



**Cherry Creek Basin Water Quality Authority
Technical Advisory Committee Meeting Agenda
Thursday, March 7, 2024, 9:00 a.m.**

In-person attendance is encouraged due to audio limitations in the meeting room.

**In-Person: SEMSWA
7437 S. Fairplay St.
Centennial, CO 80112**

**Virtual: Zoom
<https://us06web.zoom.us/j/87425775963> Passcode: CCBWQA
Phone (646)931-3860 Mtg ID: 874 2577 5963# Passcode: 815374**

TAC Meeting Documents can be found online at the link below.

<https://drive.google.com/drive/folders/12BoEhmFbnnMCxivnpjY2l7T5TzP8Azlq?usp=sharing>

1. Call to Order (9:00) (5 minutes)
2. Meeting Minutes from February 1, 2024 (enclosed)
3. Highlights from the February 15, 2024 Board Meeting (Clary) (9:05) (5 minutes)
4. Action Items (9:10) (15 minutes)
 - a. Recommendation on the [WY 2023 Monitoring Report](#) (Stewart, link attached)
 - b. Recommendation on Piney Creek Reaches 1&2 IGA Amendment (Loewen, enclosed)
5. Discussion Items (9:25) (50 minutes)
 - a. CIP Subcommittee Next Steps (Knerr/Clary, enclosed)
 - b. Real-Time Water Quality Monitoring Options for Cherry Creek Reservoir (Stewart, enclosed)
 - c. WQCD 10-Year Water Quality Roadmap Updates (DiToro, enclosed)
 - d. Cherry Creek Reach 1 Status Update (Loewen/Muller, enclosed)
 - i. [Exhibits](#)
 - e. Potential Modifications to Land Use Referral Process (Clary, current process enclosed)
 - f. CDOT Roadway BMP/SCM Survey (Clary, enclosed draft survey)
 - g. [Runoff Reduction Report](#) and [Supporting Documents](#) (Clary, link attached)
6. Presentations (10:15) (15 minutes)
 - a. SPLASH P-free Fertilizer and Landscape Management Initiative (Byerley)
7. TAC Member Updates (As Needed)
8. Updates (20 minutes)
 - a. Manager (Clary)
 - i. Watershed Planning Workshop - April 18, 2024 8:30-11:30 am
 - ii. Reminder: 2023 CCBWQA Annual Report on Activities Comments Due by March 14, 2024
 - a. [2023 Annual Report on Activities - Draft](#)
 - b. [2023 Executive Summary - Draft](#)
 - iii. Lake Loop Shoreline Stabilization Status Update
 - iv. Lone Tree Creek Master Plan Update
 - v. Regulation 72 Hearing: February 12, 2024 Update
https://drive.google.com/drive/u/1/folders/1CH5cOj9ym7Qr_cXi6n4uylyUZtfKs6gl
 - b. Cherry Creek Stewardship Partners (Davenhill)
 - i. Conference Planning
 - c. [TAC Subcommittees](#) (As Needed)
 - i. Modeling Subcommittee
 - ii. Watershed Plan Subcommittee
 - iii. Cherry Creek Reach 1 Reservoir to Lakeview Drive Alternatives Analysis Subcommittee
 - iv. Lone Tree, Windmill, and Cottonwood Creek Subcommittee
 - d. Contractors (As Needed)
 - i. [Water Quality Update](#) (Stewart)
 - ii. Pollution Abatement Projects - CIP Status Report (Loewen, enclosed)

- iii. In-Park PRF and RDS Maintenance and Operations (Goncalves)
 - iv. Regulatory (DiToro)
 - v. [Land Use Referral Tracking](#) (Endyk)
9. Adjournment

[Board Binder](#) and [2024 Timeline](#)



**Cherry Creek Basin Water Quality Authority
Technical Advisory Committee Meeting Agenda
Thursday, February 1, 2024, 9:00 a.m.**

TAC Members Present

Alex Mestdagh, Town of Parker
Ashley Byerley, TAC Vice Chair, SEMSWA (representing the City of Centennial)
Caitlin Gappa, Board Appointee, Douglas County Health Department (zoom)
Diana Rashash, Board Appointee, Arapahoe County Public Health
Gene Seagle, US Army Corps of Engineers
Jacob James, City of Lone Tree
James Linden, SEMSWA - Alternate (zoom)
Jeremiah Unger, CDOT
Jim Watt, Board Appointee, Mile High Flood District
Joseph Marencik, City of Castle Pines
Jon Erickson, Board Appointee, Colorado Parks and Wildlife (zoom)
Kat Hoffman, CDOT - Alternate (zoom)
Lisa Knerr, TAC Chair, Arapahoe County
Michelle Seubert, Board Appointee, Cherry Creek State Park
Rick Goncalves, Board Appointee
Ryan Adrian, Douglas County (zoom)

Board Members Present

Bill Ruzzo, Assistant Secretary, Governor's Appointee
Tom Downing, Governor's Appointee (zoom)

Others Present

Alan Leak, RESPEC
Elysa Loewen, Loewen Engineering
Erin Stewart, LRE Water
Jane Clary, Wright Water Engineers, CCBWQA Technical Manager
Jessica DiToro, LRE Water
Val Endyk, CCBWQA

1. Call to Order

a. Introduction of Elysa Loewen, Pollution Abatement Project Manager

Lisa Knerr called the meeting to order at 9:00 am.

Lisa Knerr introduced Elysa Loewen with Loewen Engineering as CCBWQA's new Pollution Abatement Project Manager.

Lisa also introduced Kat Hoffman with CDOT. Kat is replacing Tripp Minges as Jeremiah Unger's alternate for CDOT.

2. Meeting Minutes from January 4, 2024

Jacob James moved to approve the January 4, 2024 meeting minutes. Seconded by Diana Rashash. The motion carried.

3. Highlights from the January 18, 2024 Board Meeting

Jane Clary provided an update on actions taken at the January 18, 2024 Board meeting. Minutes from the meeting can be found [here](#).

4. Action Items

a. Acceptance of RDS 2023 Annual Operations and Maintenance Report

Rick Goncalves [presented](#) the [2023 Operation and Maintenance Annual Report](#) on the Reservoir Destratification System (RDS) to the TAC and provided recommendations for 2024 RDS operation as outlined in his [action item memo](#). The recommended maintenance cost and operational activities outlined below are within the 2024 budget.

- Authorize additional maintenance of the compressor oil coolers.
- Continue monitoring annual energy consumption.
- Analyze existing aerator equipment replacement by first developing a scope and budget subject to review and approval of the Executive Committee.

Jeremiah Unger moved that the TAC accept the 2023 RDS Annual Report and recommended that the Board accept the report and implement the recommendations during 2024. Seconded by Alex Mestdagh. The motion carried.

The [RDS Operations Policy](#) was implemented in 2021 and last reviewed by the TAC on September 2, 2021 and by the Board on January 20, 2022. An [RDS Fact Sheet](#) can be found in the Board Binder.

b. Acceptance of RESPEC's Watershed Modeling Scenario Report

Alan Leak prepared a report on the [Watershed Modeling Scenarios](#) for the TAC, explaining that two additional watershed scenarios were completed using the Cherry Creek 2030 Future Development HSPF model.

Diana Rashash moved that the TAC accept RESPEC's Watershed Modeling Scenario Report dated January 22, 2024 and recommended that the Board accept the report. Seconded by Rick Goncalves. The motion carried.

c. Recommend Approval of Reservoir Modeling Scope and Budget for Hydros Consulting

Jane Clary presented Hydros' [Scope of Work for Linked Reservoir Model Runs in 2024](#) to the TAC and recommended approval of the scope, schedule, and budget.

The Modeling Subcommittee will provide input and review of the model runs at a future meeting.

The TAC asked if the data set used in the Reservoir model needed to be updated with a more recent data set (2017- present). Jane Clary noted that this topic had been discussed with Christine Hawley and that she did not believe it was necessary to do so at this time. Jane Clary will reach out to Hydros to confirm this understanding and report back to the TAC.

Rick Goncalves moved to recommend the Board approve the Reservoir Modeling Scope and Budget for Hydros Consulting as provided to the TAC. Seconded by Ashley Byerley. The motion carried.

5. Discussion Items

a. WY 2023 Water Quality Monitoring Report Feedback and Questions (Stewart, [link to Draft Report](#))

Erin Stewart provided an opportunity for the TAC to ask questions. The final report will be provided to the TAC.

b. Watershed Planning Update/Discussion

i. April 18, 2024 8:30-11:30 am.

Jane Clary provided an update to the TAC on the Watershed Planning progress.

The next Watershed Plan workshop is scheduled for April 18, 2024.

A draft Watershed Plan should be ready by the scheduled September 19, 2024 workshop with the final Watershed Plan completed by the end of 2024.

The TAC provided feedback on the format for the Watershed Plan. The Plan will be in a form that can be printed or viewed as a single PDF, but it will also include links to the most current information such as data on the Data Portal, the latest annual report, etc.

c. CIP Subcommittee Next Steps

Jane will draft the CIP Subcommittee charter and provide it to the subcommittee members for input and feedback.

6. Presentations

None

7. TAC Member Updates

Michelle Seubert informed the TAC that Cherry Creek State Park is working to become a Leave No Trace gold standard park.

8. Updates

a. Manager (Clary)

i. Reminder on Annual Report Content

Provide content to Erin Stewart as soon as possible.

ii. Cherry Creek Reach 1 Funding Update

Working on funding partners, including federal funding.

iii. Lake Loop Shoreline Stabilization Status Update

Will bring details to a future TAC meeting. Shoreline stabilization cost estimates have increased substantially on some projects due to USACE foot-by-foot cut and fill requirements. Staff and consultants are meeting with USACE staff to determine whether a more practical approach can be used. At this time, CCBWQA staff are considering forgoing the Lake Loop stabilization project due to the increased costs.

iv. Lone Tree Creek Master Plan Update

Comments requested by the subcommittee by the end of February (see link below)

Jane noted that cost estimates in the originally posted draft are being revised along with an expanded description of the approach to the Lone Tree Creek channel. Jane will send an email to the TAC and subcommittee when these updates are complete.

v. Regulation 72 Hearing: February 12, 2024

https://drive.google.com/drive/u/1/folders/1CH5cOj9ym7Qr_cXi6n4uylyUZtfKs6gl

Link provided to the TAC for reference only. Jane Clary is participating in the hearing on behalf of the Authority and will make a brief statement regarding CCBWQA's position to not oppose the proposed changes to the dewatering requirements.

vi. July TAC Meeting (Currently on July 4th; suggest canceling)

The TAC discussed and decided to cancel the July 4, 2024 TAC meeting.

b. Cherry Creek Stewardship Partners (Davenhill)

The Annual Hawk walk was a success. Maggie Lewis (Wright Water Engineers) and Jane Clary participated in the Hawk Walk and were able to discuss the Lone Tree Pond and channel conditions with the birding community. The participants noted that the pond is frequented by birds and valued by birders. This feedback has been integrated into the Lone Tree, Windmill and Cottonwood Master Plan that WWE is in the process of completing.

c. [TAC Subcommittees](#) (As Needed)

The TAC requested a brief description and timeframe be provided for each of the Subcommittees in the spreadsheet with current members.

- i. **Modeling Subcommittee**
- ii. **Watershed Plan Subcommittee**
- iii. **Cherry Creek Reach 1 Reservoir to Lakeview Drive Alternatives Analysis Subcommittee**
- iv. **Lone Tree, Windmill, and Cottonwood Creek Subcommittee (Clary)**

a. Draft Report for Overall Basin Report and Cherry Creek State Park Appendix:

https://wrightwater1-my.sharepoint.com/:f:/g/personal/mlewis_wrightwater_com/Eo6pCLbioQZKthk2zQjbMgABLPJhkUqiHKpQ5WsPZ_dNWg?e=zC3unP

b. Comments Due Cherry Creek State Park Appendix: February 27, 2024

d. Contractors (As Needed)

i. [Water Quality Update](#) (Stewart)

Erin Stewart provided an update that the summary of the 2023 Wetland Harvesting project will be presented at the March or April meeting and the information will be included in the 2023 CCBWQA Annual Report on Activities.

ii. Pollution Abatement Projects - [CIP Status Report](#) (Loewen, enclosed)

iii. In-Park PRF and RDS Maintenance and Operations (Goncalves)

iv. Regulatory (DiToro, enclosed)

Jessica DiToro provided the TAC with a [memo](#) that summarizes WQCC hearing procedures and upcoming WQCC hearings that are relevant to CCBWQA interests.

v. [Land Use Referral Tracking](#) (Endyk)

Staff discussed the potential need for revisions to the current Land Use Referral process. The two main areas where CCBWQA may want to provide a more detailed review include projects in the stream preservation area and CDOT projects. CCBWQA is already reviewing CDOT projects, based on a request from CDOT. The TAC requested CCBWQA consultants and technical manager review what revision, if any, are needed and provide suggested revisions to the process at a future TAC meeting for further discussion.

9. Adjournment

Lisa Knerr adjourned the meeting at 10:47 am.

[Board Binder](#) and [2024 Timeline](#)



ACTION ITEM MEMORANDUM

To: CCBWQA Technical Advisory Committee (TAC)
From: Elysa Loewen, Pollution Abatement Project Manager
Date: March 7, 2024
Subject: Piney Creek Reaches 1&2 IGA Amendment

Request: *Move that the TAC recommends that the Board authorize the execution of the IGA Amendment for Stream Improvements at Piney Creek Reaches 1 & 2 pending satisfactory resolution of CCBWQA's comments, if any, with an expenditure not to exceed \$39,000 for 2024.*

Project/Issue: Piney Creek Reach 1 & 2

The Project is located on Piney Creek between the confluence of Cherry Creek and Parker Road in the City of Centennial and Arapahoe County (Project) see figure in the **Enclosure**. The downstream limit of this project is the confluence with Cherry Creek within the State Park. It is a partner project with the Southeast Metro Stormwater Authority (SEMSWA) which is the project lead. The proposed stream reclamation benefits the water quality in Piney Creek and the Cherry Creek Reservoir by reducing bed and bank erosion which immobilizes phosphorus in the adjacent soils. It is estimated that this 0.55-mile-long project will immobilize 49 pounds of phosphorus annually. CCBWQA had a workshop on March 16, 2023, which included the Project and reinforced its priority and importance to the whole system. The degradation of the channel has progressed since the Spring 2023 storm events which evident at another project site visit in February 2024 (see photos below).

The majority of the reach was studied in Muller Engineering's 2022 Assessment report which included Piney Creek from the confluence of Cherry Creek to the pedestrian crossing and was visited in the field during the March 2023 CCBWQA field trip.



Figure 1: Looking Upstream at Approximate Upstream Limits of CC State Park (2024)



Figure 2: Looking Downstream at Pedestrian Crossing (2024)

Funding:

The IGA Amendment for Piney Creek Reaches 1 & 2 would include additional funding of \$156,000 (\$39,000 CCBWQA which is in the 2024 approved budget and \$117,000 SEMSWA). The IGA Amendment would include total funding of \$140,000. The table below provides a breakdown of funding by sponsors and shows CCBWQA’s participation is 25% which is consistent with the limit historically used on partner projects. Additional IGA Amendments are anticipated to bring in future funding from the sponsors’ capital improvement programs which currently include funding through 2028, when construction is anticipated.

Project: Piney Creek Reach 1 & 2

Funding Source	2022	2023	2024		
	Initial Funding	Additional Annual Funding	Additional Annual Funding	Cumulative Project Funding	Project Sponsor %
SEMSWA	\$114,000	\$189,000	\$117,000	\$420,000	75.00%
CCBWQA	\$38,000	\$63,000	\$39,000	\$140,000	25.00%
Total	\$152,000	\$252,000	\$156,000	\$560,000	100.00%

Budget: The Project was included in CCBWQA’s 2024 Budget of \$39,000 (Piney Creek Reach 1&2)

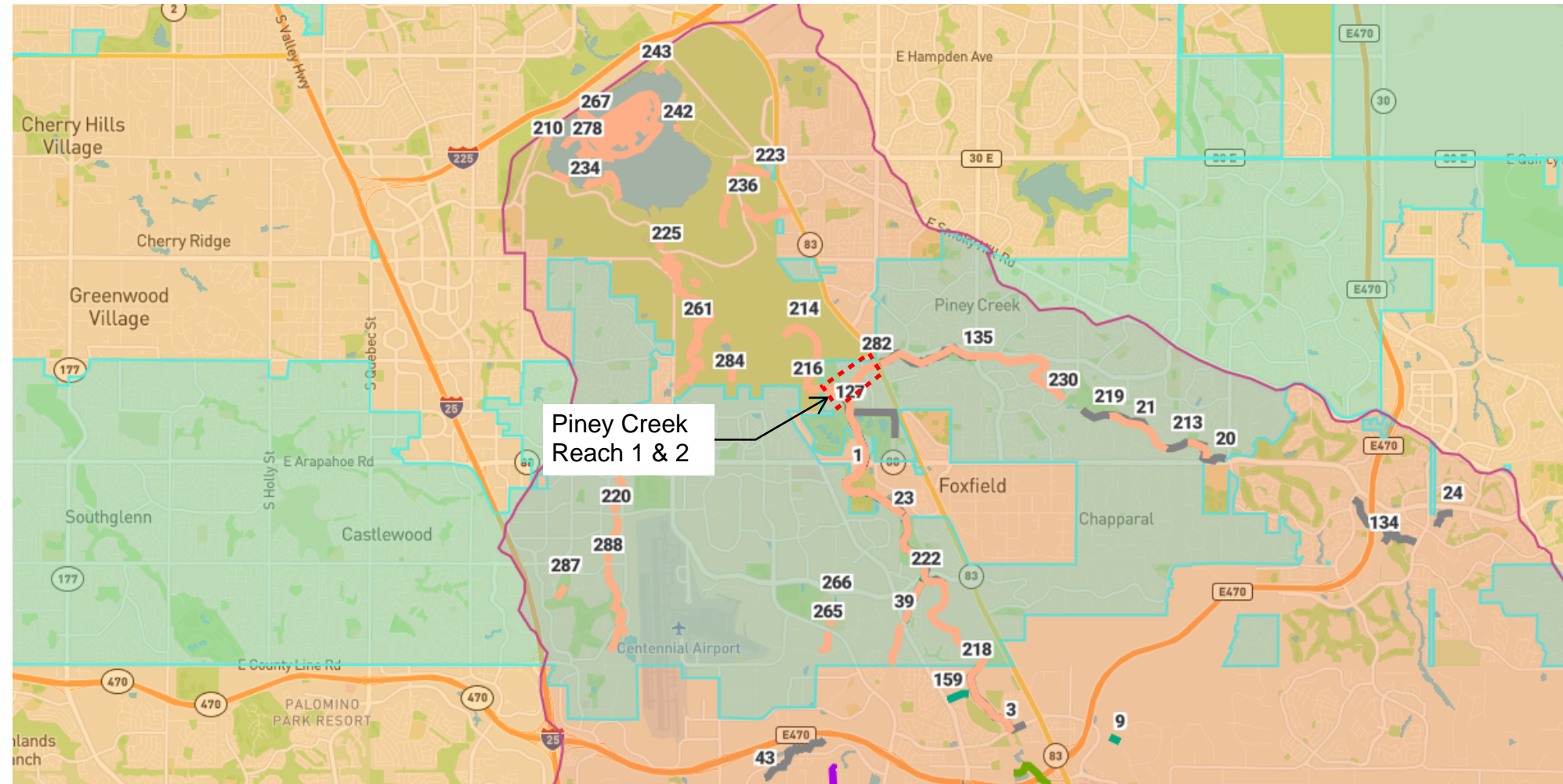
Motion: *Move that the TAC recommends that the Board authorize the execution of the IGA Amendment for Stream Improvements at Piney Creek Reaches 1 & 2 pending satisfactory resolution of CCBWQA’s comments, if any, with an expenditure not to exceed \$39,000 for 2024.*

Enclosures: **Project Location Exhibit**
Pages from Partners Site Visit Handout (Muller)



Cherry Creek Basin Water Quality Authority Map PROJECT VICINITY MAP

Created: February 23rd 2024, 11:09am



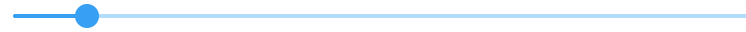
MHFD Boundary

Fill Opacity



Cherry Creek Basin Boundary

Fill Opacity



South East Metro SWA Boundary

Fill Opacity



CCBWQA

Active

Approved

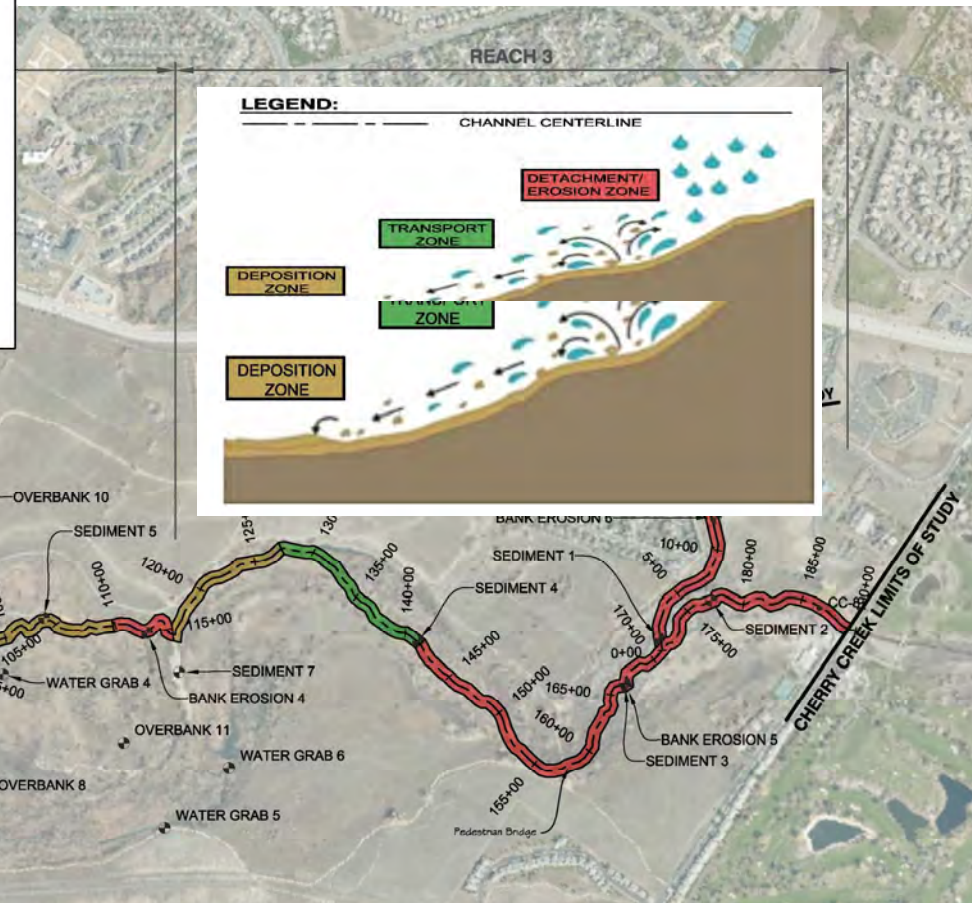
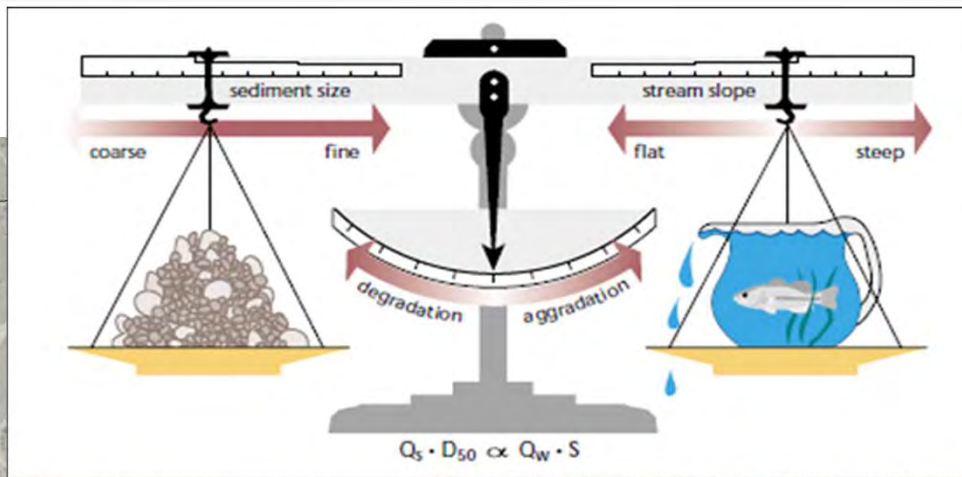
Cancelled

Closed

Inactive

Requested

3 mi





**SECOND AMENDMENT TO
INTERGOVERNMENTAL AGREEMENT
FOR FUNDING THE DESIGN OF PINEY CREEK STREAM RECLAMATION
IMPROVEMENTS – REACHES 1 AND 2**

THIS SECOND AMENDMENT TO INTERGOVERNMENTAL AGREEMENT FOR FUNDING THE DESIGN OF PINEY CREEK STREAM RECLAMATION IMPROVEMENTS – REACHES 1 AND 2 (“Second Amendment”) is made and entered into this day _____ to be effective as of **March 1, 2024** (“Effective Date”) by and between the **SOUTHEAST METRO STORMWATER AUTHORITY**, a quasi-municipal corporation and political subdivision of the State of Colorado (“SEMSWA”) and the **CHERRY CREEK BASIN WATER QUALITY AUTHORITY**, a quasi-municipal corporation and political subdivision of the State of Colorado (“Authority”), individually (“Party”) and collectively (“Parties”).

RECITALS

WHEREAS, SEMSWA was formed to plan, design, construct, acquire, operate, and maintain various drainage and flood control facilities and manage the storm water quality within its boundaries which are located partly within Arapahoe County (“County”) and partly within the City of Centennial (“City”); and

WHEREAS, on or about September 21, 2022, the Parties entered into that certain Intergovernmental Agreement for Funding the Design of Piney Creek Stream Improvements – Reaches 1 and 2 (“Original Agreement”), ~~as which was amended; by the Parties by a First Amendment dated to be effective May 18, 2023 (“First Amendment”);~~ and

~~**WHEREAS**, the Original Agreement as amended by the First Amendment is hereinafter referred to as the “Agreement”; and~~

WHEREAS, pursuant to the Agreement the Parties agreed to cooperate in funding the design and ultimate construction of stream reclamation improvements planned within Piney Creek Reaches 1 and 2 (“Project”); and

WHEREAS, the Parties desire to amend the Agreement a second time to increase funding for the Project by \$156,000; and

WHEREAS, the additional \$156,000 will be funded \$39,000 by the Authority and \$117,000 by SEMSWA; and

WHEREAS, in accordance with the Agreement, the Authority’s contribution to the total cost of the Project will not exceed twenty-five percent (25%).

NOW, THEREFORE, in consideration of the covenants and mutual agreements herein contained, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. **Additional Funding for Design.** The Parties hereby agree to increase their funding for the design of the Project by the additional funding amounts set forth below:

Formatted: Indent: Left: 0.07", Space After: 12 pt, Widow/Orphan control, Keep with next

PARTY	PREVIOUS FUNDING	ADDITIONAL FUNDING	% OF FUNDING	CUMULATIVE PROJECT FUNDING
SEMSWA	\$303,000	\$117,000	75%	\$420,000
Authority	\$101,000	\$39,000	25%	\$140,000
TOTAL:	\$404,000	\$156,000	100%	\$560,000

2. **Payment of Authority's Share.** No later than sixty (60) days after this Second Amendment is fully executed by the Parties and receipt of an invoice from SEMSWA in the amount of \$39,000, the Authority will issue payment to SEMSWA for the Authority's additional contribution toward the Project as set forth above. Notwithstanding any other provision contained in this Second Amendment to the contrary, the Authority's cumulative share of the design cost shall under no circumstances exceed \$140,000 unless specifically agreed to in advance in writing by the Authority.

3. **Financial Obligations Subject to Annual Appropriation.** To the extent ~~any~~the financial ~~obligations~~obligation of ~~either~~a Party to this Second Amendment will be performed in a future calendar year, such financial ~~obligations are~~obligation is expressly contingent upon the annual budgeting and appropriation by ~~each~~the Party of the funds necessary to pay said ~~obligations~~obligation, as more particularly set forth in the Agreement.

4. **Effective Date.** This Second Amendment shall become effective as of the Effective Date set forth above when fully executed by the Parties.

5. **Reaffirmation of Agreement.** Upon execution of this Second Amendment by both Parties, the Agreement shall remain in full force and effect in accordance with its terms and provisions as amended by this Second Amendment. In the event of a conflict between the terms and provisions of this Second Amendment and the Agreement, this Second Amendment shall control.

6. **Binding Effect.** This Second Amendment shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns.

7. **Severability.** In the event anyone or more of the provisions of this Second Amendment shall, for any reason, be held to be invalid or unenforceable, the remaining provisions of this Second Amendment shall be unimpaired and shall remain in full force and effect and binding upon the Parties hereto.

8. **Governing Law.** This Second Amendment shall be governed by and construed in accordance with the laws of the State of Colorado.

IN WITNESS WHEREOF the Parties have executed this Second Amendment to be effective as the date set forth above.

Formatted: Keep with next

CHERRY CREEK BASIN WATER QUALITY AUTHORITY, a quasi-municipal corporation and political subdivision of the State of Colorado

By: _____
William P. Ruzzo, Authorized Executive Committee Member

Approved as to Form:

Timothy J. Flynn, General Counsel
Cherry Creek Basin Water Quality Authority

Checked by:

Val Endyk

SOUTHEAST METRO STORMWATER AUTHORITY, a quasi-municipal corporation and political subdivision of the State of Colorado

By: _____
Dan Olsen, Executive Director

Attest:

Nicole Harwell, SEMSWA CIP Project Manager

BOARD MEETING 2-15-24

Item: 5.(b): CIP SELECTION AND EVALUATION PROCESS

- Purpose of discussion is to outline the plan to reinstate and improve the process for identifying and evaluating potential CIP projects for inclusion in the annual budget.
- Steps:
 1. Local Government submits request for project funding
 2. TAC evaluates eligibility of project for PRF designation
 3. With TAC direction, Local Government/Authority staff estimates:
 - water quality benefits,
 - project cost
 - recommended priority ranking
 4. TAC recommends (or denies) project eligibility and recommends Board include the project in the 5 or 10-year plan
 5. Board considers annual CIP budget recommendations from PAPM.
- Some questions to be addressed:
 - Should Local Government request be formal (written) and come from a Board member?
 - Should potential projects that have been identified in a multi-agency drainage master plan be automatically eligible?
 - What role should the watershed/reservoir model play in quantifying benefits and prioritizing projects?
 - Given the complexity and uncertainty of determining WQ benefits, what constitutes adequate analysis of the benefits?
- Board Questions/Comments

Draft Charter for CCBWQA Capital Improvement Projects Subcommittee
(Draft 3-1-24)

Purpose: Provide review of capital improvement projects (CIP) proposed for inclusion on CCBWQA's annual and long-term CIP Plan and provide input on procedures for project inclusion on the CIP.

Scope: The scope of the committee's work will include review of procedural, technical and economic components of CCBWQA's CIP. Specific tasks include:

1. Review "Procedures for Requesting Capital Funding from CCBWQA" (Attachment 1) and recommend revisions, if any.
2. Review existing annual and 10-year CIP program for consistency with CCBWQA's water quality protection objectives, prioritization/project phasing, economic reasonableness, and funding partners. This could include removing some projects from the CIP, reprioritizing phasing of projects, adjusting budgets due to inflation, considering timing of partner funding, and other considerations. Information to support this review will be provided by CCBWQA's Pollution Abatement Project Manager (PAPM) and Technical Manager.
3. Review procedure for quantifying phosphorus reduction benefits of proposed projects and make recommendations for improvements, if needed. This task will be conducted approximately every five years.
4. Review annual draft budget prior to submittal to the TAC and Board. This task will be conducted annually (typically in August).

Committee Duration: As a standing committee, the duration of this committee will be for perpetuity, but it will meet primarily one to two times per year in the late summer prior to development of the annual budget and on an as-needed basis for additional tasks.

2024 Members (DRAFT)

Name and Organization	Email
Jane Clary – CCBWQA Technical Manager, Wright Water Engineers	clary@wrightwater.com
Elysa Loewen – CCBWQA PAPM Loewen Engineering	eloewen@loeweneng.com
Jacob James - Lone Tree	jacob.james@cityoflonetree.com
Ashley Byerley - SEMSWA	abyerley@semswa.org
Rick Goncalves - RG Engineers	rickg@rgengineers.com
Lisa Knerr - Arapahoe County	lknerr@arapahogov.com
Ryan Adrian - Douglas County	radrian@douglas.co.us
Alex Mestdagh - Parker	amestdagh@parkeronline.org
Joseph Marencik - Castle Pines	joseph.marencik@castlepinesco.gov

Attachment 1.

Procedures for Requesting Capital Improvement Project Funds from the Cherry Creek Basin Water Quality Authority Draft 12-07-2012 (with minor updates 03-01-2024)

The procedures for requesting funding assistance from the Cherry Creek Basin Water Quality Authority (CCBWQA) for qualified capital projects are described herein as a guideline for local governments when preparing their capital budgets. The intent is to establish a protocol and process that allows the Authority to achieve its mission to protect and enhance water quality in the Cherry Creek watershed by allocating its funds in an efficient and effective manner. CCBWQA will review requests from local governments using the process and guidelines, taking into consideration the Authority's budget constraints and water quality goals and objectives.

The Authority may deviate from these procedures and guidelines at its discretion.

1. **Local Government Submits Written Request for Authority Financial Assistance.**
CCBWQA recommends that the local government contact CCBWQA's Pollution Abatement Project Manager (PAPM) to discuss the proposed project before submitting a written request. Whereas the written request will be dependent on the nature of the capital project, the letter would typically include but is not limited to:
 - a. Address the letter to CCBWQA's Technical Manager with a copy to the PAPM. Identify a contact for the local government and related to the request.
 - b. A description of the project including a general location map and more detailed project area map. Typically, this information can be obtained from local storm drainage master plans such as those prepared under the jurisdiction of the Mile High Flood District or the local government but can also be a project not identified in a master plan.
 - c. An estimation of project costs including preliminary and final engineering, construction oversight, construction, administration, right-of-way, and operation/maintenance costs. Project costs not related to water quality enhancements, such as improvements solely related to recreation and education must be itemized separately if they are included in the cost estimate.
 - d. An explanation of how the project fits into CCBWQA's goals and objectives as described in CCBWQA's watershed plan.¹
 - e. Discussion of the long-term maintenance agreements and/or responsibilities, including temporary/permanent construction and maintenance easement requirements and ownership.
 - f. Discussion of existing and proposed future projects that the local government has sponsored within the watershed or political boundary of the local government that provide water quality benefits including those co-sponsored by CCBWQA, but not including those required under stormwater discharge permits.

¹ Cherry Creek Basin Water Quality Authority October 18, 2012. *Cherry Creek Basin Water Quality Authority Watershed Plan 2012. (Under Revision 2024)*

- g. Other information deemed appropriate by the local government or specifically requested by the Authority.
2. **Preliminary Review by the Technical Advisory Committee (TAC).** CCBWQA's Technical Manager will schedule the funding request on the agenda for initial review at the next available TAC meeting. The local government representative will be requested to make a brief presentation and to address TAC questions. The TAC will consider one or more of the following actions:
- a. Make a motion to accept the application for further processing.
 - b. Identify the project as a potential pollution reduction facility (PRF) and include the project on CCBWQA's Master List of potential PRFs.
 - c. Make a motion to decline the request for funding assistance, providing reasons for the denial. The local government may appeal the decision to the Board.
 - d. Have the Authority's PAMP review the project:
 - i. For consistency with CCBWQA's Watershed Plan.
 - ii. To provide an opinion on the water quality benefits of the project.
 - iii. Recommend factors for the TAC and Board to consider to decide a level of funding participation such as:
 - 1. Water quality benefits and costs as compared to past projects.
 - 2. Consistency with past CIP funding levels.
 - iv. Recommend factors for the TAC and Board to consider regarding project prioritization, taking into account the appropriate factors identified in the CCBWQA's guidance document.²

When the analysis is complete, the Technical Manager will schedule the request for the next available TAC meeting.
 - e. Request additional information from the local government.
 - f. Postpone the decision on the application and schedule the request for a subsequent TAC meeting.
3. **Second Review by the Technical Advisory Committee (if needed).** The TAC will review the additional information by the applicant and the water quality analysis by the PAMP and consider one or more of the following actions:
- a. Make a motion to accept the application for further processing. The basis for the funding level and prioritization of the project shall consider:
 - i. Recommendations of the PAMP.
 - ii. Funding levels of past projects.
 - iii. Available Authority CIP funds.
 - b. Make a motion to decline the request for funding assistance, providing reasons for the denial. The local government may appeal the decision to the Board.
 - c. Request the Technical Manager to prepare an Action Item Memo with the TAC recommendation for Board consideration at the next available Board meeting.

² Cherry Creek Basin Water Quality Authority Technical Advisory Committee, June 16, 2011. *Stream Reclamation, Water Quality Benefit Evaluation – Interim Status Report*. See Chapter 4. *Considerations for Prioritizing Projects*.

- 4. Board Review.** CCBWQA's Technical Manager will schedule the funding request on the agenda for review at the next available Board meeting. The local government representative will be requested to make a brief presentation and to address Board questions. The Board may consider one or more of the following actions:
- a. A motion to approve the project request for funding that includes a funding level and prioritization.
 - b. A motion to deny the application for funding assistance by the Authority.
 - c. A motion to refer the application for funding assistance back to the TAC for further consideration.

Subject to available funds and if approved for funding by the Board, CCBWQA will include the project and funding level on its next capital improvement program budget or may elect to include the project in its current year budget.



MEMORANDUM

Date:	March 7, 2024
To:	Cherry Creek Basin Water Quality Authority Technical Advisory Committee Jane Clary, CCBWQA Technical Manager
From:	Erin Stewart, LRE Water
Subject:	Real-Time Water Quality Monitoring Options for Cherry Creek Reservoir

Information

At the end of 2023, the dissolved oxygen (DO) and temperature monitoring equipment installed in Cherry Creek Reservoir disappeared from the marina after removal from the Reservoir. The CCBWQA has filed an insurance claim to replace this equipment. However, this may be a good opportunity for the CCBWQA to evaluate alternative options for upgrading this equipment with improved functionality.

The equipment installed previously included nine (9) thermistors (temperature loggers) installed at ~ 1-meter intervals and two oxygen loggers just below the surface (0.5 m) and at the bottom (7 m).

Replacement DO logger Cost - \$4,369.60 (w/discount)

- DO logger only with anti-fouling wiper
- Manual download required
- Multi-parameter water quality sonde with anti-fouling wiper
- Data formatting is required for upload to the portal
- Installed on CCR Sailing Club or CPW buoy which limits seasonal collection (late April- late October)

Upgraded Equipment \$12,550.00 (plus ~\$20 month)

- Real - time data availability
- Cellular telemetry
- Multi-parameter water quality sonde with anti-fouling wiper
- Independent buoy set up
- Functionality to add additional probes (chlorophyll-a - \$1,995)
- No manual data downloads required (no risk of data loss, reduced labor)
- Extended season (late March- November/December)

Thermistor Replacement Cost - In addition to the DO loggers, the cost to replace the thermistor chain is \$1,700. Since we had some backup loggers we only need to purchase four (4) additional at \$175 each + deployment materials (chain, anchor, connectors, etc).

Benefits of Upgraded Equipment

- Extended deployment - additional data on shoulder months)
- Real-time data transmission - no risk of data loss, reduced labor associated with manual downloads
- A helpful tool for potential reservoir management
- Active tracking of bloom conditions and algal responses to changes in water quality vs 1-2 times per month
- Inform on stratification/ hypoxic (low oxygen) conditions for potential beneficial timing the USACE release

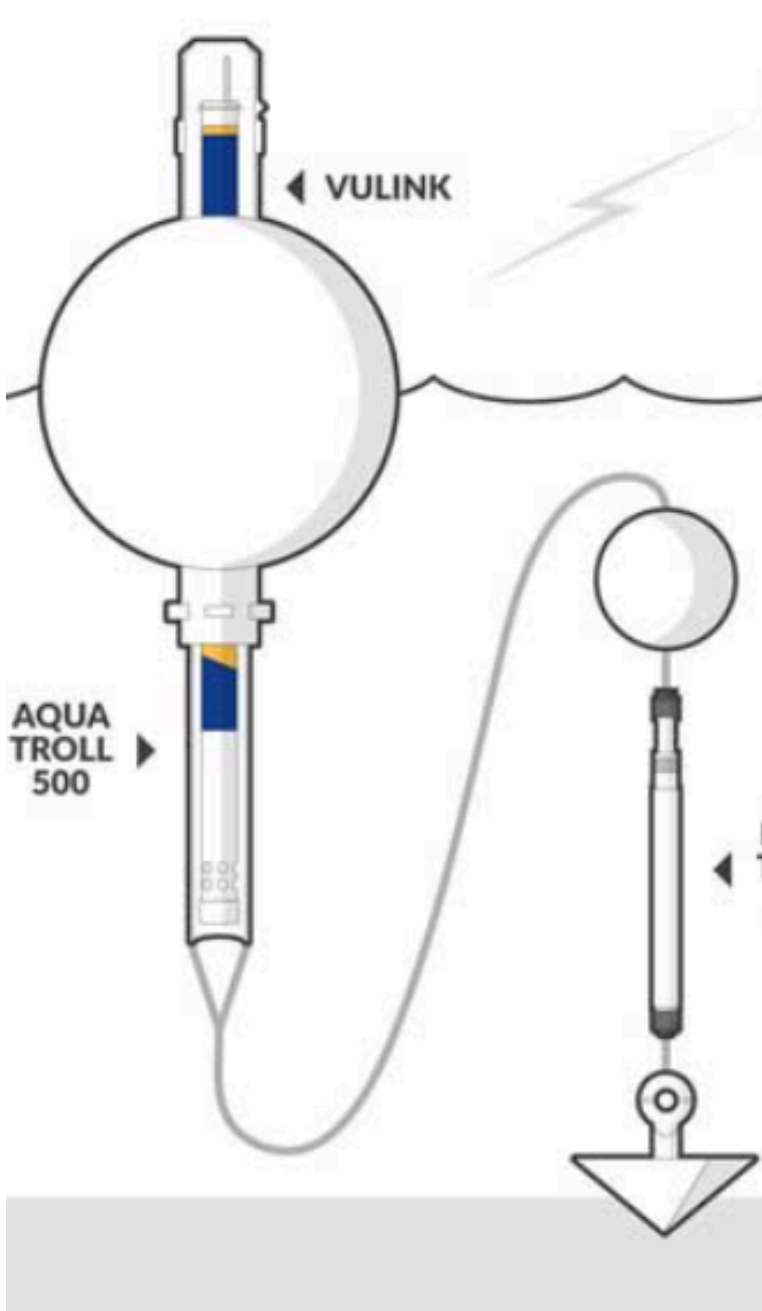


Figure 1. Representation of buoy configuration and equipment of proposed upgraded equipment.

Memorandum

To: CCBWQA Technical Advisory Committee
From: Jessica DiToro, PE, LRE Water
Reviewed by: Jane Clary, Wright Water Engineers
Date: March 7, 2024
Subject: WQCD 10-Year Water Quality Roadmap February Meeting Update

Background: The Water Quality Control Division (WQCD) established the [10-Year Water Quality Roadmap](#) in 2017 to outline strategies for developing nutrient criteria and other water quality priorities over a ten year period. [Clean Water Policy 8 \(CW-8\)](#) was also developed to help guide these efforts. The WQCD hosts [quarterly stakeholder Roadmap meetings](#).

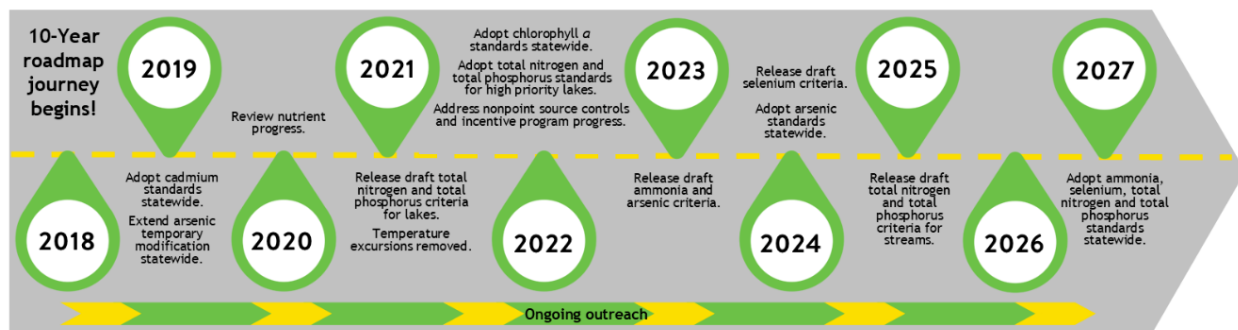


Figure 1. WQCD 10-Year Water Quality Roadmap - Please note this Roadmap graphic does not reflect recent changes made to the roadmap (i.e., delaying the implementation of lake nutrients standards statewide to 2027)

Issue Update: Jessica DiToro participated in the February 22, 2024 Roadmap meeting on behalf of CCBWQA. Several topics were discussed that are directly relevant to CCBWQA interests and activities:

- Total Maximum Daily Load (TMDL) [Prioritization](#):** The WQCD is working to identify candidate waters for TMDL development between 2029 and 2032. Up to four lakes with nutrient-related nonattainment will be identified as candidate waters. The WQCD will identify these potential waterbodies by June 2024. Stakeholders will have two years to engage with the WQCD regarding these identified waterbodies before final candidate waters are committed in or after September 2026. It is unclear if the WQCD is considering Cherry Creek Reservoir (303(d) listed for Chlorophyll *a*) to be one of these candidate lakes.
- [Rescheduling of Regulation 38 Rulemaking Hearing \(RMH\)](#):** At the March 11, 2024 Water Quality Control Commission (WQCC) meeting, the WQCD will recommend that the Regulation 38 RMH be rescheduled from June 2025 to June 2026. CCBWQA has been working with Hydros Consulting to develop site-specific nutrients standards for Cherry Creek Reservoir to propose at the 2025 Regulation 38 RMH. If the WQCC approves the

rescheduling of the RMH, this will change the timing of CCBWQA's site-specific standards proposal.

- **Feasibility and Implementation Subgroup:** An outcome of the [April 2024 Lake Nutrients Criteria RMH](#) was the formation of the Roadmap's [Feasibility and Implementation Subgroup](#). The subgroup kicked off during the February 22, 2024 Roadmap meeting. One objective of this subgroup will be to assess the current site-specific standards process.

Recommended Next Steps:

- **TMDL Prioritization:** Review the WQCD's recommended candidate lakes list when made public in June 2024. Report back findings to CCBWQA TAC and Board and discuss next steps in summer 2024.
- **Rescheduling of Regulation 38 RMH:** Consider how rescheduling this RMH from 2025 to 2026 changes the timing of CCBWQA's site-specific standards proposal.
- **Feasibility and Implementation Subgroup:** CCBWQA Staff should participate in the Feasibility and Implementation Subgroup meetings for site-specific standard process discussions and proposed changes to the process to see how this could impact the CCBWQA's future site-specific standards proposal.

Memorandum

Project: Cherry Creek Reach 1 Alternatives Analysis

To: Elysa Loewen, CCBWQA and Jane Clary, CCBWQA

From: John Yager, Muller Engineering Company

Date: March 1, 2024

Subject: Alternatives Analysis Progress Update

The purpose of this memorandum is to provide a brief progress update on the Cherry Creek Reach 1 Alternatives Analysis. Muller Engineering Company recently met with representatives from the Cherry Creek Basin Water Quality Authority (CCBWQA) including Elysa Loewen, Jane Clary, and Bill Ruzzo and with Michelle Suebert, the Colorado Parks and Wildlife (CPW) Cherry Creek Park Manager, to present three preliminary alternatives for the channel improvements through Reach 1 and for the Lakeview Drive crossing improvements. The intent of this meeting was to receive initial feedback on the alternatives before moving forward to refine the alternatives and prepare a cost-benefit analysis.

Below is a list of tasks completed to date:

1. Preliminary 2D hydraulic modeling and relative elevation modeling to assist with the identification of existing overbank flow paths through Reach 1.
2. A site visit was performed by the design team to walk the existing overbank flow paths, investigate existing channel and overbank conditions, identify the potential to shift the main channel east to the valley low-point, and to assess health of the vegetation within the reach.
3. Three preliminary alternatives have been developed for Reach 1 channel improvements including stabilization of the existing channel in place, relocating the main channel east to the valley low-point, and increasing flow spread to secondary and tertiary channels to promote a higher level of infiltration and water quality treatment throughout the valley.
4. Three preliminary alternatives have been developed for the Lakeview Drive Crossing including installation of a larger box culvert at the east side of the valley for the main channel, adding a second larger box culvert for the secondary channel at the west side of the valley, and upgrading the remaining culverts from corrugated metal pipes to

reinforced concrete pipes to increase the lifespan of these structures under Lakeview Drive.

The three exhibits prepared for the meeting with CCBWQA can be downloaded using the links below or accessed via CCBWQA's Google Drive March 7, 2024 TAC Folder.

[FIG1 - Cherry Creek Reach 1 Plan.pdf](#) -

[FIG2 - Cherry Creek Reach 1 Valley Sections.pdf](#)

[FIG3 - Cherry Creek Reach 1 Lakeview Drive P&P.pdf](#)

Note: In the Figure 1: Cherry Creek Reach 1 Plan PDF, you are able to toggle on/off layers for various alternatives, 2D hydraulic model water depth results, etc. The layers with different alternatives are called “-ALT #”, the layers with 2D hydraulic model results are called “SMS Results...”.

Below are descriptions of the three exhibits that were discussed at our meeting with the CCBWQA:

1. The first exhibit is a plan view of Reach 1 showing the re-located main channel east to the valley low-point, secondary channel on the west side of the valley, and the tertiary overflow paths.
2. The second is of valley cross sections highlighting the valley shape including a ridge near the middle of the valley and prominent east and west low points. This exhibit also shows how the existing main channel is located on the valley ridge and the proposed channel shift to the east low point in the valley.
3. The third exhibit is a plan and profile of Lakeview Drive showing how larger box culverts could be placed under the road to increase capacity. Utility conflicts are anticipated and would require the lowering of the water and sanitary force main in the vicinity of the new culverts or locally raising Lakeview Drive if the utilities cannot be relocated.

The next steps for Muller Engineering will include refining the preliminary alternatives based on feedback received during our meeting with the CCBWQA and preparing formal exhibits for each alternative along with a cost-benefit analysis. We plan to present the draft alternatives to the Technical Advisory Committee (TAC) at the April 4th meeting.



Cherry Creek Basin Water Quality Authority

cherrycreekbasin.org
303.968.9098
manager@ccbwwqa.org

December 16, 2022

Abe Laydon
Douglas County

Bahman Hatami
Governor's Appointee

Bill Ruzzo
Governor's Appointee

Caryn Johnson
Town of Castle Rock

Christopher Lewis - Vice Chair
Governor's Appointee

John McCarty - Secretary
Governor's Appointee

John Woodling
Governor's Appointee

Joshua Rivero - Chair
Town of Parker

Luis Tovar
Special District Representative

Margaret Medellin
Governor's Appointee

Mike Anderson
City of Lone Tree

Nancy Sharpe
Arapahoe County

Roger Hudson
City of Castle Pines

Stephanie Piko
City of Centennial

Steve Sundberg
City of Aurora

Tom Downing
Governor's Appointee

Tom Stahl
City of Greenwood Village

To: Local Land Development Review Agency
From: Cherry Creek Basin Water Quality Authority
Jane Clary, Technical Manager

Re: Change to Cherry Creek Basin Water Quality Authority Land Use Reviews

The Cherry Creek Basin Water Quality Authority has changed its land use review process, effective January 1, 2023.

Historically, the Authority has conducted technical reviews of proposed development plans for compliance with construction-phase and post-construction stormwater quality requirements described in Regulation 72, the Cherry Creek Basin Control Regulation. Since that time, local governments have progressively become more experienced in ways to minimize the discharge of pollutants during and after development activities, as demonstrated by the minimal number of referrals where the Authority did not recommend approval of projects to the local government. Additionally, recent municipal separate storm sewer system (MS4) permits are more explicit regarding requirements for compliance with Regulation 72. For these reasons, the Authority believes that the local government's review is sufficient to ensure compliance with Regulation 72 requirements. In cases where the local government would like additional review or consultation with the Authority, the Authority's Technical Manager will be available to discuss questions or arrange an independent review if needed.

Effective January 1, 2023, local governments will continue to notify the Authority of proposed development plans by email addressed to LandUseReferral@ccbwwqa.org. The Authority will respond by email or other established electronic system with the following statement:

The Cherry Creek Basin Water Quality Authority (Authority) acknowledges notification from [*local agency*] that the proposed development plans for [*development name or project ID*] have been or will be reviewed by the [*local agency*] for compliance with the applicable Regulation 72 construction and post-construction requirements. Based on the Authority's current policy, the Authority will no longer routinely conduct a technical review and instead the Authority will defer to the [*local agency's*] review and ultimate determination that the proposed development plans comply with Regulation 72.

If a technical review of the proposed development plan is needed, please contact LandUseReferral@ccbwwqa.org. The review may include consultation with the Authority's Technical Manager to address specific questions or to conduct a more detailed Land Use Review, if warranted.

We welcome input from local agencies if refinements to this process are needed as experience is gained with this revised referral process. **Additionally, we request a reply email confirming your receipt of this email and understanding of the new land use review process for the Authority.**

DRAFT Survey for CCBWQA TAC Review (2-29-24)

Information Gathering Question List for Roadway Projects

1. What do you use as your primary source of design guidance for roadway projects? Check all that apply:
 - MHFD Volume 3
 - CDOT Chapter 16
 - Local Criteria Manual
 - All of the Above
 - Other (Describe in #5)

2. Which SCMs have you found to be **most effective and maintainable** for roadways? Check all that apply:
 - Extended Detention Basin (EDB)
 - Bioretention
 - Sand Filter
 - Grass Swale/Buffer/RPA
 - Hydrodynamic Separator MTD
 - High Rate Biofiltration MTD
 - High Rate Media Filtration MTD
 - Treatment Train (Swale + EDB)
 - Treatment Train (HDS + EDB)
 - Treatment Train (Swale + Sand Filter)
 - Treatment Train (HDS + Sand Filter)
 - Constructed Wetland Basin
 - Constructed Wetland Channel
 - Wet Pond (Retention Pond)
 - Permeable Friction Course (or other Permeable Pavement)
 - Other (Describe in Comments in #5)

3. Which SCMs have you found to be **ineffective or difficult to maintain** for roadways? (check box of SCMs)

<ul style="list-style-type: none"> <input type="checkbox"/> Extended Detention Basin (EDB) <input type="checkbox"/> Bioretention <input type="checkbox"/> Sand Filter <input type="checkbox"/> Grass Swale/Buffer/RPA <input type="checkbox"/> Hydrodynamic Separator MTD <input type="checkbox"/> High Rate Biofiltration MTD <input type="checkbox"/> High Rate Media Filtration MTD <input type="checkbox"/> Treatment Train (Swale + EDB) <input type="checkbox"/> Treatment Train (HDS + EDB) 	<ul style="list-style-type: none"> <input type="checkbox"/> Treatment Train (Swale + Sand Filter) <input type="checkbox"/> Treatment Train (HDS + Sand Filter) <input type="checkbox"/> Constructed Wetland Basin <input type="checkbox"/> Constructed Wetland Channel <input type="checkbox"/> Wet Pond (Retention Pond) <input type="checkbox"/> Permeable Friction Course (or other Permeable Pavement) <input type="checkbox"/> Other (Describe in Comments in #5)
---	---

4. What are your most significant long-term maintenance challenges for roadway SCMs? (Describe)

5. Are there specific topics related to design, construction or maintenance of roadway SCMs for which you are seeking supplemental guidance?

6. Please review the reference list below. Are there other references that should be included in development of stormwater control measure guidance for CDOT and other roadway projects in the Cherry Creek Basin? (*list to be provided*)

7. Provide any other comments, observations or information needs related to stormwater quality control measures in a roadway context.

8. Do you see opportunities or have ideas for water quality partnering on roadway projects in the Cherry Creek Reservoir Basin?

9. Please provide your contact information (Name, Organization, Title, Email, Phone, Role).

CHERRY CREEK BASIN WATER QUALITY AUTHORITY
2024 Capital Project Status Report
March 1, 2024

RESERVOIR PROJECTS

1. **East Shade Shelters Phase III and Tower Loop Phase II Shoreline Stabilization (CCB-17.5.1 and CCB-17.7)**
 - a. Description: These projects were identified in 2014 through the annual inspection. The Tower Loop Phase II connects to the Phase I project and extends shoreline protection 570 feet to the southeast towards Dixon Grove. The East Shade Shelters Phase III starts on the north end of the Shade Structure and goes 400-feet to the south.
 - b. Status: Consultant selection is scheduled for the 1st quarter. A consultant selection committee will be set in February (1/29/21). At the February TAC meeting Jason Trujillo, Jon Erickson, Lanae Raymond, Bill Ruzzo were interested in serving on the consultant selection committee (2/11/21). This selection committee was discussed at the 3/18/21 Board Meeting, and no further members were added. The Request for Proposals (RFP) has been posted on BidNet and Proposals are due 04/21/21 (3/25/21). The pre-proposal meeting was held on 4/7/21. 5 proposals were received on 4/28/21; the selection committee is reviewing them. Interviews were held and a selection is being brought to the May Board meeting (5/14/21). Board authorized negotiations with RESPEC (5/27/21). Agreement has been executed with RESPEC (10/15/21). Field Survey of project areas and topographic mapping is underway (12/30/21). A design kickoff meeting was held on 4/22/22. A design sprint workshop was held on 7/12/22 which included a site visit and evaluation of alternatives. RESPEC is developing a recommended alternative (9/8/22). RESPEC provided updated project costs for budgeting (10/13/22). The 30% submittal was received on 11/16/22 and is under review. CCBWQA provided comments on 30% review on 1/17/23; a value engineering effort is recommended as the project costs exceed the budget. The value engineering meeting was held on 2/24/23. RESPEC's request for additional services was approved by TAC and Board in May (5/25/23). The reservoir water level has come down since the May and June storms and additional erosion was observed on 7/14/23; a site visit was made with RESPEC on 8/1/23 and the erosion areas at East Shade Shelters were measured. It has been estimated that roughly 14 cubic yards of soil was eroded from the 2023 storms (9/15/23). A progress meeting was held on 9/15/23, RESPEC will refine the breakout of components between recreational (CPW responsibility), water quality (CCBWQA responsibility), and shared (both CPW and CCBWQA responsibilities) costs and work on 408 review submittal to US Army Corps of Engineers. RESPEC was provided by the US Army Corps of Engineers' guidance on cut and fill and asked to prioritize the 408 application and review; they are coordinating with Gene Seagle in preparation for this submittal. RESPEC has provided a draft plan of action for the 408 permit submittal to be discussed with Gene (1/15). A meeting was held with Gene on (01/25/2024) to discuss the 408 requirements, subsequently RESPEC followed up with a submittal package PDF of the summary of impact for the project via email to Gene and Joe with USACE on (02/02/2024)

Tower Loop Phase II –

1. In 1st and 2nd quarters, PAMP receives design submittal that includes revisions from value engineering effort. Final design and construction are currently scheduled for 2032 and 2033 (see row 12 of 10-year CIP).

STREAM RECLAMATION PROJECTS

1. **Cherry Creek Stream Reclamation at Arapahoe Rd. - Valley Country Club to Soccer Fields, Reaches 3 to 4 (CCB-5.14C)**
 - a. Description: This project continues the work on Cherry Creek by CCBWQA, MHFD, and local partners. It ties into the previous stream reclamation projects of Cherry Creek Eco Park to Soccer Fields (CCB-5.14A) and Cherry Creek at Valley Country Club (CCB-5.14B). The 5,167 Linear Feet of stream reclamation reduces bed and bank erosion immobilizing approximately 88 pounds of phosphorus annually. The project is anticipated to be funded over several years and likely be broken into phases.
 - b. Status: In 2021, an IGA was executed between CCBWQA, MHFD, City of Aurora, and SEMSWA to begin this work. IGA Amendment that brings in 2022 funding is under review (5/13/22). Board authorized IGA Amendment for 2022 funding on 7/21/22 (8/12/22). IGA Amendment has been revised to show Aurora's lower participation; CCBWQA's participation was lowered accordingly to meet 25% partner project level; revised IGA Amendment received TAC recommendation and is being taken to Board for their consideration in October (10/13/22). Board authorized the IGA Amendment for 2022 funding at their 10/22/22 meeting. It appears that CCBWQA's 2023 participation will be reduced as a result of less partner funding available for this project (2/24/23). The IGA Amendment that brings in 2023 funding was recommended by the TAC and authorized by the Board at their June meetings (6/29/23). MHFD is starting consultant selection process (10/13/23). Jacobs, Olsson, and Muller were shortlisted for interviews which are scheduled for mid-December (11/10/23). Muller was selected as the consultant (12/28/23). *A scoping meeting for the project was held on (01/30/2024), a design scope is anticipated in the next month.*

2. **Cherry Creek - Reservoir to Lake View Drive Alternatives Analysis and Development of Preferred Alternative (CCB-5.16A)**
 - a. Description: This project is in follow up to CCBWQA's study of Cherry and Piney Creeks in Cherry Creek State Park (CCSP). Muller completed two reports on Cherry Creek from Reservoir to State Park Boundary, Stream and Water Quality Assessment and Baseline Channel Monitoring Report, in 2022. These reports highlight the need for this project.
 - b. Status: A workshop is scheduled for the 3/16/23, to seek CCBWQA Board and TAC input on this project and Cherry and Piney Creeks in CCSP (3/10/23). *The follow up from workshop is underway – project overview and funding flyer has been created*, Muller is scoping the next step of design for Reach 1 and providing a fee, and multi-pronged approach is in development for workshop priority reaches that prioritizes Reach 1 and reduces risk from upstream reaches; these items will be brought to TAC and Board for discussion, direction, and/or action at upcoming meetings (3/30/23). A site visit for partner outreach and funding was held on 5/25/23 at 1-4 pm (6/8/23). A coordination meeting was held with Aurora on 6/23/23 and they showed interest in partnering on the project to protect their water lines. The Mile High Flood District has provided their budget/CIP schedule and Arapahoe County Open Space has been contacted to investigate potential partnering opportunities (7/13/23). The TAC created a subcommittee for this project on 8/3/23; which will attend progress meetings, provide timely feedback to Muller, and to coordinate with TAC as needed. The alternatives analysis kickoff meeting was held on 8/29/23. A site visit was held on 9/22/23 to look at multiple flow paths and potential risks for consideration in alternatives analysis. It was verbally reported at the 11/16/23 Board meeting that Colorado Parks and Wildlife's repair of Lake View Drive is underway which includes the alternatives of concrete pipe and trash racks, cleaning out

of culverts 1-9 and the beaver debris, and it is scheduled for completion by mid-December. Muller was provided US Army Corps of Engineers' guidance on cut and fill for consideration in their alternatives analysis (12/1/23). Muller is working through the Alternative Analysis and is coordinating a meeting (02/02/2024) to discuss alternatives in late February with the team. *Muller presented a design alternatives overview in a meeting held on (02/28/2024) and is working to compile the alternatives analysis with costs in April.*

3. Cherry Creek Stream Reclamation – Upstream of Scott Road (CCB-5.17)

- a. Description: Design and construction of stream reclamation is in partnership with Douglas County and MHFD. It improves 4,100 feet of Cherry Creek and is located upstream of Scott Road.
- b. Status: IGA was approved by the Board at their April 2020 meeting. Muller had been selected as consultant, and design scope of work is being prepared. Kickoff meeting was held on 12/11/20; a follow-up field visit will be scheduled for early 2021. Site visit was held on 1/29/21. Conceptual design is complete, negotiations are underway to contract for 60% design (4/8/21). Muller is working on alternatives (4/30/21). Muller is working on preliminary design and an IGA Amendment to bring in additional 2021 funding from Douglas County is being brought to the Board in October (10/15/21); IGA Amendment has been executed (11/11/21). Muller is preparing 60% Design Submittal (1/28/22). Muller submitted 60% Design on 2/2/22; comments have been provided on 60% Design Submittal (3/10/22). IGA Amendment bringing in 2022 funding is scheduled for TAC and Board consideration in June (5/27/22). IGA Amendment was authorized at the June 16th Board Meeting (6/30/22). Muller is working on Final Design and held a progress meeting on 4/14/23, a site visit is being scheduled to support the 90% design submittal. The 90% site visit was held on 5/22/23. Muller submitted their 90% design submission on 9/14/23; the engineer's estimate confirms that additional funding is needed for construction. IGA Amendment for additional funding is scheduled for TAC and Board consideration at October meetings and 90% review meeting was held on 10/13/23. Comments were provided for 90% submittal and discussed at the review meeting (11/10/23).

4. Cherry Creek Stream Reclamation at Dransfeldt (CCB-5.17.1B)

- a. Description: Design and construction of stream reclamation is in partnership with Town of Parker and MHFD. It improves 2,400 feet of Cherry Creek near the future location of Dransfeldt bridge which is just downstream of the Cherry Creek at KOA project.
- b. Status: Initial scoping has begun, and a partners meeting was held on 1/30/21. IGA is scheduled for CCBWQA's May TAC and Board meetings (4/30/21). IGA was approved by all parties and has been executed (6/25/21). Muller Engineering has submitted their Draft Scope of Work for Design Services, and the project sponsors have reviewed it (7/8/21). Design kickoff meeting was held on 10/14/21. Alternatives are being evaluated (12/9/21). Pre-submittal meeting for the 404 permit is being scheduled (12/30/21). CLOMR is being prepared for project (3/10/22) and was submitted to FEMA on 3/31/22. CEI was selected as project partner to provide contractor input during the design (5/27/22). CLOMR is under review by FEMA (8/12/22). Muller has received comments on CLOMR and is preparing responses; 90% Submittal is scheduled for early February (1/27/23). Comments on 90% Submittal were provided on 2/22/23; project is experiencing substantive cost increases due to current market conditions (2/24/23). TAC at their 3/2/23 meeting recommended that the Board authorized the IGA Amendment to bring in 2023 funding along with an increase in CCBWQA's 2023 funding from \$170,000 to \$570,000. The Board authorized the IGA Amendment with the increased 2023 funding of \$570,000 at their 3/16/23 meeting. The Conditional Letter of Map Revision (CLOMR)

was issued by the Federal Emergency Management Agency (FEMA) on April 28, 2023 (5/12/23). The sanitary sewer relocation will be contracted to start with, in order to avoid a pipe material cost increase, and to get it out of the way for the forthcoming stream reclamation (7/13/23). The sanitary sewer relocation has been contracted for with Concrete Express Inc. or CEI (8/11/23). Construction of stream reclamation will start once Individual Permit Authorization has been received (11/10/23). CEI has sent final contract pricing to MHFD via email (01/26/2024) updated from pricing in October 2023. *The Individual Permit authorization under section 404 of the Clean Water Act for the project was received on (02/29/2024).*

5. Piney Creek - Cherry Creek to Parker Road, Reaches 1 to 2 (SEMSWA) (CCB-6.5)

- a. Description: This project includes 2900 liner feet of stream reclamation on Piney Creek. The project partners are SEMSWA and CCBWQA.
- b. Status: Project coordination meeting was held with SEMSWA on 6/29/22. IGA drafted and is being reviewed by SEMSWA (8/12/22). IGA was approved by CCBWQA at the 9/15/22 Board meeting. IGA Amendment to bring in 2023 funding was recommended by the TAC and authorized by the Board in May (5/25/23). CCBWQA sent the Draft IGA Amendment to SEMSWA for review on 6/29/23. SEMSWA has no comments on the IGA Amendment and plans to take it to their Board in October (8/11/23). The project site was walked w/ith SEMSWA and Olsson and Associates on 8/30/23, Olsson is preparing their scope of work and fee for design. Comments on Olsson's scope of work and fee were provided to and coordinated with SEMSWA (11/10/23). Olsson's scope of work and fee have been finalized and SEMSWA is planning on contracting for the initial design phase in early 2024 (12/1/23). The design contract with Olsson was completed on (01/19/2024). A site visit is set with Nicole with SEMSWA for 02/12/2024 to observe and discuss the project. *The project design kickoff meeting was held on 02/29/2024.*

6. Piney Creek south of Orchard Rd., Reaches 4 to 5 (SEMSWA) (CCB-6.6)

- a. Description: This project includes approximately 3,800 liner feet of stream reclamation on Piney Creek. The project partners are MHFD, SEMSWA and CCBWQA.
- b. Status: *A site visit is set with Nicole with SEMSWA for 02/12/2024 to observe and discuss the project.*

7. McMurdo Gulch Priority 3 Stream Reclamation (CCB-7.4)

- a. Description: The design and construction of stream reclamation is in partnership with Castle Rock. Castle Rock is the lead agency. This phase continues the work from the previous phase. Muller Engineering is the design consultant.
- b. Status: Board authorized IGA for Priority 3 at their May 19,2022 meeting. Muller submitted their 30% deliverable on 10/31/22, review comments were returned on 11/8/22. Easements needed for projects have been identified (1/23/22). The 60% Submittal was received on 1/30/23 and comments have been provided on 2/7/23. Muller is working on updating their construction cost estimate (2/8/23). On 2/23/23, Castle Rock requested that CCBWQA's 2023 funding be deferred to 2024 to match their schedule. A meeting was held on 01/24/2024 to help determine the approach for obtaining 404 permitting (including Muller, ERO, Castle Rock and CCBWQA). Wetland mitigation under a nationwide permit was recommended by ERO and potential cost impacts for this approach were discussed. Muller's is working on updating estimated construction costs but anticipates being able to move forward with one complete project instead of phasing into two (separating the work on the upstream reach). Muller provided a breakdown of the estimated construction cost versus budget in a meeting with Castle Rock on (02/08/2024) showing the potential to construct both projects in one phase.

8. Lone Tree Creek in CCSP downstream of Pond (CCBWQA Only) (CCB-21.1)

- a. Description: *New Project 2024 – Description TBD*
- b. Status:

9. Lone Tree Creek in Cherry Creek State Park (CCB-21.3)

- a. Description: This project includes a trail connection to Cherry Creek State Park and includes 570 linear feet of stream reclamation on Lone Tree Creek from the State Park Boundary to the Windmill Creek Loop Trail. The City of Centennial is the project lead. CCBWQA participation is for stream reclamation only.
- b. Status: 95% submittal is under review (5/13/22); review comments have been returned (5/27/22). Project funding was brought to TAC at their 7/7/22 meeting, during drafting of IGA it was discovered that future maintenance of stream reclamation should be considered, project will be brought back to TAC at an upcoming meeting for maintenance discussion and recommendation (8/12/22). A stakeholder meeting was held on 9/29/22 to discuss maintenance. A stakeholder meeting was held on 11/2/22 to discuss findings from CCBWQA's site visit and findings included in Wright Water Engineers report. The Board supports CCBWQA's partnering with Centennial at their 11/17/22 meeting. A Memo of Understanding is under review by Colorado Parks and Wildlife (CPW) affirming maintenance responsibilities for the stream reclamation fit under the current agreement between CCBWQA and CPW (3/30/23). CCBWQA sent the Draft IGA to Centennial for review on 5/23/23. The project is included in CCBWQA's 2024 Budget and 10-year CIP (11/10/23). UASCE is currently reviewing this project as of a letter requesting comments dated (12/15/2023). *100% Construction Documents were submitted (02/20/2024).*

10. Happy Canyon Creek at Jordan Road (SEMSWA) (CCB-22.1)

- a. Description: The design and construction are in partnership with Southeast Metro Stormwater Authority and MHFD and includes 2,500 feet of stream reclamation. The Authority's water quality component share for design and construction is estimated to be \$325,000. The total project cost is estimated at \$1,300,000.
- b. Status: IGA is scheduled for June TAC and Board meetings (5/27/21). IGA has been approved and executed by all parties (7/29/21). Jacobs has been selected as design consultant and project scoping is underway; limits have been extended upstream to the County Line and sediment capture area and transport will be included with the project (10/15/21). Jacobs has submitted their scope of work and fee for design which is under review by project sponsors (11/11/21). Project sponsors have completed a review of Jacobs' fee and scope of work and the agreement is being routed for signatures (1/28/22). IGA Amendment to bring in 2022 funding is in process (3/10/22). A project kickoff meeting was held on 3/28/2022. A site visit was performed on 4/12/22 to document existing conditions and identify sediment source/transport/deposition areas. Project Team is preparing a sampling plan for bank and bed materials to determine phosphorus content (5/13/22). The project team met on 5/24/22 to discuss project goals and Jacobs is progressing through the study. Jacobs and ERC are working on sediment transport analysis and model (6/30/22). The results from the sediment transport model were presented at the 8/23/22 progress meeting and an upstream sediment capture area just south of the JWPP was included in the alternatives analysis (8/26/22). The alternative analysis report is expected to be completed before the end of 2022 (10/13/22). Lab results from stream soil samples were sent to Jacobs so that they include phosphorus reduction in the alternatives analysis report; a groundwater investigation is needed to inform sediment capture facility and stream reclamation alternatives, scoping and negotiations are in progress (11/11/22). Groundwater scope of work has been reviewed

and approved by project sponsors (1/13/23). The IGA Amendment bringing in the 2023 funding was recommended by TAC and authorized by the Board in April (5/12/23). A progress meeting was held on 10/30/23 where the groundwater information was reviewed and the impacts from the 2023 storms were discussed; MHFD is planning additional sediment removals accordingly. A project site walk with the project team is scheduled for 1/31/2024. A site walk was held on 01/31/2024 with SEMSWA, MHFD and the design team to discuss the study and observe the changes in the project since the 2023 storms. MHFD has performed sediment removals, and that quantity information was shared with the project team. (01/31/2024). *A design progress meeting was held on (02/26/2024) to discuss the direction moving forward in the alternatives analysis from the assessment phase of the project.*

11. Happy Canyon Creek - Upstream of I-25 (CCB-22.2)

- a. Description: The design and construction are in partnership with Douglas County, City of Lone Tree, and MHFD and includes 2,500 feet of stream reclamation. The Authority's water quality component share for design and construction is estimated to be \$500,000. The total project cost is estimated at \$2,000,000.
- b. Status: Douglas County, City of Lone Tree, and MHFD have initially funded and selected Muller Engineering as the design engineer. Design has started and a progress meeting was held on 1/27/21. Design is progressing (2/11/21). Muller has submitted 60% Design Deliverables (5/27/21). IGA for 2021 Funding is being brought to Board in September (9/9/21). 2021 IGA Amendment has been executed (11/11/21). Coordination with CDOT and Amendment at their June 16th meeting (6/30/22). The project received environmental clearance from CDOT (8/12/22). The 90% design submittal is scheduled for delivery by end of September (8/26/22). The 90% design submittal is being reviewed (10/13/22). Comments were provided on 90% submittal (11/11/22). Muller completed the 100% design submittal on 11/22/22. CDOT permit was issued, and pre-construction meeting was held on 1/10/23; construction start is scheduled for 1/30/23 pending execution of easement documents from Surrey Ridge which has agreed to terms and easement language. Notice to Proceed on construction is pending execution of easement documents (1/27/23). Easements have been signed by property owners and Notice to Proceed has been issued to Naranjo Civil Constructors (2/8/23). Construction is underway with initial construction BMPs/stormwater controls in place; water diversion and control is being set up for the downstream section of the project (3/10/23). Water control is in place and construction of stream reclamation is underway for downstream sections of the project (3/30/23). Riffle and Boulder Cascade drop structures on downstream third of project are nearing completion (4/13/23). Construction is underway in the middle third of the project; efforts consist of stream grading and installation of Riffle and Boulder Cascade drop structures (5/12/23). The storm damage from May 11 to 13, 2023 event is being identified and repaired (5/25/23). Construction on the middle third is substantially complete and work has begun on the upstream third (7/27/23). The construction is nearly complete with the punch list walk on 9/13/23; contractor is working on completing plantings and resolving punch list items. Asphalt repairs on the frontage road are being scheduled and some of the plantings will need to be done during the 2024 spring planting window to improve their chance for success (11/10/23). Asphalt repairs have been made and the project summary has been prepared (12/1/23).

12. Dove Creek - Otero to Chambers Rd. (CCB-23.1)

- a. Description: The design and construction are in partnership with Southeast Metro Stormwater Authority (SEMSWA) and with Mile High Flood District (MHFD) being a key stakeholder; it includes 1,300 feet of stream reclamation. The Authority's water quality

component share for design and construction is estimated to be \$175,000. The total project cost is estimated at \$700,000.

- b. Status: SEMSWA is drafting the Intergovernmental Agreement to bring in the 2021 funding for the project (3/12/21). RESPEC is the design consultant; two conceptual design alternatives have been prepared and reviewed during meeting on 3/15/21. IGA is scheduled for CCBWQA's May TAC and Board meetings (4/30/21). IGA has been approved and executed by all parties (7/29/21). 30% Design Review Meeting was held on 8/23/21. A Progress meeting is scheduled for 2/26/22 with 60% Plan submittal expected to follow (1/28/22). The 60% Design was submitted on 2/16/2022, comments were provided, and a design review meeting was held on 2/23/2022. IGA Amendment to bring in 2022 funding is in process (3/10/22). Construction costs were prepared by CEI based on 60% submittal (5/13/22). A design progress meeting was held 6/14/22 and 90% design submittal is being prepared (6/30/22). 90% design submittal is expected by the end of July (7/15/22). The 90% design submittal was reviewed, and comments were submitted on 8/22/22. Construction is anticipated in 2023 (10/13/22). A progress meeting was held on 11/8/22, project will likely be done in 2 phases, IGA Amendment will be needed early in 2023 so that construction can start ahead of storm season. Dove Creek IGA for construction of Phase 1 is scheduled for TAC and Board in January 2023, construction is expected to start shortly afterwards (12/30/22). Construction is scheduled to start mid-February; construction agreement and engineering construction services amendment are currently being reviewed (1/27/23). Construction and engineering construction services have been finalized and a preconstruction meeting was held on 2/2/23. Notice to Proceed has been issued to Concrete Express; construction is underway with initial construction BMPs/stormwater controls in place (3/10/23). Water control is in place and construction of stream reclamation is on-going (3/30/23). Step pool drop structures have been constructed and work on soil wraps is underway (4/13/23). Low-flow or bank full channel work (soil wraps and erosion control blanket) and step-pool structures are complete, water diversion has been removed, and is active to storm flows; work continues in upland areas and higher elevations of stream reclamation (5/12/23). Storm damage from May 11 to 13, 2023 event is being repaired (5/25/23). Construction punch list is being completed (6/29/23). Construction of Phase 1 is complete (7/27/23). Project summary has been prepared (12/1/23).

13. Dove Creek - Chambers Rd. to Pond D-1 (CCB-23.1)

- a. Description: The design and construction are in partnership with Southeast Metro Stormwater Authority (SEMSWA) and with Mile High Flood District (MHFD) being a key stakeholder; it includes 1,300 feet of stream reclamation. Construction was broken into 2 phases with Phase 2 scheduled for 2024.
- b. Status: CCBWQA acted at their October meeting to advance their funding for Phase 2 Construction to 2023 with SEMSWA's funding scheduled for 2024, IGA has been prepared and scheduled for signatures after SEMSWA's November Board meeting, phosphorus estimates for sediment capture areas for the project were provided to Technical Manager (11/10/23). A progress meeting was held on 01/23/2024 and construction is expected to start on 02/05/2024 completing 07/2024. GESC and State Stormwater Permitting was obtained week of the 02/05/2024 allowing the work to commence. Potholing for the project has been completed and results of waterline depths in the project area, appear to reduce encasements required throughout the project reach as reported in the progress meeting (02/06/2024)

14. Mountain and Lake Loop Shoreline Stabilization Phase II (OM-)

- a. Description: This project was identified through the 2020 annual inspection and design and permitting started in 2021. It adds about 40 feet of shoreline protection where it has eroded leaving a 1-2-foot-tall vertical bank.
- b. Status: Construction Plans have been prepared and the GESC was submitted to Arapahoe County for review (1/13/22). Plans are being reviewed by US Army Corps of Engineers for 408 clearance (5/13/22). *Comments were received from the US Army Corps of Engineers on 8/29/23.* A meeting has been scheduled for 11/16/23 with USACOE's local staff and CPW staff to discuss the cut and fill balance requirements on this project and other planned projects in Cherry Creek State Park (11/10/23). A site meeting with CPW is being scheduled to determine the feasibility of the project after the 2023 storm damage (12/1/23). The 12/20/23 site meeting with Michelle Seubert identified 2 possible alternatives to address 2023 storm damage and meet USACOE cut and fill requirements while maintaining access to the swim beach. An updated project cost is about \$90,000 which is over the \$65,000 budgeted in 2024 (12/28/23). After discussion with Gene at USACE, further analysis to determine project feasibility is necessary and will be provided.