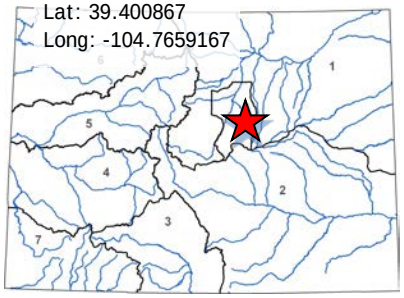
COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Water Plan Grant Application

Walker Reservoir
Cherry Creek Project Water Authority
July 2020 Board Meeting



LOCATION	
County/Counties:	Douglas
Drainage Basin:	South Platte

DETAILS	
Total Project Cost:	$15,500,000
Water Plan Grant Request:	$1,000,000
Recommended Amount:	$1,000,000
Other CWCB Funding:	$0
Other Funding Amount:	$0
Applicant Match:	$14,500,000
Project Type(s):	Construction
Project Category(Categories):	Storage & Supply
Measurable Result:	1,000 acre-feet new storage

The Cherry Creek Project Water Authority (CCPWA) is a Colorado Title 29 Authority formed in 2005 through intergovernmental agreement between the Inverness Water and Sanitation District, the Pinery Water and Wastewater District, the Arapahoe County Water and Wastewater Authority, and the Cottonwood Water and Sanitation District. The Authority was formed in order to purchase and develop water supplies for these four entities from the upper Cherry Creek Basin. The Authority purchased surface water and ground water rights, and property intended for reservoir construction from Western Water Company, a privately held water company. The Authority then purchased additional senior surface water and alluvial rights and deep groundwater in upper Cherry Creek. The Authority then developed a Master Plan and used the plan as a basis for a water rights application for these rights and an augmentation plan to utilize this water. The plan was decreed as 10CW318 in 2015. The Authority is now implementing the plan by constructing facilities

This grant request is for the construction of Walker Reservoir, a 1,000 acre-foot reservoir located directly adjacent to Cherry Creek near Franktown, Colorado. There is currently an abandoned gravel pit at this location which contains alluvial ground water fed by Cherry Creek. CCPWA plans to expand the volume of this gravel pit and seal the pit from Cherry Creek with a concrete slurry wall.

This project is intended to maximize the development of surface water supplies it currently owns. This project will allow for storage of up to 2,000 acre feet per year which is the decreed annual storage volume with fill and refill. Senior and junior surface water rights will be diverted when they are in priority, with the annual yield firmed by using deep ground water rights. The deep groundwater utilized for firming each year as necessary, is a small percentage of the total decreed ground water. Water will be released from the reservoir to Cherry Creek and captured by Authority members downstream through existing infrastructure or traded.

The project aligns with the Water Plans measurable goal of attaining 400,000 AF of water storage by 2050 by developing new storage in the South Platte basin.

Funding Recommendation: Staff is recommending approval of the full request of $1,000,000 from the Storage and Supply category. This is approximately 6% of the project costs. The remainder of the project will be funded by Authority members.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: July 2019

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 Projects	Anna.Mauss@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
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	Cherry Creek Project Water Authority
Name of Water Project	Walker Reservoir

CWP Grant Request Amount	$ 1,000,000
Other Funding Sources _____	$
Other Funding Sources _____	$
Other Funding Sources _____	$
Applicant Funding Contribution	$ 14,500,000
Total Project Cost	$ 15,500,000

Last Updated: July 2019

Applicant & Grantee Information	
Name of Grantee(s) Cherry Creek Project Water Authority	
Mailing Address	188 Inverness Drive West, Suite 150, Englewood, CO 80112
FEIN	32-0166345
Organization Contact	
Position/Title	Richard Krulish, Executive Director
Email	RKrulish@pinerywater.com
Phone	303-841-2797
Grant Management Contact	
Position/Title	Kelly Conover, Administrator
Email	kelly@mulhernmre.com
Phone	303-649-9857
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).

The Cherry Creek Project Water Authority ("CCPWA") is a Colorado Title 29 Authority formed in 2005 through intergovernmental agreement between the Inverness Water and Sanitation District, the Pinery Water and Wastewater District, the Arapahoe County Water and Wastewater Authority, and the Cottonwood Water and Sanitation District. The Authority was formed in 2005 in order to purchase and develop water supplies for these four entities from the upper Cherry Creek Basin. The Authority purchased surface water and ground water rights, and property intended for reservoir construction from Western Water Company, a privately held water company.

Following purchase of the water rights, the Authority purchased additional senior surface water and alluvial rights and deep groundwater in upper Cherry Creek. The Authority then developed a Master Plan and used the plan as a basis for a water rights application for these rights and an augmentation plan to utilize this water. The plan was decreed as 10CW318 in 2015. The Authority is now implementing the plan by constructing facilities.

Last Updated: July 2019

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
	Identified Projects and Processes (IPP)
	Other

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

Last Updated: July 2019

Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Douglas County
Latitude	39.400867 N
Longitude	104.7659167 W

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.
Project: Walker Reservoir Construction This project is the construction of a 1,000 acre-foot reservoir located directly adjacent to Cherry Creek near Franktown, Colorado. There is currently an abandoned gravel pit at this location which contains alluvial ground water fed by Cherry Creek. The plan is to expand the volume of this gravel pit and seal the pit from Cherry Creek with a concrete slurry wall. The Walker Reservoir is part of the facilities required to develop a conjunctive use water supply project as described in the Cherry Creek Project Master Plan. The CCPWA has decreed tributary water rights amounting to 1,265.9 acre-feet of water supply on Cherry Creek. These water rights are senior and junior water rights with appropriation dates of 1885 to 1984. This project is intended to maximize the development of these surface water supplies. This project will allow for storage of up to 2,000 acre-feet per year which is the decreed annual storage volume with fill and refill. The project is to divert senior and junior surface water rights when they are in priority. The annual yield of the project will be firmed by using deep ground water rights. The deep groundwater utilized for firming each year as necessary, is a small percentage of the total decreed ground water of 7,699.1 acre-feet. Water will be diverted from Cherry Creek through an alluvial wellfield and pumped into the reservoir. The water in the reservoir will be used directly by the Pinery Water and Wastewater District through releases to Cherry Creek and then pumping the water into their water distribution system a short distance downstream using existing alluvial wells. The other participants (Inverness Water and Sanitation District, the Arapahoe County Water and Wastewater Authority, and the Cottonwood Water and Sanitation District) will move the water downstream from Walker Reservoir during conditions where the stream is live either to points of diversion for direct use or may trade water for other sources such as WISE water. The plan also considers moving the water via Cherry Creek to Rueter Hess Reservoir subject to the Parker Water and Sanitation District's willingness to lease or sell diversion and storage capacity. Storage in Rueter Hess would greatly expand the window of deliveries and hence would improve the participants' capability to manage the water supply.

Last Updated: July 2019

Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
1,000 acre-feet	New Storage Created (acre-feet)	
1,296 acre-feet	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

Water Project Justification
Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, 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 water supply is part of the plan of South Metro Water Supply Entities to replace the use of existing deep non-tributary ground water with renewable water supplies. The development of this renewable water was part of the water supply gap as identified in the SWSI. These replacement supplies were largely developed through the WISE Project with Inverness, the Pinery and Cottonwood participating in the WISE Project as members of the South Metro Water Supply Authority. ACWWA developed replacement supplies through its ACWWA Flow Project which imports renewable water from the South Platte Basin north of Denver. Both of these projects were IPP Projects identified in SWSI, and the WISE Project utilizes water from Aurora's Prairie Waters Project, another IPP Project. While each of these entities has greatly reduced its reliance on non-tributary ground water, development of these local supplies will further reduce the use of non-tributary ground water and will provide storage for drought and protection from water supply variability predicted by climate change. Each of these participants has an adopted Water Conservation Plan, and has been successful in reducing its per capita use of water supply through the plans and better management of its water. Each of these entities also have substantial reuse of all of their water supplies which have been decreed for reuse. These entities actually share water supplies on Cherry Creek through reuse which occurs 3 to 4 times over a distance of 12 miles. Finally, this project is consistent with the goals of the State Water Plan including the stated goal of developing additional water storage.

Last Updated: July 2019

Related Studies

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

The following studies were prepared in support of this project:

1) Cherry Creek Project Water Supply Master Plan, prepared by Spronk Water Engineers and TST Consultants (2014)
2) Final Design Report, Walker Reservoir, prepared by Cesare & Assoc., August, 2018
3) Geotechnical Evaluations & Design Recommendations, Walker Reservoir, prepared by Brierly Assoc. June, 2019
4) Biological Assessment, CCPWA Walker Reservoir Project, prepared by ERO Assoc. , September, 2017
5) Biological Opinion Letter, USFWS, June, 2019
6) Preliminary Design Drawings of Walker Reservoir (65%)

The Water Rights and Augmentation Plan decreed to allow for operation of this water supply plan:

1) 10CW318

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.

No other grants or loans have been made to the Cherry Creek Project Water Authority for this project or any other part of the water supply plan. Inverness, the Pinery and Cottonwood have all received WSRF grants and loans through the South Metro Water Supply Authority for participation in the WISE Project. Cottonwood also received a WSRF grant for the construction of a Biological Treatment System to remove selenium from the brine produced from its RO Water Treatment Plant.

Funding for the Project will be contributed by the participants in the Authority. Currently, the Authority has $7.5 Million in its reserves. The Participants either have additional reserves available within their entities and/or have the authorization to borrow the additional funds.

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.

The CCPWA depends on assessments of each of its members as its primary source of revenues. The entities all have individual enterprises that will fund the project. These are enterprises and are not subject to TABOR restrictions.

Last Updated: July 2019

Submittal Checklist	
x	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
x	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 3rd Party Commitments(1)
Exhibit C	
x	Map (if applicable)(1)
x	Photos/Drawings/Reports
X	Letters of Support (Optional)
x	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
x	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation 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: July 2019

Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**November 2019**
Name of Grantee:	**Cherry Creek Project Water Authority**
Name of Water Project:	**Walker Reservoir**
Funding Source:	
Water Project Overview:	
This project is the construction of a 1,000 acre-foot reservoir located directly adjacent to Cherry Creek near Franktown, Colorado. There is currently an abandoned gravel pit at this location which contains alluvial ground water fed by Cherry Creek. The plan is to expand the volume of this gravel pit and seal the pit from Cherry Creek with a concrete slurry wall.	
Project Objectives:	
This project is intended to maximize the development of decreed tributary water supplies. This project will allow for storage of up to 2,000 acre-feet per year which is the decreed annual storage volume with fill and refill. The project is to divert senior and junior surface water rights when they are in priority. The annual yield of the project will be firmed by using deep ground water rights. The deep groundwater utilized for firming each year as necessary, is a small percentage of the total decreed ground water of 7,699.1 acre-feet.	

Tasks
Task 1 – Mobilization and Site Preparation
Description of Task:
The contractor mobilizes equipment and prepares the site for construction to begin.
Method/Procedure:
Upon notice to proceed, the contractor will bring construction trailers and equipment to the site, set up the construction office, place erosion control protection, begin dewatering operations, and strip and stockpile topsoil.
Deliverable:
a) Installation of silt fence, vehicle tracking control as the main erosion control Best Management Practices (BMPs) but not limited to additional BPMs required to minimize sediment movement out of the site. B) Clearing and grubbing in order to strip the top soil layer of the site. C) Stockpile topsoil for future vegetation restoration of the site.

Tasks
Task 2 – General Excavation/Embankment Fill
Description of Task:
Earthwork/grading required per the construction drawings to modify both the banks and the storage capacity of the existing storage facility. In addition, a slurry wall is proposed to seal the facility from either seepage or inflow from the Cherry Creek alluvium surrounding the facility.
Method/Procedure:
Earthmoving will be completed to excavate the storage area, place and compact embankment fill, and dispose of the remaining material in waste areas on-site. Some minor rock excavation is anticipated.
Deliverable:
Approximately 1.3 million cubic yard of soil will be excavated and relocated within the site in order to grade the proposed storage facility.

Tasks
Task 3 – Supply Pipelines
Description of Task:
Supply water lines will be installed from alluvial wells adjacent to the reservoir, to the reservoir storage area.
Method/Procedure:
Open trench procedure will be followed to install the raw water lines into the reservoir site.
Deliverable:
Approximately 450 feet of 16” diameter pipelines will be installed to supply the reservoir from the nearby CCPWA’s alluvial well field.

Tasks
Task 4 – Spillway
Description of Task:
The spillway and outlet spillways will be constructed and rock protection will be placed including foundation trenches.
Method/Procedure:
The inlet spillway will be a grouted riprap rundown structure to be located on the inside, south-east corner, of the reservoir. The outlet spillway will be a soil-riprap rundown structure and will be located on the outside of the reservoir.
Deliverable:
Both spillways will be constructed from the top of the embankment to the toe of the structure. In addition, riprap size for the spillways will be Type VL and will include underdrain systems and concrete headers.

Tasks
Task 5 – Pump Station
Description of Task:
The pump station site will be excavated and the building constructed. Tower concrete will be poured and the site will be backfilled. The pumps, motors, mechanical equipment and electrical will be installed. Instrumentation and SCADA controls will be installed and the station will be tested.
Method/Procedure:
Construction of a concrete structure below grade with separate chambers for the pumps and wet well intake structure from the reservoir.
Deliverable:
a) Pump Station building, including pumps and controls b) A Motor Control Center (MCC) enclosure for VFDs, remote telemetry and power feed equipment c) Wet Well In-Take structure to connect the reservoir to the pump station

Tasks
Task 6 – Delivery Pipeline
Description of Task:
The delivery pipeline will be installed to provide for the discharge from the pump station into Cherry Creek.
Method/Procedure:
Open trench procedure will be followed to install the delivery water line from the reservoir pump station to the reservoir's outlet spillway which will convey flows to Cherry Creek
Deliverable:
Approximately 525 feet of 16" diameter pipelines will be installed to convey water from the pump station to the reservoir's outlet spillway to Cherry Creek.

Tasks
Task 7 – Slurry Wall
Description of Task:
The slurry wall trench will be excavated into bedrock and will be backfilled with a concrete slurry to seal the reservoir storage. Excavated materials will be placed in waste areas on the site.
Method/Procedure:
Excavation and removal of 37,300 cubic yards of native soil will take place along the perimeter of the lake in order to pour the slurry wall. The excess material will be wasted at sites identified on construction drawings.
Deliverable:
Construction of an impermeable soil-bentonite slurry wall around the perimeter of the lake. The slurry wall will extend vertically from near the ground surface, down through the alluvium, and into bedrock. The wall, in conjunction with the shale bedrock, will provide an impervious barrier for the reservoir from the alluvium surrounding it.

Last Updated: July 2019

Tasks
Task 8 – Site Reclamation
Description of Task:
Finished grading will be completed throughout the site and topsoil will be placed. The site will be seeded and following vegetation, the erosion control facilities will be removed.
Method/Procedure:
Topsoil will be spread over the graded areas in order to seed and mulch the site to encourage native vegetation growth as required by Douglas County.
Deliverable:
The entire site will be prepped with the topsoil stockpiled during the first task of the project for native seed germination. The selected contractor will be responsible for reseeding the site as needed until Douglas County determines that full site restoration has been accomplished.

Tasks
Task 9 – Site Engineering
Description of Task:
The engineering design firm and geotechnical consultant will complete site observation and testing to insure that all work is completed per specifications. This engineering is on behalf of the owner.
Method/Procedure:
Owner's representative will ensure that the design specs are met throughout the project.
Deliverable:
Owner's representative will be onsite during construction activities to manage the contractor and produce and maintain daily records for the owner, including monthly construction progress reports. In addition, he or she will review pay application requests and will make recommendations to the Authority for payment.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit B
Budget and Schedule

Prepared Date: February 13, 2020

Name of Applicant: Cherry Creek Project Water Authority

Name of Water Project: Walker Reservoir

Project Start Date: June 2020

Project End Date: May 2021

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	Mobilization and Site Preparation	June 2020	June 2020	$151,923	$2,216,697	$2,368,621
2	Excavation/ Embankment Fill	July 2020	December 2020	$325,544	$4,749,981	$5,075,525
3	Supply Pipelines	September 2020	October 2020	$5,538	$80,799	$86,336
4	Spillway	January 2021	March 2021	$67,121	$979,356	$1,046,477
5	Pump Station	October 2020	March 2021	$195,548	$2,853,217	$3,048,765
6	Delivery Pipeline	February 2021	March 2021	$8,529	$124,440	$132,969
7	Slurry Wall	August 2020	November 2020	$162,584	$2,372,246	$2,534,830
8	Site Reclamation	March 2021	May 2021	$35,582	$519,178	$554,760
9	Site Engineering	June 2020	May 2021	$47,618	$694,796	$742,415
						$0
						$0
						$0
						$0
			Total	$999,987	$14,590,710	$15,590,697

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: July 2019

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.

Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

Prepared Date: 11/14/2019
Name of Applicant: Cherry Creek Project Water Authority
Name of Water Project: Walker Reservoir

EXAMPLE C: Construction

Task 1 - Mobilization and Site Preparation

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
Mobilization	LS	LS	$1,157,870	$1,331,551		
Sedimentation Control	LS	LS	$200,000	$230,000		
Dewatering and Diversion	LS	LS	$500,000	$575,000		
Topsoil Stripping and Stockpiling	LS	27,200	$6.50	$203,320		
Demolition	LS	LS	$25,000	$28,750		
Task 1 - Total Cost				**$2,368,621**	**$151,923**	**$2,216,697**

Task 2 - Excavation/ Embankment Fill

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
Rock Excavation	CY	100	$85	$9,775		
General Excavation	CY	1,300,000	$2.50	$3,737,500		
Embankment Fill	CY	82,500	$14	$1,328,250		
Task 2 - Total Cost				**$5,075,525**	**$325,544**	**$4,749,981**

Task 3 - Supply Pipelines

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
North Supply Pipeline	LF	190	$165	$36,053		
South Supply Pipeline	LF	265	$165	$50,284		
Task 3 - Total Cost				**$86,336**	**$5,538**	**$80,799**

Last Updated: July 2019

Task 4 - Spillway

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
Inlet Spillway	LS	LS	$600,000	$690,000		
Outlet Spillway	LS	LS	$110,000	$126,500		
Rock Trenches	LF	303	$660	$229,977		
Task 4 - Total Cost				**$1,046,477**	**$67,121**	**$979,356**

Task 5 - Pump Station

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
Foundation Surface Preparation	SY	1,460	$25	$41,975		
Pump Station Excavation	CY	26,000	$8	$251,160		
Pump Station Backfill	CY	26,000	$14.00	$418,600		
Intake Structure	LS	LS	$160,000	$184,000		
Intake Conduit	LF	172	$2,100	$415,380		
Tower Concrete	CY	235	$1,800	$486,450		
Mechanical	LS	LS	$393,000	$451,950		
Building	LS	LS	$165,000	$189,750		
Site Electrical	LS	LS	$175,000	$201,250		
Electrical and Instrumentation	LS	LS	$175,000	$201,250		
SCADA	LS	LS	$180,000	$207,000		
Task 5 - Total Cost				**$3,048,765**	**$195,548**	**$2,853,217**

Task 6 - Delivery Pipeline

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
Delivery Pipeline	LF	525	$125	$75,469		
Delivery Outlet Structure	LS	LS	$50,000	$57,500		
Task 6 - Total Cost				**$132,969**	**$8,529**	**$124,440**

Task 7 - Slurry Wall

Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	CWCB Funds	Matching Funds
General Excavation	CY	33,500	$20	$770,500		
Rock Excavation	CY	3,800	$155	$677,350		
Slurry Fill	CY	37,300	$24	$1,029,480		
Testing/Commissioning	LS	LS	$50,000	$57,500		
Task 7 - Total Cost				**$2,534,830**	**$162,584**	**$2,372,246**

Last Updated: July 2019

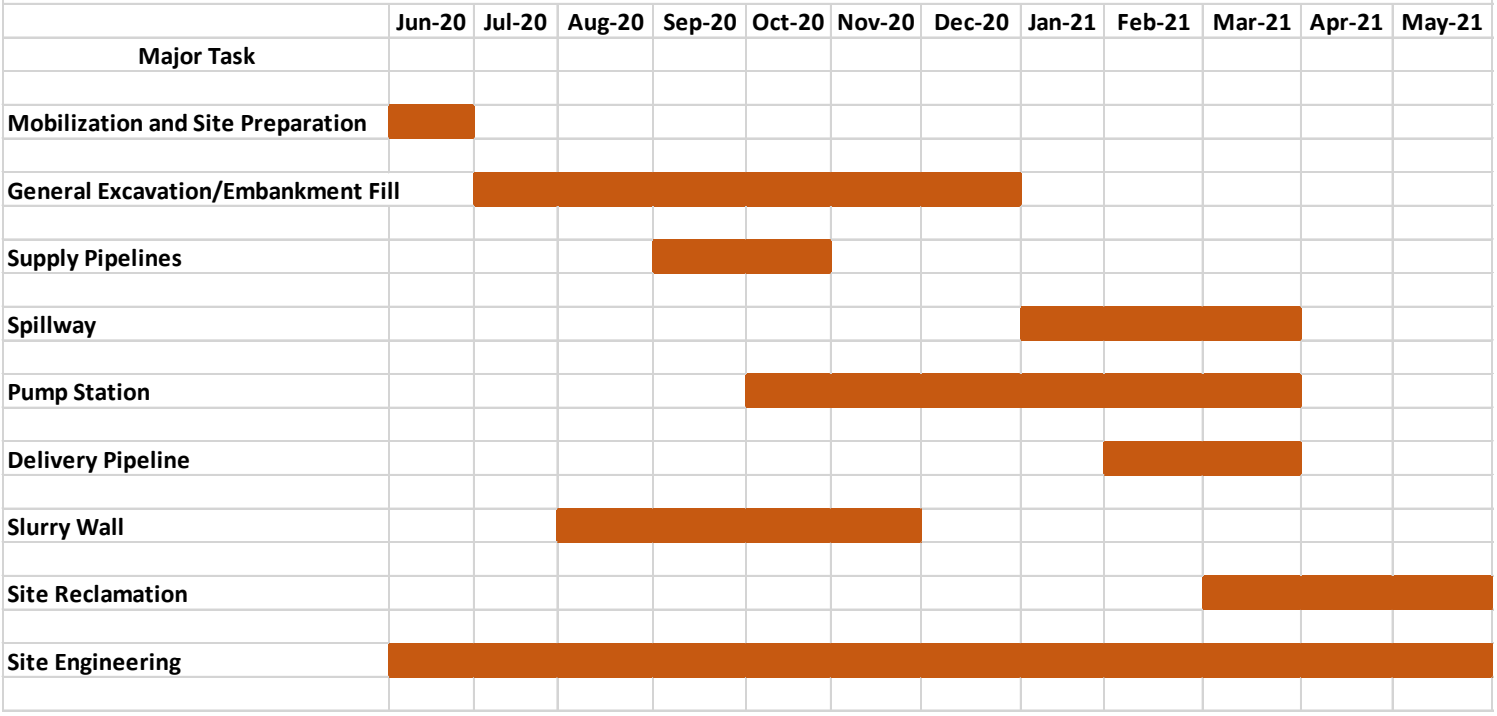
Task 8 - Site Reclamation						
Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	**CWCB Funds**	**Matching Funds**
Site Reclamation & Vegetation	AC	60	$6,000	$414,000		
Topsoil Replacement	CY	27,200	$4.50	$140,760		
Task 8 - Total Cost				**$554,760**	**$35,582**	**$519,178**

Task 9 - Site Engineering						
Sub-task	Unit	Quantity	Unit Cost	Total Cost (incl 15% contingency)	**CWCB Funds**	**Matching Funds**
Observation and Project Management	LS	LS	$645,578	$742,415		
Task 9 - Total Cost				**$742,415**	**$47,618**	**$694,796**

TOTAL				**$15,590,697**	**$999,987**	**$14,590,710**

Last Updated: July 2019

WALKER RESERVOIR
2020 Project Schedule
EXHIBIT A



Last Updated: July 2019

ENGINEER'S PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST
WALKER RESERVOIR PROJECT
BID NO. ???
CHERRY CREEK PROJECT WATER AUTHORITY
10-7-19

Item No.	Description	Unit	Estimated Quantity	Unit Price (Figures)	Unit Price (Written)	Bid Amount (Figures)
1	Mobilization	LS	LS	$1,157,870		$1,157,870
2	Sedimentation Control	LS	LS	$200,000		$200,000
3	Dewatering & Diversion	LS	LS	$500,000		$500,000
4	Topsoil Stripping and Stockpiling	CY	27,200	$6.50		$176,800
5	Topsoil Placement	CY	27,200	$4.50		$122,400
6	Demolition	LS	LS	$25,000		$25,000
7	Rock Excavation	CY	100	$85.00		$8,500
8	General Excavation	CY	1,300,000	$2.50		$3,250,000
9	Reservoir Embankment Fill	CY	82,500	$14.00		$1,155,000
~~10~~	~~Stability Berms~~	~~CY~~	~~-~~	~~$17.00~~		~~$0~~
11	North Supply Pipeline	LF	190	$165		$31,350
12	South Supply Pipeline	LF	265	$165		$43,725
13	Inlet Spillway	LS	LS	$600,000		$600,000
14	Outlet Spillway	LS	LS	$110,000		$110,000
15	Rock Trenches	LF	303	$660		$200,000
16	Foundation Surface Preperation	SY	1,460	$25.00		$36,500
17	Pump Station Excavation	CY	26,000	$8.40		$218,400
18	Pump Station Backfill	CY	26,000	$14.00		$364,000
19	Pump Station-Intake Structure	LS	LS	$160,000		$160,000
20	Pump Station-Intake Conduit	LF	172	$2,100		$361,200
21	Pump Station-Tower Concrete	CY	235	$1,800		$423,000
22	Pump Station-Mechanical	LS	LS	$393,000		$393,000
23	Pump Station-Building	LS	LS	$165,000		$165,000
24	Pump Station-Electrical and Instrumentation	LS	LS	$175,000		$175,000
25	Delivery Pipeline	LF	525	$125		$65,625
26	Delivery Outlet Structure	LS	LS	$50,000		$50,000
27	SCADA	LS	LS	$180,000		$180,000
28	Slurry Wall-General Excavation	CY	33,500	$20.00		$670,000
29	Slurry Wall-Rock Excavation	CY	3,800	$155		$589,000
30	Slurry Wall-Fill	CY	37,300	$24.00		$895,200
31	Slurry Wall-Testing/Commissioning	LS	LS	$50,000		$50,000
32	Site Reclamation	AC	60	$6,000		$360,000
~~33~~	~~Road Base~~	~~SY~~	~~-~~	~~$17.00~~		~~$0~~
34	Site Electrical	LS	LS	$175,000		$175,000

Total Bid		$ 12,911,570.00
	Engineering (5%)	$ 645,578.50
	Contingency (15%)	$ 1,936,735.50
Grand Total		**$ 15,493,884.00**

Last Updated: July 2019

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

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.

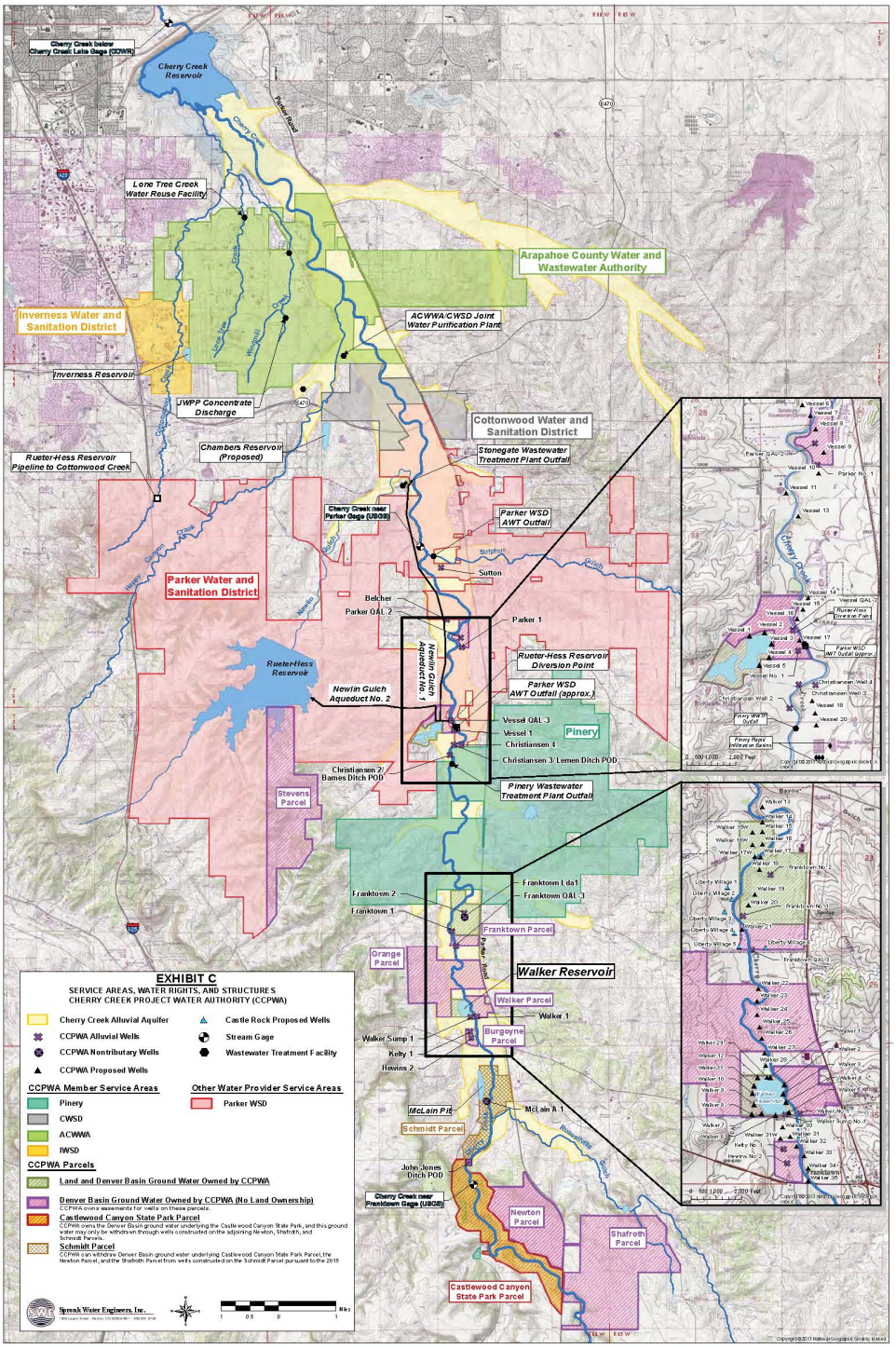
Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic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

Performance Measures

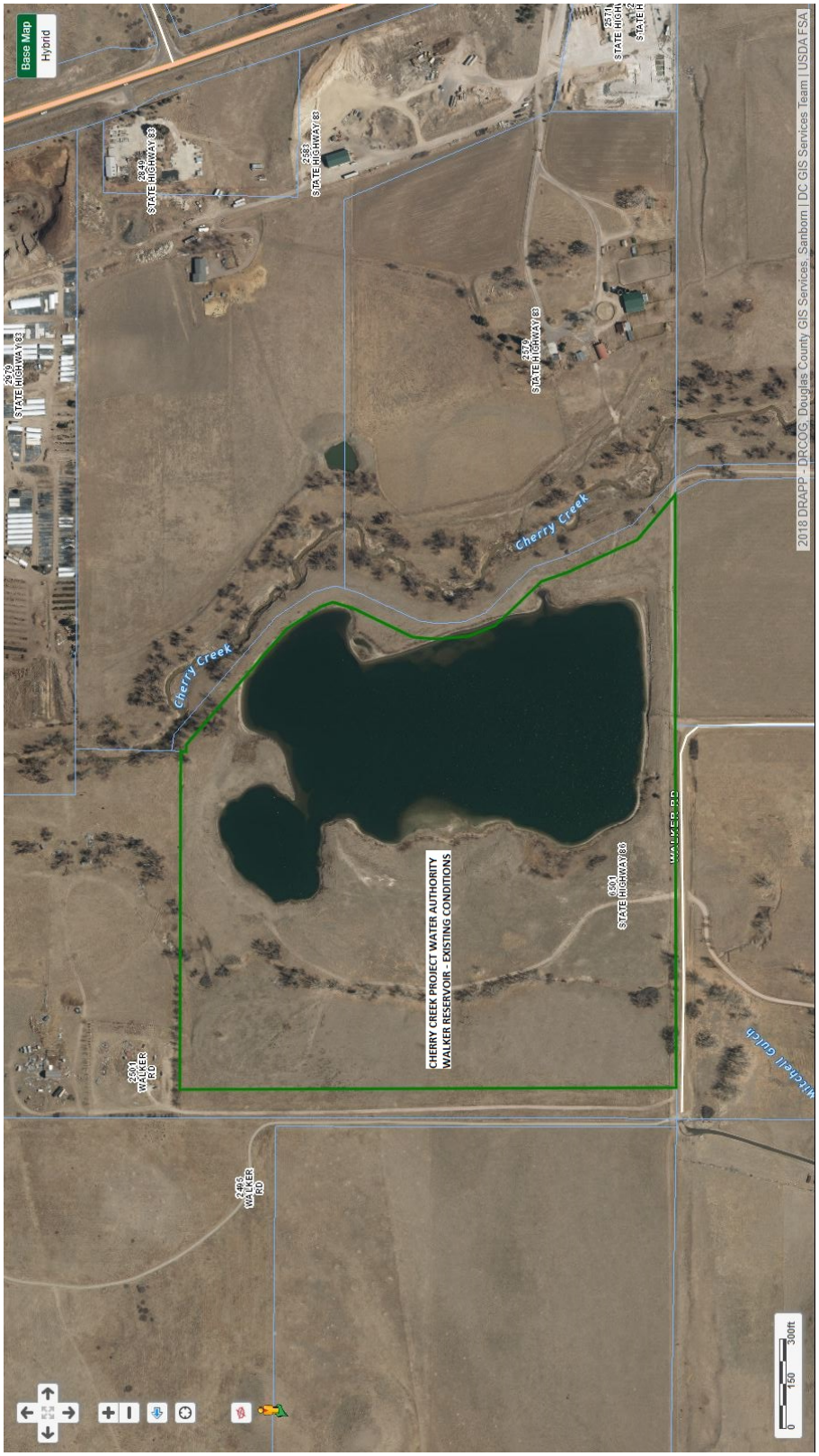
Performance measures for this contract shall include the following:
(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. 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: July 2019

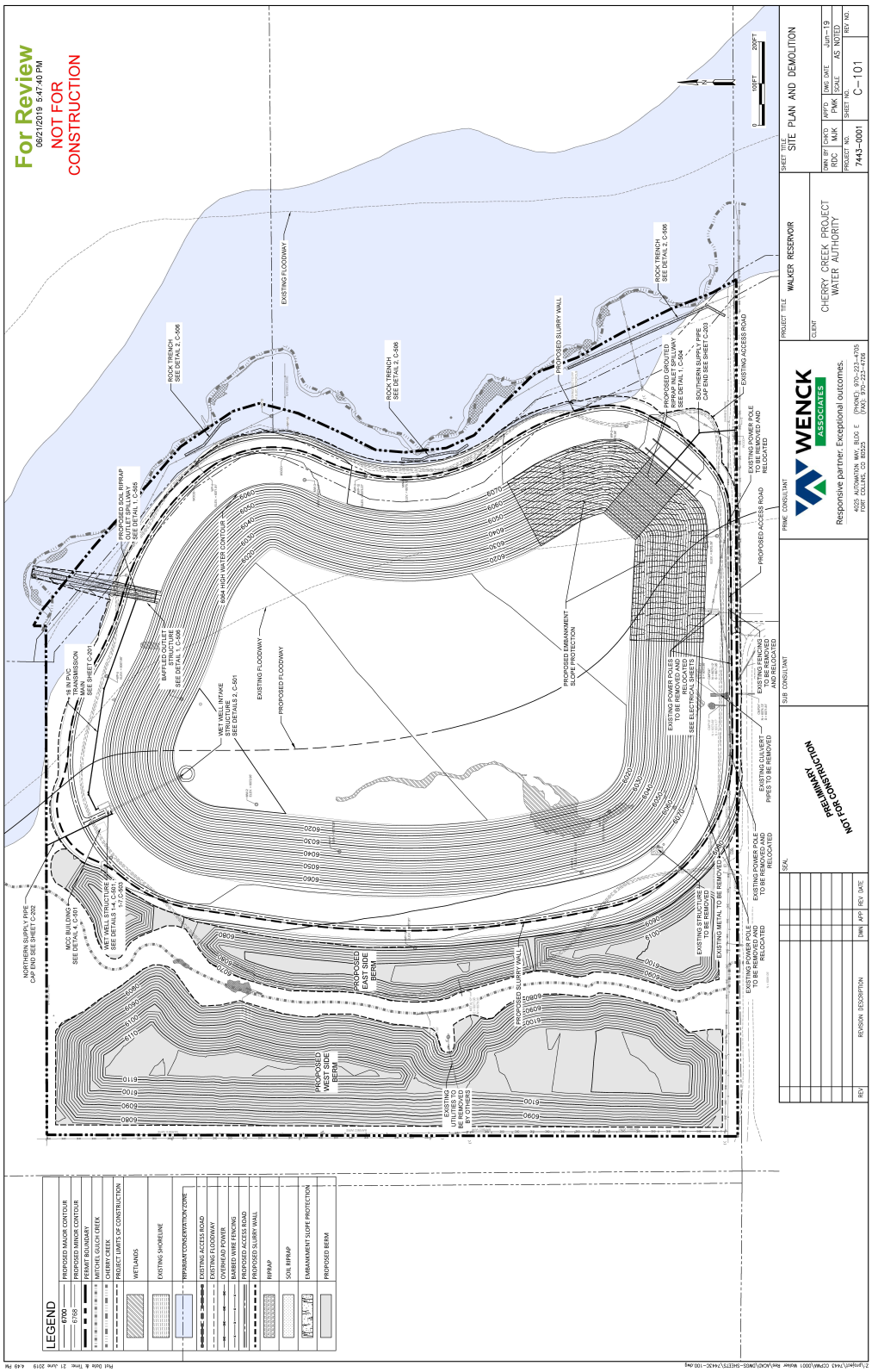
Exhibit C



Last Updated: July 2019



Last Updated: July 2019



November 18, 2019

Colorado Water Conservation Board
1313 Sherman Street, Suite 721
Denver, CO 80203

RE: Metro Roundtable Letter of Support

Dear Honorable Board Members,

On behalf of the Metro Roundtable, I am writing to express the Roundtable's support for the Cherry Creek Project Water Authority ("CCPWA") Water Plan grant application for the development of the Walker Reservoir near Franktown in Douglas County.

The Walker Reservoir will allow the for the diversion and storage of local renewable supplies in Cherry Creek decreed by the CCPWA whose members include the Pinery, Inverness, and Cottonwood Water and Wastewater Districts and the Arapahoe County and Wastewater Authority. With the development of this 1,000 acre-feet of storage in Walker Reservoir, the CCPWA will be in a position to maximize development of its local tributary water rights amounting to 1,266 acre-feet and through fill and refill, the reservoir will allow for storage of up to 2,000 acre-feet per year. This Reservoir Project is consistent with the Colorado Water Plan goal of adding storage to increase water availability and reduces the water gap for the South Platte Basin as identified in the Statewide Water Supply Initiative. These entities have also shown diligence in conservation, reuse of water sources, and development of conjunctive use water supplies. As such, the Metro Roundtable is pleased to support this application.

Sincerely,

Barbara Biggs, Chairwoman
Metro Roundtable

EXHIBIT A

STATEMENT OF WORK

Date: **November 2019**

Name of Grantee: **Cherry Creek Project Water Authority**

Name of Water Project: **Walker Reservoir**

Funding Source:

Water Project Overview:

This project is the construction of a 1,000 acre-foot reservoir located directly adjacent to Cherry Creek near Franktown, Colorado. There is currently an abandoned gravel pit at this location which contains alluvial ground water fed by Cherry Creek. The plan is to expand the volume of this gravel pit and seal the pit from Cherry Creek with a concrete slurry wall.

Project Objectives:

This project is intended to maximize the development of decreed tributary water supplies. This project will allow for storage of up to 2,000 acre-feet per year which is the decreed annual storage volume with fill and refill. The project is to divert senior and junior surface water rights when they are in priority. The annual yield of the project will be firmed by using deep ground water rights. The deep groundwater utilized for firming each year as necessary, is a small percentage of the total decreed ground water of 7,699.1 acre-feet.

Tasks

Task 1 – Mobilization and Site Preparation

Description of Task:

The contractor mobilizes equipment and prepares the site for construction to begin.

Method/Procedure:

Upon notice to proceed, the contractor will bring construction trailers and equipment to the site, set up the construction office, place erosion control protection, begin dewatering operations, and strip and stockpile topsoil.

Deliverable:

a) Installation of silt fence, vehicle tracking control as the main erosion control Best Management Practices (BMPs) but not limited to additional BPMs required to minimize sediment movement out of the site. B) Clearing and grubbing in order to strip the top soil layer of the site. C) Stockpile topsoil for future vegetation restoration of the site.

Task 2 – General Excavation/Embankment Fill

Description of Task:

Earthwork/grading required per the construction drawings to modify both the banks and the storage capacity of the existing storage facility. In addition, a slurry wall is proposed to seal the facility from either seepage or inflow from the Cherry Creek alluvium surrounding the facility.

Method/Procedure:

Earthmoving will be completed to excavate the storage area, place and compact embankment fill, and dispose of the remaining material in waste areas on-site. Some minor rock excavation is anticipated.

Deliverable:

Approximately 1.3 million cubic yard of soil will be excavated and relocated within the site in order to grade the proposed storage facility.

Task 3 – Supply Pipelines

Description of Task:

Supply water lines will be installed from alluvial wells adjacent to the reservoir, to the reservoir storage area.

Method/Procedure:

Open trench procedure will be followed to install the raw water lines into the reservoir site.

Deliverable:

Approximately 450 feet of 16" diameter pipelines will be installed to supply the reservoir from the nearby CCPWA's alluvial well field.

Task 4 – Spillway

Description of Task:

The spillway and outlet spillways will be constructed and rock protection will be placed including foundation trenches.

Method/Procedure:

The inlet spillway will be a grouted riprap rundown structure to be located on the inside, south-east corner, of the reservoir. The outlet spillway will be a soil-riprap rundown structure and will be located on the outside of the reservoir.

Deliverable:

Both spillways will be constructed from the top of the embankment to the toe of the structure. In addition, riprap size for the spillways will be Type VL and will include underdrain systems and concrete headers.

Task 5 – Pump Station

Description of Task:

The pump station site will be excavated and the building constructed. Tower concrete will be poured and the site will be backfilled. The pumps, motors, mechanical equipment and electrical will be installed. Instrumentation and SCADA controls will be installed and the station will be tested.

Method/Procedure:

Construction of a concrete structure below grade with separate chambers for the pumps and wet well intake structure from the reservoir.

Deliverable:

a) Pump Station building, including pumps and controls
b) A Motor Control Center (MCC) enclosure for VFDs, remote telemetry and power feed equipment
c) Wet Well In-Take structure to connect the reservoir to the pump station

Task 6 – Delivery Pipeline

Description of Task:

The delivery pipeline will be installed to provide for the discharge from the pump station into Cherry Creek.

Method/Procedure:

Open trench procedure will be followed to install the delivery water line from the reservoir pump station to the reservoir's outlet spillway which will convey flows to Cherry Creek

Deliverable:

Approximately 525 feet of 16" diameter pipelines will be installed to convey water from the pump station to the reservoir's outlet spillway to Cherry Creek.

Task 7 – Slurry Wall

Description of Task:

The slurry wall trench will be excavated into bedrock and will be backfilled with a concrete slurry to seal the reservoir storage. Excavated materials will be placed in waste areas on the site.

Method/Procedure:

Excavation and removal of 37,300 cubic yards of native soil will take place along the perimeter of the lake in order to pour the slurry wall. The excess material will be wasted at the sites identified on the construction drawings.

Deliverable:

Construction of an impermeable soil-bentonite slurry wall around the perimeter of the lake. The slurry wall will extend vertically from near the ground surface, down through the alluvium, and into bedrock. The wall, in conjunction with the shale bedrock, will provide an impervious barrier for the reservoir from the alluvium surrounding it.

Task 8 – Site Reclamation

Description of Task:

Finished grading will be completed throughout the site and topsoil will be placed. The site will be seeded and following vegetation, the erosion control facilities will be removed.

Method/Procedure:

Topsoil will be spread over the graded areas in order to seed and mulch the site to encourage native vegetation growth as required by Douglas County.

Deliverable:

The entire site will be prepped with the topsoil stockpiled during the first task of the project for native seed germination. The selected contractor will be responsible for reseeding the site as needed until Douglas County determines that full site restoration has been accomplished.

Task 9 – Site Engineering

Description of Task:

The engineering design firm and geotechnical consultant will complete site observation and testing to insure that all work is completed per specifications. This engineering is on behalf of the owner.

Method/Procedure:

Owner's representative will ensure that the design specs are met throughout the project.

Deliverable:

Owner's representative will be onsite during construction activities to manage the contractor and produce and maintain daily records for the owner, including monthly construction progress reports. In addition, he or she will review pay application requests and will make recommendations to the Authority for payment.