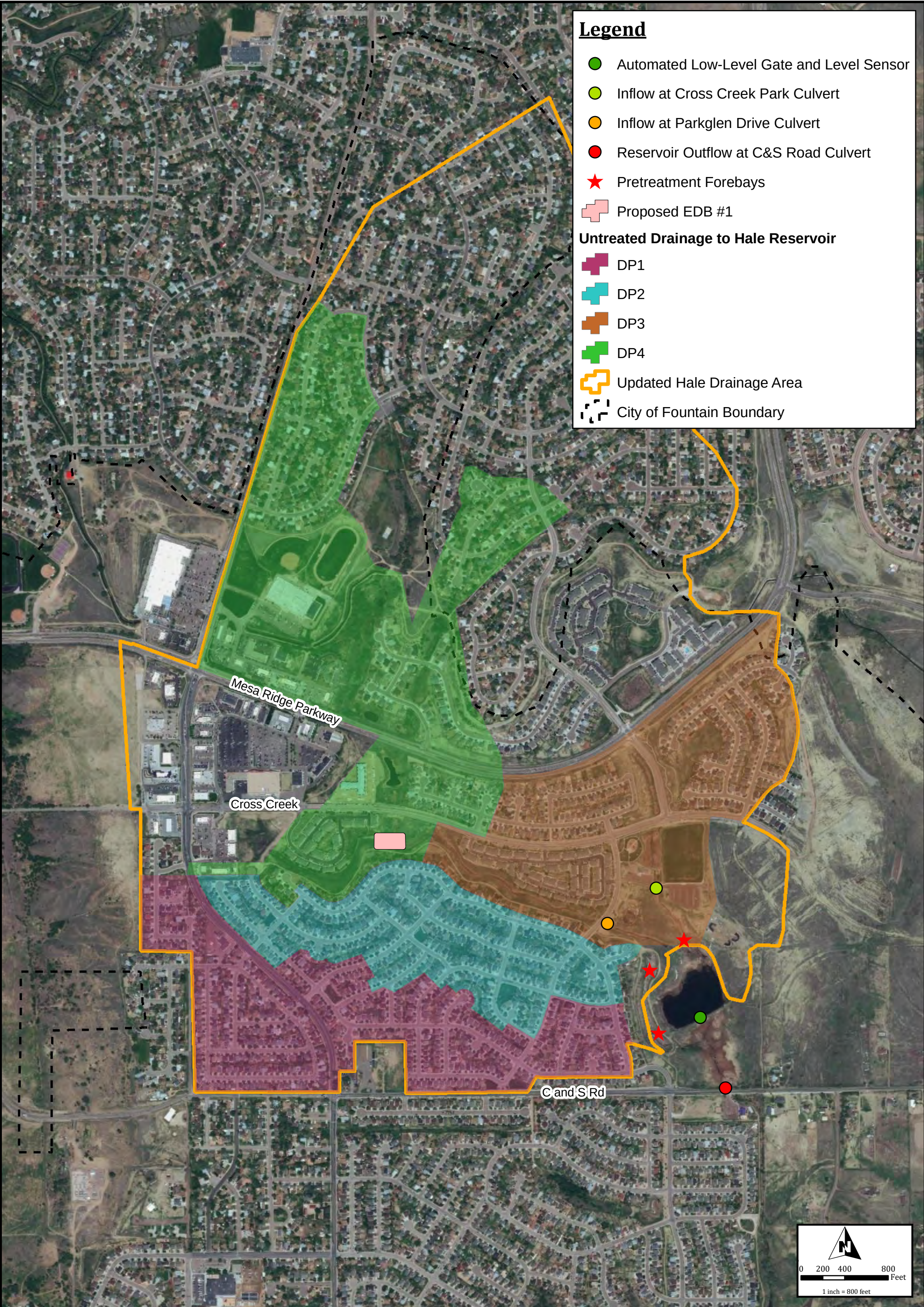


Questions?

CROSS CREEK PARK



- | | | | | | |
|-----------------------------|--------------------------|------------------------|-----------------------|-------------------------|---------------------------|
| 1. Hale Reservoir | 5. Boardwalk | 9. Parking | 13. Wetland Shrubs | 17. Pickleball Courts | 21. Excavation Placement |
| 2. Dam | 6. ADA Fishing Access | 10. Multi-Use Fields | 14. Fishing Beaches | 18. Reservoir Spillway | 22. Irrigation Pump House |
| 3. Bench Seating | 7. Playground Shade Sail | 11. BMX Track | 15. Restored Wetlands | 19. Amphitheater Lawn | 23. Promenade Trees |
| 4. 1Mi Perimeter Loop Trail | 8. Pavilion | 12. Cottonwood Gallery | 16. Existing Wetlands | 20. Neighborhood Access | 24. Existing Drainage |



Memorandum

Date: October 18, 2021 AG Job No.: 12-130

To: Ben Sheets, Brandy Williams – City of Fountain

From: Dave Breindel, Steve Smith – Applegate Group, Inc.

Cc: Elise Bergsten – Cross Creek Metropolitan District; Gary Barber

Subject: **Hale Reservoir Rehabilitation – Stormwater Concept Design**

The following memorandum summarizes the proposed design concept for meeting the City of Fountain's current stormwater regulations including Full Spectrum Detention requirements at Hale Reservoir. The outline below is intended to provide an overview of design objectives, major infrastructure components and potential opportunities and constraints. Concept design utilized updated hydrology based on the 2013 Mesa Ridge MDDP with the following revisions:

1. Composite curve numbers (CNs) for the Mesa Ridge subbasins were revised to account for:
 - a. Updated soils data (NRCS Hydrologic Soils Group classifications)
 - b. Cover type based on review of satellite imagery
2. Subbasin drainage areas were confirmed based on review of Mesa Ridge MDDP mapping, USGS StreamStats data and review of satellite imagery and LiDAR data.
3. Elevation-storage-discharge relationships for existing detention basins were updated based on construction plans, where available, and data obtained from Kiowa Engineering.
4. Updated precipitation data based on NOAA Atlas 14.

A detailed summary of the changes summarized above is not included with this memorandum but will be documented in the Final Drainage Report. The design concept explained herein is based on preliminary hydrologic and hydraulic calculations, discussions with Mile High Flood District (MHFD) and City of Fountain staff and Applegate's experience on projects requiring detailed flow measurement and recording for water rights administration. The intent of this memo is to give the City the opportunity to comment on the proposed design concept before proceeding with formal design. Please let us know your thoughts after you have had a chance to review.

Stormwater Design Concept

1. Design Objectives
 - a. Eliminate existing stormwater facilities to the north and west of Hale Reservoir by providing additional water quality treatment and flood storage volume in the rehabilitation design.
 - b. Meet current stormwater regulations including FSD requirements.
 - c. Provide adequate water supply for anticipated reservoir operations including irrigation and augmentation.
 - d. Minimize project footprint within Cross Creek Park to free up space for other uses (e.g., recreation, conservation, etc.).
2. Design Concept – See Map 1, attached, for Plan View of Design Components
 - a. Full Spectrum Detention to be provided through a combination of passive flow-through and automation of the low-level outlet in conjunction with flow measurement and reservoir level monitoring.
 - a. Factors affecting stormwater detention design:

1. Significant contributing drainage area and large surface area of reservoir complicate design of 'traditional' outlet structure (i.e., utilizing a water quality orifice plate and multiple openings).
2. In scenarios where the reservoir is drawn down below normal pool, releases will need to be made from the low-level outlet following storm events (within 72 hours) to comply with water rights administration.
3. Detailed mass-balance accounting is necessary for water rights compliance due to anticipated stormwater and groundwater inflows, reservoir evaporation, and proposed reservoir operations.

b. Proposed Detentions Times

1. Hale Reservoir will function as a Retention Pond (RP); however, the following detention times are proposed. The increased detention times are conservative and should result in increased water quality for storm flows passed through Hale.

<u>Zone</u>	<u>Volume</u>	<u>Drain Time of Zone, hrs</u>	<u>Maximum Release Rate</u>
1	WQCV	40*	Based on Drain Time
2	EURV minus WQCV	60 to 72**	Based on Drain Time
3	100-yr minus EURV	Per Release Rate	0.9 * (predevelopment Q_{100})

Notes: * 12 hours recommended for RP with FSD per MHFD guidance

** 12 to 60 hours recommended for RP with FSD per MHFD guidance

c. Service Spillway Standpipe Design

1. Open-top reinforced concrete riser
 - Preliminary calculations indicate a 4-foot diameter circular standpipe would come close to meeting water quality detention requirements when the reservoir is full, however, releases through the low-level outlet would regulate drain times when the reservoir is drawn down.
 - i. Subsequent design to evaluate need for water quality orifices/weir slots.
 - Riser will include trash rack with anti-vortex plate.
 - See Figures 1 through 4 below for examples of similar outlet configurations.

d. Automated Low-Level Outlet, Flow Measurement and Reservoir Monitoring

1. For mass-balance accounting of reservoir storage, the system will monitor the following:
 - Inflows at the Parkglan Drive and Cross Creek Park culverts.
 - i. Flow depth will be measured by level sensors installed in the culverts and used to estimate flowrate based on established rating tables.
 - Inflows at existing culverts to the existing stormwater pond west of Hale Reservoir will be measured by level sensors installed in the culverts and used to estimate flowrate based on established rating tables.
 - Reservoir storage
 - i. Water depth will be measured using a level sensor and volume estimated based on stage-storage data for the proposed reservoir.
 - Reservoir outflow at C&S Road culvert.
 - i. Flow depth will be measured by a level sensor installed in the culvert and used to estimate flowrate based on a culvert rating table.
2. A programmable logic controller (PLC) will be used to determine net change in reservoir storage based on input from the level sensors and communicate with an actuator installed on the low-level outlet to regulate gate opening as required to meet proposed drain times.

e. Discussion with MHFD:

- MHFD recently completed a successful pilot project focusing on rainwater harvesting utilizing cloud-based infrastructure: <https://mhfd.org/wp-content/uploads/2019/12/evaluation-of-rainwater-harvesting.pdf>.
 - MHFD staff indicated that the Hale Reservoir project would be a good candidate for an automated or 'cloud-based' approach to stormwater management.
 - Automated/cloud-based stormwater management solutions are being implemented in other parts of the country by companies such as Opti (<https://optirtc.com/>).
 - Applegate has completed several recent projects on irrigation canals and pipelines utilizing similar flow measurement and recording equipment to automate river diversions and augmentation releases; our experience on these projects will be an advantage in implementing a similar approach for managing stormwater at Hale Reservoir.
- f. Pre-treatment forebays at reservoir inflows
1. Pre-treatment forebays would be installed at the two piped inflows to the existing stormwater pond west of Hale and at the north tributary inflow to Hale; see Map 1 for approximate locations.
 2. Following survey, subsequent design will evaluate the possibility of consolidating the two proposed forebays west of Hale.
 3. Forebays will be designed for 3% of the WQCV associated with the contributing drainage areas consistent with MHFD design guidance.
- b. Applegate, CCMD and NES to evaluate feasibility of constructing a new SWM facility south of Mesa Ridge Parkway to reduce water quality treatment volume and flood storage in Hale Reservoir; to be further evaluated following survey. This potential facility is also shown on the attached figure.
3. Advantages of the proposed approach:
- a. Simplifies overall stormwater management system for untreated drainage to Hale Reservoir.
 1. Stormwater management achieved through Hale Reservoir and possibly one additional new facility. Additional pre-treatment forebays would be included as needed.
 2. Providing passive water quality treatment outside of Hale would likely require 3-4 separate facilities with a greater combined project footprint.
 - b. Decreased capital construction costs as well as long-term O&M investment.
 - c. Strict compliance with water rights administration requires detailed measurement and monitoring of reservoir levels as well as all inflow/outflow.
 - d. Unique approach could be a highlight for project, Cross Creek Park and the community.
 - e. Potential additional opportunities for funding:
 1. USBR WaterSmart grant(s)
 2. Additional CWCB funding opportunities addressing potential storage gaps

Figures



Figure 1. Von Springs #1 – Low-Level Outlet with Grade Beam and Service Spillway Standpipe



Figure 2. Von Springs #1 – Low-Level Outlet with Grade Beam, Service Spillway Standpipe at Left



Figure 3. Von Springs #1 – Overall of Upstream Embankment



Figure 4. Harris Park #2 – Low-Level Outlet with Grade Beam and Steel Staff Gage



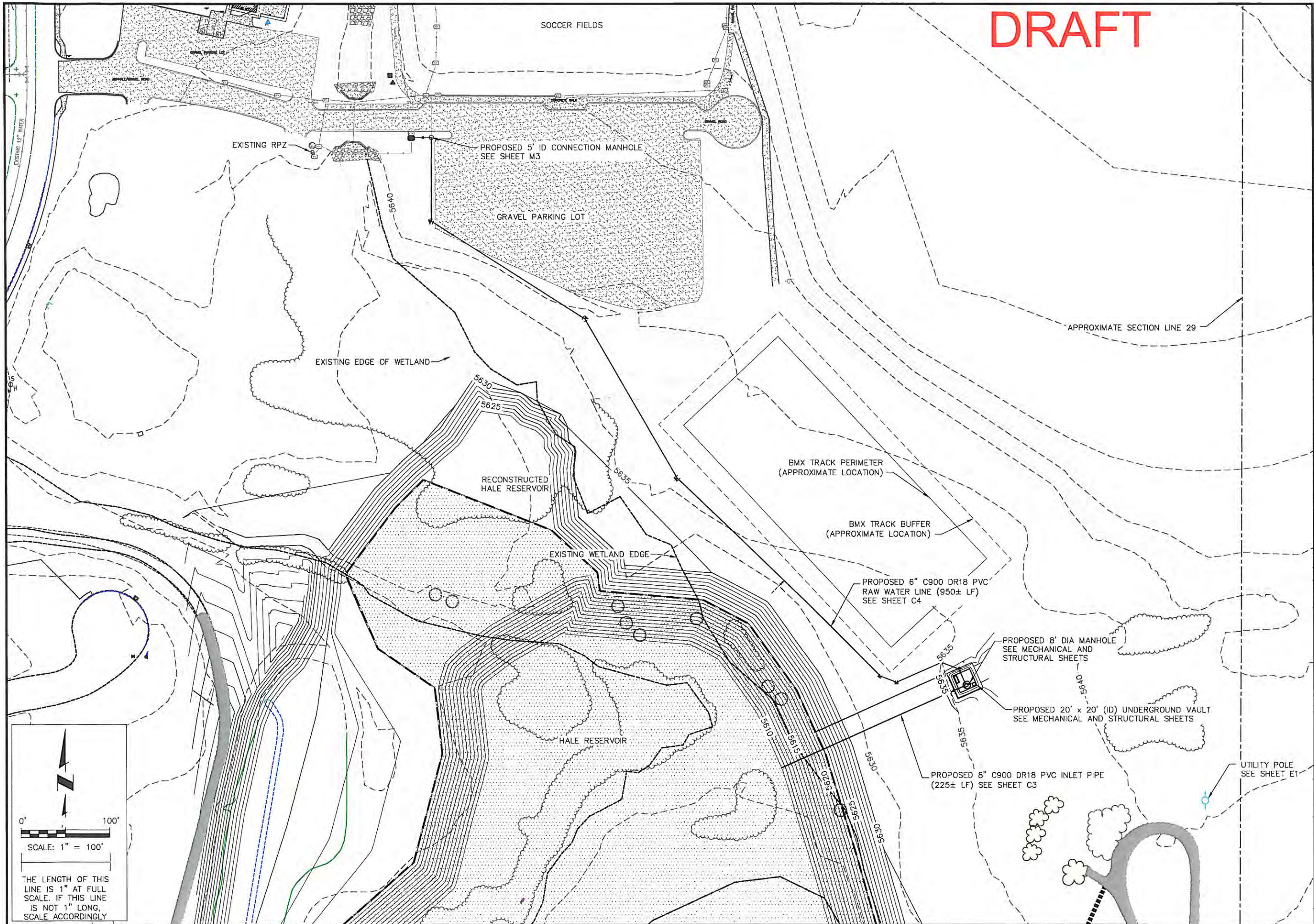
Hale Reservoir
Revised Survey Area_29Sep21

Legend

-  Culvert
-  Existing SWM Ponds
-  Hale Reservoir
-  Hale Reservoir - Requested Survey_29Sep2021
-  Stormwater Infrastructure



1000 ft



DRAFT

JDS-HYDRO CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 300
Colorado Springs, Colorado 80903
(719) 227-0072

APPLEGATE GROUP, INC.
CROSS CREEK METROPOLITAN DISTRICT
NON-POTABLE PUMP STATION
OVERALL SITE PLAN

Project No.: 243.01
Scale: AS SHOWN
Date: 08/13/15
Design: MDV
Drawn: GGM/TLM
Check: MDV
Revised:

SYMBOL

DESCRIPTION

LIGHT FIXTURES

- RECESSED FLUORESCENT LIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- SURFACE FLUORESCENT LIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- FLUORESCENT STRIP LIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- WALL BRACKET FLUORESCENT LIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- WALL MOUNTED LIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- RECESSED CEILING MOUNTED DOWNLIGHT, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- SURFACE MOUNTED CEILING DOWNLIGHT, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- PENDANT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- TRACK HEAD FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- SPOTLIGHT FIXTURE, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- BOLLARD OR POST LIGHT, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- PARKING LOT POLE LIGHT, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- LIGHT FIXTURE WITH EMERGENCY BALLAST, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- EMERGENCY LIGHT, WITH TYPE NOTED IN PLAN. SEE FIXTURE SCHEDULE FOR DETAILS.
- EXIT SIGN, WITH TYPE NOTED IN PLAN. SEE PLAN FOR ARROWS AND FACE OF EXIT NEEDED. SEE FIXTURE SCHEDULE FOR DETAILS.

SWITCHES

- TOGGLE SWITCH, 30A, SINGLE POLE, VOLTAGE AS REQUIRED, MOUNTED AT 48" ABOVE FINISHED FLOOR.
- OCCUPANCY SENSOR, WALL MTD., 48" AFF. SENSOR SWITCH WED POT, OR EQUAL.
- OCCUPANCY SENSOR, CEILING MTD., SENSOR SWITCH CHIR POT OR EQUAL.
- PHOTOCELL SWITCH, MOUNT ON NORTH FACING EXTERIOR WALL, UNO.
- THREE-WAY TOGGLE SWITCH.
- FOUR-WAY TOGGLE SWITCH.
- 9-15 VOLT ELECTRONIC DIMMER SWITCH, 100W, 120V ULTRON DIMA OR EQUAL, UNO.
- MANUAL MOTOR STARTER WITH THERMAL OVERLOAD.

RECEPTACLES

- DUPLEX RECEPTACLE, 25A, 120V, 3 WIRE GROUNDED, NEMA 5-20R, UNO., MOUNT 18" AFF.
- QUAD RECEPTACLE, 25A, 120V, 3 WIRE GROUNDED, NEMA 5-20R, UNO., MOUNT 18" AFF.
- SIMPLEX RECEPTACLE, 25A, 120V, 3 WIRE GROUNDED, NEMA 5-20R, UNO., MOUNT 18" AFF.
- SPECIAL RECEPTACLE, 220V, TYPE AS INDICATED OR MATCH EQUIPMENT CAP., MOUNT AT HEIGHT AS REQUIRED PER EQUIPMENT.
- DUPLEX RECEPTACLE, 25A, 120V, 3 WIRE GROUNDED, NEMA 5-20R, UNO., WITH TAB REMOVED FOR SWITCHING, MOUNT 18" AFF.
- SPECIAL PURPOSE RECEPTACLE, NEMA TYPE AS INDICATED, MOUNT AT HEIGHT AS REQUIRED PER EQUIPMENT.
- FLOOR BOX DUPLEX RECEPTACLE, FLUSH MOUNTED, PROVIDE COVER AS REQUIRED.
- FLOOR BOX QUAD RECEPTACLE, FLUSH MOUNTED, PROVIDE COVER AS REQUIRED.
- SUBSCRIPTS FOR RECEPTACLES
- 120V RECEPTACLE.
- CEILING FLUSH MOUNTED.
- ISOLATED GROUND.
- GROUND FAULT INTERRUPTER.
- WEATHER RESISTANT WITH GROUND FAULT INTERRUPTER IN WEATHER PROOF BOX.
- OVER COUNTER, MOUNT RECEPTACLE MOUNTED 8" ABOVE BACKSPASH.
- UNDER COUNTER.

NOTE: NOT ALL SYMBOLS ARE USED. VERIFY ALL CONNECTIONS AND RECEPTACLE TYPES FOR EQUIPMENT FROM APPROVED MECHANICAL AND EQUIPMENT SUBMITTALS PRIOR TO INSTALLATION.

SYMBOL

DESCRIPTION

POWER SYMBOLS

- JUNCTION BOX, FLUSH SURFACE MTD.
- POWER POLE WITH COMM AND POWER.
- MOTOR.
- NON FUSIBLE DISCONNECT SWITCH, RATING AS INDICATED.
- FUSIBLE DISCONNECT SWITCH, RATING AS INDICATED.
- PANELBOARD, LOAD CENTER.
- CEILING MOUNTED PAS FAN.
- ONE-LINE SYMBOLS
- CIRCUIT BREAKER, FRAME AND TRIP AS INDICATED.
- POWER TRANSFORMER, RATING AS INDICATED.
- CURRENT TRANSFORMER (CT).
- NON-FUSIBLE SWITCH, RATING AS INDICATED.
- FUSIBLE SWITCH, RATING AND FUSE SIZE AS INDICATED.
- FEEDER SCHEDULE KEY TAG.
- UTILITY TRANSFORMER.
- UTILITY ELECTRIC METER.
- MOTOR WITH DISCONNECT.
- MOTOR WITH CONTROLLER AND DISCONNECT.
- GENERATOR.
- TRANSFER SWITCH.
- WEATHERHEAD.
- PANELBOARD OR LOAD CENTER, IDENTIFICATION, AMPERES AND VOLTAGE.

ABBREVIATIONS

- UNO, UNLESS NOTED OTHERWISE.
- TVSS, TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- ENC, ELECTRIC WATER COOLER, PROVIDE GFI PROTECTION.
- E, EXISTING DEVICE TO REMAIN.
- N, NEW DEVICE TO BE INSTALLED.
- H, MOUNT DEVICE 8" AFF. HORIZONTALLY.
- TP, TAMPER-PROOF.
- SWD, SWITCH RATED BREAKERS.

GENERAL NOTES

GENERAL: THESE DRAWINGS REMAIN THE SOLE PROPERTY OF SOL CHAVEZ AND ASSOCIATES AND MAY BE USED ONLY FOR THE PROJECT AS INDICATED BY NAME AND LOCATION. ANY OTHER USE REQUIRES PRIOR WRITTEN PERMISSION. THE CONTRACTOR WILL PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, TRANSPORTATION, LICENSES, FEES, PERMITS, ETC. TO COMPLETE THE ELECTRICAL WORK DESCRIBED ON THE DRAWINGS. THE CONTRACTOR WILL WARRANT EQUIPMENT, MATERIAL, AND WORKMANSHIP FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. WARRANTY SHALL INCLUDE REPLACEMENTS OR REPAIRS WITHOUT COST TO THE OWNER DURING THE WARRANTY PERIOD. ELECTRICAL WORK SHALL BE CONFORMED TO THE NATIONAL ELECTRICAL CODE (NEC) 2011 AND ALL OTHER APPLICABLE LOCAL CODES AND ORDINANCES. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

USE OF DRAWINGS: DO NOT SCALE FROM THE ELECTRICAL DRAWINGS. FOR EXACT LOCATIONS, USE ARCHITECT'S DIMENSIONED DRAWINGS, SHOP DRAWINGS AND FIELD MEASUREMENTS. VERIFY ALL LOCATIONS WITH THE ARCHITECT PRIOR TO ELECTRICAL ROUGH-IN.

WIRING METHODS: ALL WIRING FOR LIGHTING AND POWER SYSTEMS WILL BE IN CONDUIT OR CABLE ASSEMBLIES APPROVED BY THE GOVERNING AUTHORITIES. CONDUCTOR SIZES SHOWN ARE BASED ON AMPACITIES FOR COPPER CONDUCTORS, UNLESS OTHERWISE NOTED. WHEN APPROVED BY ENGINEER, FEEDERS MAY BE ALUMINUM CONDUCTORS OF EQUIVALENT AMPACITIES. GROUNDING CONDUCTORS SHALL BE PROVIDED FOR ALL CIRCUITS SHOWN ON THE DRAWINGS. PROVIDE BULKING AND OTHER NECESSARY SUPPORTS IN WALLS AND CEILINGS FOR MATERIAL AND EQUIPMENT TO BE PROVIDED. BRANCH CIRCUIT NUMBERS SHOWN ON THE DRAWINGS MAY BE REARRANGED WITHIN A GIVEN PANELBOARD TO SUIT THE NEEDS OF THE INSTALLATION. ELECTRICAL BRANCH CIRCUITS SHALL BE BALANCED BETWEEN LINES AND PHASES. MULTIWIRE BRANCH CIRCUITS SHALL HAVE A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNDERGROUND CONDUCTORS AT THE POINT WHERE BRANCH CIRCUITS ORIGINATE (PANELBOTS ARE AN APPROVED MEANS). THE GROUNDING AND UNDERGROUND CONDUCTOR OF EACH MULTIWIRE BRANCH CIRCUIT SHALL BE GROUPED BY WIRE TIES AT ONE LOCATION IN PANELBOARD. ALL PATENT CARE AREAS SHALL COMPLY WITH NEC 517.13(A)(B) TO INCLUDE LUMINAIRES.

UTILITY COORDINATION: PROVIDE ALL COORDINATION WITH THE UTILITY INCLUDING LOAD DATA FORMS AND APPLICATION FOR SERVICE AS APPLICABLE. INSTALLATION OF SERVICE, PRIMARY OR SECONDARY FEEDERS AND METERING SHALL BE PERFORMED IN ACCORDANCE WITH THE UTILITY REQUIREMENTS.

GROUNDING: PROVIDE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE NEC AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL BRANCH CIRCUITS SHALL INCLUDE A GROUND CONDUCTOR. USE OF RACEWAY FOR GROUNDING IS NOT PERMITTED. GALVANIZED GROUND RODS ARE NOT PERMITTED.

PANELBOARDS: PROVIDE MINIMUM INTEGRATED EQUIPMENT SHORT CIRCUIT RATING AS INDICATED ON PANEL SCHEDULES. PROVIDE BOLT-ON BREAKERS UNLESS OTHERWISE NOTED. PROVIDE CIRCUIT BREAKERS SHOWN ON THE PANELBOARD SCHEDULES. ALL TERMINATIONS AND LUGS SHALL BE RATED FOR 75 DEGREE CONDUCTORS. PROVIDE TYPEWRITTEN CIRCUIT SCHEDULES TO IDENTIFY PANELBOARD AND EACH BRANCH BREAKER. ACCEPTABLE MANUFACTURERS ARE SQUARE D, SIEMENS AND GATON.

WIRING DEVICES: PROVIDE SPECIFICATION GRADE 15 AND 20 AMPERE SWITCH AND RECEPTACLE DEVICES, AS APPLICABLE. OTHER DEVICES SHALL BE PROVIDED AS INDICATED AND SHALL MATCH PLUG-CONNECTED EQUIPMENT FURNISHED FOR THE PROJECT. DEVICE WALL PLATES SHALL BE SMOOTH, NYLON TYPE AND SHALL BE OFFICE WHITE IN COLOR OR AS OTHERWISE SPECIFIED. DEVICE COLOR SHALL MATCH WALL PLATES.

DISCONNECT SWITCHES: HEAVY DUTY QUICK-BREAK, QUICK-BREAK TYPE, UNANALYZED UNLESS OTHERWISE NOTED. PROVIDE MEANS TO LOCK SWITCH IN OFF POSITION WITH PADLOCK. ENCLOSURES SHALL BE NEMA TYPE 1 OR NEMA TYPE 3R FOR OUTDOOR INSTALLATION. PROVIDE PERMANENT LABELS FOR DISCONNECTS TO INDICATE EQUIPMENT SERVED.

LIGHTING FIXTURES: SEE LIGHT FIXTURE SCHEDULE. PROVIDE ALL FIXTURES WITH LAMPS AS INDICATED. WHERE REQUIRED, FIXTURES SHALL BE SET WET OR DAMP LOCATION LABELED. VERIFY MOUNTING HEIGHTS PRIOR TO ELECTRICAL ROUGH-IN. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES REQUIRED FOR PROPER MOUNTING TO SURFACES. SUCH ACCESSORIES TO INCLUDE BUT NOT LIMITED TO SLOPE ADAPTORS, CHAINES, AND VAULTED CEILING CHAINES, ETC. PROVIDE DISCONNECTING MEANS FOR LUMINAIRES THAT UTILIZE DOUBLE-ENDED LAMPS AND BALLAST(S) IN ACCORDANCE WITH NEC 410.13(A)(1). ALTERNATES NOT ACCEPTABLE UNLESS NOTED AS "OR EQUAL" ON LIGHT FIXTURE SCHEDULE.

VOLTCEDATA: RACEWAY SYSTEM BY CONTRACTOR. ALL RACEWAYS SHALL BE PROVIDED WITH PULLSTRINGS OF MINIMUM OF 400 LB. TEST STRENGTH. ALL EQUIPMENT, RECEPTACLES AND CABLEING BY OTHERS. PROVIDE BLANK COVERS OVER ALL UNUSED OUTLETS. CABLES, DEVICES AND CABLE TERMINATION IS BY OTHERS.

FIRE ALARM: BY OTHERS. IF REQUIRED.

DRAFT

SHEET NOTES:

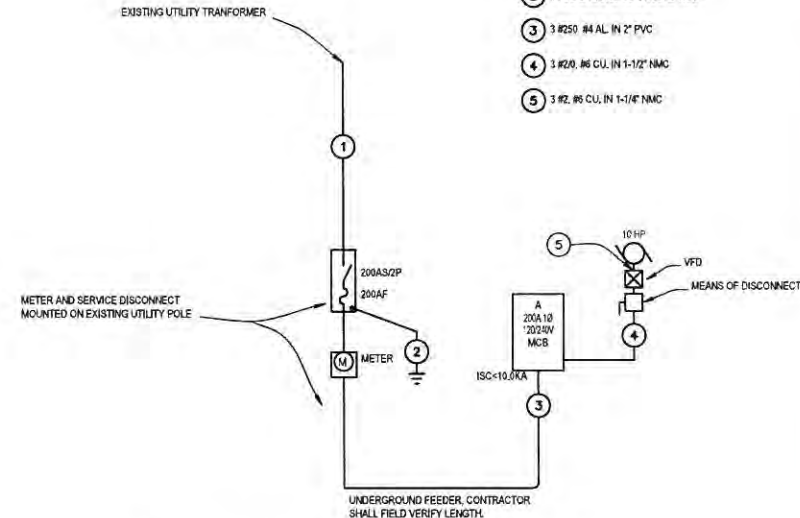
1. PROVIDE VFD, BALDOR ACB330J1-475A-2AS, SINGLE PHASE TO THREE PHASE CONNECTION FOR 3 PHASE PUMP AND PROVIDE IN NEMA 4X ENCLOSURE OR COORDINATE OPTION WITH MANUFACTURER. VFD SIZED FOR 50% DERATION AND SINGLE PHASE CONVERSION PER MANUFACTURER RECOMMENDATION.

FLAG NOTES:

1. INSTALL RAB TYPB 18" MIGHTY POST WITH IN-USE COVER AND NEMA 5-20R SIMPLEX RECEPTACLE FOR COMPRESSOR.
2. PROVIDE MEANS OF DISCONNECT AND VFD FOR 10HP WELL PUMP. SEE ONE-LINE FOR CLARIFICATION.
3. ROUTE CONDUIT FROM VFD TO PUMP. SEE ONE-LINE DIAGRAM FOR SIZE OF FEEDER.

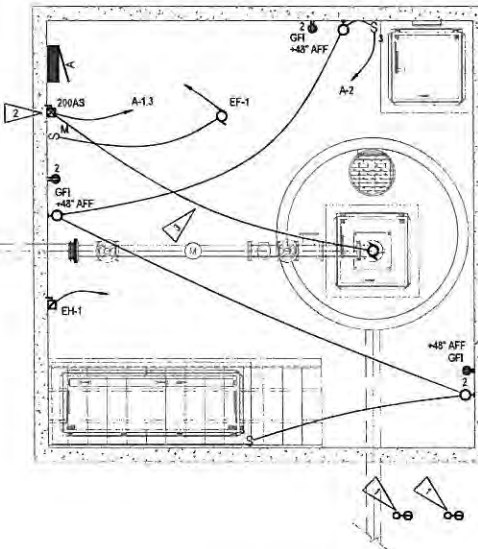
FEEDER SCHEDULE

- 1 3 #250 AL IN 2" GRC.
- 2 #4 CU GROUND TO GROUND ROD
- 3 3 #250 #4 AL IN 2" PVC
- 4 3 #250 #6 CU IN 1-1/2" NMC
- 5 3 #2 #6 CU IN 1-1/4" NMC



2 ONE-LINE DIAGRAM
E-1 SCALE: NONE

PANEL A									
VOLTAGE (L-N): 120				ENCLOSURE TYPE: -----					
VOLTAGE (L-L): 240				MOUNTING: SURFACE					
PHASES, WIRES: 1 Ø, 3 W				AIG RATING: 10000					
MINIMUM BUS CAPACITY (A): 200 A				NOTES: -----					
MAIN O.C. DEVICE (A): 200 A									
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)		POLE	TRIP AMPS	DESCRIPTION	CKT NO
				A	B				
1,3	WELL PUMP	175	2	14881	615	1	20	PIT LIGHTS & RECEPS	4
1,3	WELL PUMP	175	2	14881	250	1	20	EXHAUST FAN	4
5	COMPRESSOR	20	1	1127	2500	2	30	ELECTRIC HEAT	6,8
7	COMPRESSOR	20	1	1127	2500	2	30	ELECTRIC HEAT	6,8
9	-----	20	1	0	0	1	20	-----	10
11	-----	20	1	0	0	1	20	-----	12
				CONNECTED LOAD PHASE TOTALS (VA)					
				19123 18755					
				CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	DEMAND LOAD 45.3KVA		
Heating				5.0	1.00	5.0	SPARE CAPACITY 2.7KVA		
Lighting				0.1	1.25	0.1	SPARE CAPACITY 11.1AMPS		
Motors				2.5	1.00	2.5	SPARE CAPACITY 5%		
Motors (Largest)				29.8	1.25	37.2			
Receptacles (0 - 10 KVA)				0.5	1.00	0.5			
TOTAL				37.9		45.3			
LOAD (AMPS):				157.8		188.9			



1 ELECTRICAL NEW WORK PLAN
E-1 SCALE: NONE

REVISIONS



CHAVEZ
TIFFANY
& AYERS

Chavez Tiffany & Ayers
Engineering Corporation
P (719) 438-0021 F (719) 438-2547
jtm@chaveztyffany.com

APPLGATE GROUP, INC.
CROSS CREEK METROPOLITAN DISTRICT
NON-POTABLE PUMP STATION

JOB NO.
DRAWN BY JJA
CHECKED BY JJA
DATE 7/1/15

DRAWING TITLE
ELECTRICAL PLAN

DRAWING NO.

E-1

IN THE DISTRICT COURT IN AND FOR
WATER DIVISION NO. 2
STATE OF COLORADO

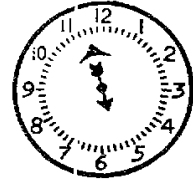
CASE NO. W-1814

IN THE MATTER OF THE APPLICATION)
FOR WATER RIGHTS OF)
DONALD A. HIBBARD)
PHYLLIS F. HIBBARD)
IN EL PASO COUNTY)

JUDGMENT AND DECREE

Filed in the office of the Clerk,
District Court Water Division
No. 2, State of Colorado

JUL 31 '73 AM



Roseleen Anderson
CLERK

THE COURT FINDS:

1. That the Ruling of Referee was filed on June 25, 1973.
2. That the Water Referee designated in said ruling June, 1975, for the filing of application for biennial finding of reasonable diligence; that pursuant to CRS 1963, 148-21-17, as amended June 7, 1973, the Court hereby designates June, 1977, for filing of application for quadrennial finding of reasonable diligence instead.
3. That no protest has been filed to the Ruling of the Water Referee within the time provided by law, and that said Ruling should be confirmed, approved and adopted with the change stated in Paragraph 2 above.

IT IS, THEREFORE, ORDERED, ADJUDGED AND DECREED That the Ruling of the Water Referee entered on June 25, 1973, be and is hereby amended to show that application for quadrennial finding of reasonable diligence shall be filed during the month of June, 1977, and that said Ruling, as amended herein, be and the same is incorporated herein by reference and is hereby confirmed, approved and adopted as the judgment of this Court.

Done this 31st day of July, A. D. 1973.

BY THE COURT:

William L. Gobin
WILLIAM L. GOBIN, WATER JUDGE

cc: Donald A. and
Phyllis F. Hibbard, Applicants

Division Engineer

State Engineer

IN THE DISTRICT COURT IN AND FOR
WATER DIVISION NO. 2
STATE OF COLORADO

CASE NO. W-1814

IN THE MATTER OF THE APPLICATION)
FOR WATER RIGHTS OF)
DONALD A. HIBBARD)
PHYLLIS F. HIBBARD)
IN EL PASO COUNTY)

RULING OF REFEREE

Filed in the office of the Clerk
District Court Water Division
No. 2 State of Colorado

JUN 25 73 AM



James A. Adams
CLERK

Pursuant to Order of Referral filed and entered in the above case on June 21, 1972, the undersigned Water Referee, having investigated the matter of the application on file herein, hereby makes the following findings and ruling thereon:

FINDINGS OF FACT

1. That the said application was filed on June 21, 1972.
2. That the Water Clerk caused publication of such filing as provided by statute; that the time for filing Statements of Opposition expired on the last day of August, 1972, and that none has been filed.
3. That the application concerns four wells and one storage right located in El Paso County, Colorado, and is used for irrigation purposes.
4. That applicants own 198 shares of the capital stock of the Fountain Mutual Irrigation Company also used for irrigation purposes.
5. That one of wells above named is not in production at this time and is therefore awarded a conditional right.
6. That applicants have furnished acceptable proof as to claims made.

IT IS, THEREFORE, ORDERED AS FOLLOWS: That applicants be, and are hereby, awarded certain absolute and conditional underground and storage rights, to-wit:

NAME AND ADDRESS: Donald A. Hibbard
Phyllis F. Hibbard
1722 Culebra Place
Colorado Springs, Colorado 80907

UNDERGROUND WATER RIGHT

NAME OF WELL: Well No. 1.

LOCATION OF WELL: NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T. 15S., R. 65W. of the
6th P.M., in El Paso County, Colorado, being
at a point from whence the West 1/4 corner
of said Section 33 bears N 49 degs. 15' W a
distance of 1370 feet.

DEPTH: 15 feet.

PRIORITY DATE: May 6, 1955.

AMOUNT OF WATER: 1.25 c.f.s., or 560 g.p.m.

USE OF WATER: Irrigation purposes.

STATE ENGINEER'S WELL NUMBER: Map filing No. 20201.

MEANS OF DIVERSION: Well and pump.

UNDERGROUND WATER RIGHT

NAME OF WELL: Well No. 2.

LOCATION OF WELL: NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T. 15S., R. 65W. of the
6th P.M., in El Paso County, Colorado, being
at a point from whence the West 1/4 corner
of said Section 33, bears N 59 degs. 20' W
a distance of 1140 feet.

DEPTH: 40 feet.

PRIORITY DATE: May 6, 1955.

AMOUNT OF WATER: 2.00 c.f.s., or 900 g.p.m.

USE OF WATER: Irrigation purposes.

STATE ENGINEER'S WELL NUMBER: Map filing No. 2021.

MEANS OF DIVERSION: Well and pump.

CONDITIONAL
UNDERGROUND WATER RIGHT

NAME OF WELL: Well No. 3.

LOCATION OF WELL: NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 33, T. 15S., R. 65W. of the
6th P.M., in El Paso County, Colorado, being
at a point from whence the West 1/4 corner
of said Section 33 bears N 61 degs. 30' W
a distance of 750 feet.

DEPTH: 38 feet.

PRIORITY DATE: May 6, 1955 (Conditional).

AMOUNT OF WATER: 1.25 c.f.s., or 560 g.p.m.(Conditional)

USE OF WATER: Irrigation purposes.

STATE ENGINEER'S WELL NUMBER: Map filing Number 2021.

MEANS OF DIVERSION: Well and pump.

UNDERGROUND WATER RIGHT

NAME OF WELL: Well No. 4.

LOCATION OF WELL: NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 32, T. 15S., R. 65W. of the 6th P.M., in El Paso County, Colorado, being at a point from whence the East $\frac{1}{4}$ corner of said Section 32 bears N 16 degs. 30' East, a distance of 1260 feet.

DEPTH: 37 feet.

PRIORITY DATE: May 6, 1955.

AMOUNT OF WATER: 1.0 c.f.s., or 450 g.p.m.

USE OF WATER: Irrigation purposes.

STATE ENGINEER'S WELL NUMBER: RF 1086.

MEANS OF DIVERSION: Well and pump.

WATER RIGHT

NAME OF DITCH, SPRING,
OR OTHER STRUCTURE: Hale Reservoir.

LOCATION OF POINT OF DIVERSION: Located in the SE $\frac{1}{4}$ Sec. 25, T. 15S., R. 65W. of the 6th P.M., in El Paso County, Colorado.

DESCRIPTION OF DITCH AND/OR PIPELINE

(MEANS OF DIVERSION): Dam across a draw tributary to the Arkansas River System, with 12" gate valve and 80 feet of galvanized 12" pipe through the dam, discharged to a system of ditches.

SOURCE OF WATER: Flood water and spring water tributary to the Arkansas River System.

PRIORITY DATE: July 19, 1945, provided, however, that this right shall be junior to all priorities awarded in cases filed prior to 1972, and otherwise junior as provided in CRS 1963, 148-21-22, as amended.

AMOUNT OF WATER: 18 acre feet.

USE OF WATER: Irrigation purposes.

LAND IRRIGATED: 55 acres of land in Sec. 32, T. 15S., R. 65W. of the 6th P.M., in El Paso County, Colorado.

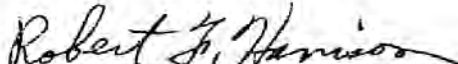
IT IS FURTHER ORDERED THAT, as to any conditional right awarded hereunder, the owner thereof if he desires to maintain the same, shall file an application for biennial finding of reasonable diligence with the Water Clerk of this Court during the month of June, 1975, and every two years thereafter until the right is decreed final, such application to be filed pursuant to C.R.S. 1963, 148-21-18, as amended.

IT IS FURTHER ORDERED That, applicants shall install and maintain such water measurement devices, recording devices, content gauges and inlet and outlet measurement and recording devices, as the case may be, as deemed essential by the Office of the State Engineer, and the same shall be installed and operated in accordance with instructions from said Office.

IT IS FURTHER ORDERED That copies of this ruling shall be mailed as provided by statute.

Dated and filed with the Water Clerk this 25th day of June, A. D. 1973.

BY THE REFEREE:


Water Referee, Water Division No. 2
State of Colorado



New Pond Surface 3-4 / deep = appx 10 acre-feet of new storage capacity



New Wetland Features, inundation area

