



**Cherry Creek Basin Water Quality Authority
Technical Advisory Committee Meeting Agenda
Thursday, March 2, 2023, 9:00 a.m.**

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

**Virtual: Zoom¹
<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)
2. Meeting Minutes from February 2, 2023 (enclosed)
3. Highlights from January 19, 2023 Board Meeting (Clary)
4. Action Items (9:10)(30 minutes)
 - a. Recommend Authorization of Cherry Creek at Dransfeldt IGA Amendment - MHFD IGA Amendment 21-05.04B (including a request for additional funding) (Borchardt, enclosed)*
 - b. Recommend Approval of the 2022 Water Quality Monitoring Report (Stewart)
5. Discussion Items (9:40) (45 minutes)
 - a. Committee Formation and Participation (Erickson/Clary; [Board Binder Committee Summary](#))
 - b. New Committees (Clary, enclosed)*
 - i. Watershed Plan Update
 - ii. Modeling - Reservoir and Watershed
 - c. Lake Nutrients Criteria RMH (DiToro, enclosed)
 - d. Combined Southwest Tributaries Master Plan Report with SEMSWA (Clary)
 - e. Pollution Abatement Project/Capital Improvement Program Budget and Schedule (Borchardt, enclosed)*
 - f. [2022 Annual Report on Activities](#) (Reminder comments due 3/3, Clary)
6. Presentations
7. Updates (10:25)
 - a. Cherry Creek Stewardship Partners (Davenhill)
 - b. TAC Members
 - c. TAC Subcommittees
 - d. Contractors
 - i. [Water Quality Update](#) (Stewart)
 - ii. Pollution Abatement Projects (Borchardt/Goncalves)
 - a. CIP Status Report
 - b. Maintenance and Operations Status Report
 - iii. Regulatory (DiToro)
 - iv. [Land Use Referral Tracking](#) (Endyk)
 - e. Manager
 - f. Other
8. Upcoming Events
 - a. Cherry Creek in CCSP Muller Report and BMP Effectiveness Workshop - March 16, 2023 8:30-11:30 am
 - b. Watershed Plan Process - September 21, 2023 - 8:30-11:30 am

¹ If you are unable to participate on the CCBWQA's Zoom platform, please email val.endyk@ccbwqa.org

9. Adjournment (11:00)



**Cherry Creek Basin Water Quality Authority
Minutes of the Technical Advisory Committee
Thursday, February 2, 2023, 9:00 a.m.**

TAC Members Present

Alex Mestdagh, Town of Parker (zoom)
Ashley Byerley, SEMSWA
Brad Robenstein, Douglas County - Alternate (zoom)
Caitlin Gappa, Douglas County Health Department (zoom)
Casey Davenhill, Board Appointee, Cherry Creek Stewardship Partners
David Van Dellen, Town of Castle Rock
Jacob James, City of Lone Tree
James Linden, SEMSWA - Alternate (zoom)
Jason Trujillo, Board Appointee, Cherry Creek State Park
Jeremiah Unger, CDOT
Jim Watt, Board Appointee, Mile High Flood District (zoom)
Joseph Marencik, City of Castle Pines
Jon Erickson, TAC Chair, Board Appointee, Colorado Parks and Wildlife
Lisa Knerr, TAC Vice Chair, Arapahoe County
Rebecca Tejada, Board Appointee, Special Districts, Parker Water and Sanitation District
Rick Goncalves, Board Appointee
Ryan Adrian, Douglas County (zoom)
Sherry Scaggiari, Aurora (zoom)
Steve Chevalier, Arapahoe County Health Department
Wanda DeVargas, Board Appointee, E-470 (zoom)

Board Members Present

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

Others Present

Alan Leak, RESPEC
Erin Stewart, LRE Water
Jane Clary, Wright Water Engineers, CCBWQA Technical Manager
Jessica DiToro, LRE Water
Larry Butterfield, CPW (zoom)
Richard Borchardt, R2R Engineers
Val Endyk, CCBWQA

1. Call to Order/Opening Remarks

Jon Erickson called the meeting to order at 9:00 am and introduced new TAC members listed below.

- a. Jessica La Pierre - City of Aurora, Introductions**
- b. Caitlin Gappa - Douglas County Health Department, Introductions**

c. **Brad Robenstein - Douglas County, Alternate for Ryan Adrian, Introductions**

d. **Gene Seagle - US Army Corps of Engineers, Introductions**

Gene Seagle was not present.

2. **Meeting Minutes from January 5, 2023**

Jacob James moved to approve the January 5, 2023 meeting minutes. Seconded by Rebecca Tejada. The motion carried.

3. **Highlights from January 19, 2023 Board Meeting**

Jane Clary provided an update on actions taken at the January 19, 2023 Board meeting.

Erin Stewart presented the WY 2022 Monitoring Report at the January meeting. A link to the draft report was sent via email and feedback/comments are due by February 10th.

4. **Action Items**

a. **Acceptance of Project Summary Reports**

i. **East Boat Ramp Shoreline Stabilization Phase 2**

ii. **Cherry Creek Stream Reclamation at 12-mile Park Phase 3**

iii. **McMurdo Gulch 2022 Stream Reclamation**

Rich Borchardt presented the project summaries for the [East Boat Ramp Shoreline Stabilization Phase 2](#), [Cherry Creek Stream Reclamation at 12-mile Park Phase 3](#), and [McMurdo Gulch 2022 Stream Reclamation](#) projects highlighting the photos and providing explanation for each project.

Rick Goncalves moved to accept the project summaries for the East Boat Ramp Shoreline Stabilization Phase 2, Cherry Creek Stream Reclamation at 12-mile Park Phase 3, and McMurdo Gulch 2022 Stream Reclamation projects. Seconded by Jason Trujillo. The motion carried.

b. **RDS Operations and Maintenance for 2023**

Rick Goncalves provided his recommendations for the Reservoir Destratification System (RDS) operations and maintenance for 2023. Rick's [Action Item Memo](#) details the recommendations outlined in the [2022 RDS Operations and Maintenance Annual Report](#) accepted by the Board at the January 19, 2023 meeting. The cost for these recommendations is accounted for in the 2023 budget.

Recommendations:

- Have Ingersoll Rand (IR) clean compressor coolers at a frequency of about every 2 months during the operating season to minimize the chances of another high temperature shutdown
- Evaluate options to improve communication with IR and consider other options to monitor RDS operations to minimize the length of future shutdowns.
- Continue monitoring the annual energy consumption and look for any trends that may point to developing issues or concerns.

Discussion included:

- A summary of the benefits of the RDS is being prepared for new Board and TAC members
- Additionally, further discussions are coming at the Board and TAC level on beneficial uses and metrics of success.
- The 2023 budget includes the cost for preventative maintenance which includes these recommendations.

Lisa Knerr moved to recommend to the Board that the recommendations made in the 2022 RDS Annual Report be implemented, as covered in the 2023 budget. Seconded by David Van Dellen. Rick Goncalvez abstained. The motion carried.

5. **Discussion Items**

a. Initial Watershed Plan Update

Jane Clary summarized the January 16, 2023 Strategic Planning meeting where TAC Chair, Jon Erickson, along with Authority consultants and the Board Executive Committee met to discuss priorities and vision. Initial steps to update the CCBWQA Watershed Plan will be a priority in 2023. September workshop will focus on these planning efforts.

b. Potential Topics for Subcommittees

i. MS4 (Retained)

ii. Watershed Plan

iii. Models

iv. Pollution Abatement Projects

Jane Clary introduced the discussion on potential committees needed to support CCBWQA priorities in 2023. Jon Erickson expressed support of working on subcommittees to work through details to bring information to the TAC.

Discussion included:

- The Watershed Plan Subcommittee would include integration of GIS information.
- General consensus that we should move forward with the above listed subcommittees.
- Jane Clary will send an email with details and requests for interest after input is received from the Board.

c. Lake Nutrients Criteria RMH *(moved to after the Water Quality Standards 101 presentation)*

6. Presentations

a. [Water Quality Standards 101](#)

Jessica DiToro presented an overview of water quality standards and how they apply to the CCBWQA.

5. b. Lake Nutrients Criteria RMH *(moved from Discussion)*

Jessica DiToro provided an update on the Lake Nutrients Criteria Rulemaking Hearing Rebuttal (RMH). The Board approved the Rebuttal at the January meeting. Staff will continue to work with the Regulation 38 RMH Board Subcommittee (if necessary) and will engage with the Water Quality Control Division for feedback prior to submission of the Rebuttal. The Rebuttal is due to the Water Quality Control Commission on February 15th. Jon Erickson provided an update that CPW “does not oppose” CCBWQA’s proposal for a delayed effective date.

7. Updates

a. Cherry Creek Stewardship Partners

Casey Davenhill provided background on how the Stewardship Partners operates in conjunction with CCBWQA with a focus on messaging about what the Authority does and how the work benefits the watershed. Science Fair and other upcoming event details on the website. Appreciate any TAC or Board participation at events.

Casey provided an extended update to the TAC which can be found [here](#).

[Water Quality Brochure](#)

b. TAC Members

Jason Trujillo mentioned that a new building at the swim beach at CCSP construction will begin following the 2023 season after Labor Day.

Rebecca Tejada provided an update that PWSD has requested a P limit exemption for construction dewatering as part of the upcoming Regulation 72 Informational Hearing on April 10, 2023.

MS4 subcommittee met - Annual report numbers need to be submitted by February 10th.

c. TAC Subcommittees

d. Contractors

- i. [Water Quality Update](#)
- ii. **Pollution Abatement Projects**
 - a. [CIP Status Report](#)
 - b. [Maintenance and Operations Status Report](#)

iii. **Regulatory**

The CCBWQA's letter for the Control Regulation 72 Informational Hearing 72 was submitted to the Water Quality Control Division on January 23rd. The letter states that the CCBWQA will not be the proponent of the Rulemaking Hearing, but if a Rulemaking Hearing is set for CR 72, that the CCBWQA will be party to the Rulemaking. For more information, see: [\(April 2023\) Reg. 72 RRIH - Google Drive](#)

iv. [LUR Tracking](#)

- e. **Manager**
- f. **Other**

8. **Upcoming Events**

- a. **New Member Orientation - February 16, 2023 - 11:00 am - 12:30 pm**
- b. **Cherry Creek in CCSP Muller Report and BMP Effectiveness Workshop - March 16, 2023 8:30-11:30 am**
- c. **Watershed Plan Process - September 21, 2023 - 8:30-11:30 am**

9. **Adjournment**

Jon Erickson adjourned the meeting at 11:05 am.

Memorandum

To: CCBWQA Technical Advisory Committee
From: Jessica DiToro, PE, and Erin Stewart, LRE Water
Reviewed by: Jane Clary, Wright Water Engineers
Date: March 2, 2023
Subject: Lake Nutrients Criteria Rulemaking Hearing

On February 15, 2023, [Rebuttal Statements](#) (Rebuttals) were due for the Water Quality Control Commission (WQCC) [Lake Nutrients Criteria Rulemaking Hearing](#) (RMH). Staff has reviewed the Rebuttals by other parties for any discussion regarding Cherry Creek Reservoir and/or requests for delayed effective dates/site-specific standards and identified four Rebuttals as discussed below:

Water Quality Control Division (WQCD): The WQCD continues to not support CCBWQA’s request for a delayed effective date. The WQCD does agree that information to support appropriate and protective site-specific standards proposal could be developed for consideration by the 2025 Regulation 38 RMH. However, the WQCD goes on to state that based upon current data, the existing quality of Cherry Creek Reservoir for all nutrient parameters would exceed any use-based standard that would be applied, and implementation of nitrogen and phosphorus controls across sources in the watershed would still be necessary. The WQCD also does not see the need for a delayed effective date, as total maximum daily loads for impairments identified as a result of this RMH will not be developed until after 2032 and discharge permits that fall within the Basin will not be renewed until after 2025.

- In its Rebuttal, WQCD did not address CCBWQA’s concerns regarding statutory constraints in regard to affecting CCBWQA’s ability to propose a site-specific standard(s) if it will be perceived as not being “... *clearly consistent with improving, protecting, and preserving such water quality*.” CCBWQA also continues to believe that until phosphorus concentrations are significantly controlled, reducing nitrogen levels in the watershed to meet total nitrogen (TN) standards as proposed by the Division could have unintended consequences of further exacerbating conditions favorable to cyanobacteria.

Colorado Parks and Wildlife (CPW): CPW stated that they do not oppose the CCBWQA’s delayed effective date request, but would not support any extension to the delayed effective date past the 2025 Regulation 38 RMH. CPW disagreed with “many of the statements and assertions made by CCBWQA in its Responsive Prehearing Statement” (RPHS), including that “there has been significant progress in reducing nutrient concentrations in Cherry Creek Reservoir” and “that it is inadvisable to control TN, since TN is currently the primary nutrient limiting algal growth in Cherry Creek Reservoir. Additionally, CPW does not agree that reducing TN will necessarily lead to more toxin production, and could lead to more toxin production”.

- Staff believes that CPW took a comment made in the CCBWQA RPHS in regard to “*significant progress in reducing nutrient concentrations*” out of context. CCBWQA made this comment in regard to the progress and actions taken in the watershed to reduce nutrient concentrations in the watershed and inflows to the Reservoir. Instead, it appears CPW misinterpreted this statement to be in regard to

the nutrient concentrations in Cherry Creek Reservoir and in their Rebuttal provided historical nutrient concentrations in Chery Creek Reservoir (using an incomplete data set missing data from 2009-2012). Also, CPW did not address the data supporting the claims in CCBWQA's RPHS Section II (2) and (3) regarding the significant nutrient controls and reductions for point sources and advanced stormwater and non-point source controls being implemented in the basin under Control Regulation 72.

- CPW states that it “does not agree that it is inadvisable to Control TN” which misrepresents the statements that were actually made in the CCBWQA RPHS, which are: “Until phosphorus concentrations are significantly controlled, reducing nitrogen levels in the watershed to meet the TN standards are proposed by the Division could have an unintended consequence of further exacerbating conditions favorable to cyanobacteria.”
- CPW also states that they do not agree “that reducing TN will necessarily lead to more toxin production, and could lead to more toxin production” which the CCBWQA did not state in its RPHS. In addition, the data that CPW references in its Rebuttal in regard to nitrogen-limitation and toxin production does not represent Cherry Creek Reservoir well since the CCBQA monitoring data indicates that elevated cyanobacteria biovolumes, high chlorophyll a concentrations, and the associated cautions/closures to recreation resulting from accumulated scums and/or toxins more commonly correspond to nitrogen-fixing cyanobacteria such as *Dolichospermum* and *Aphanizomenon*, as opposed to *Microcystis* and *Planktothrix*, as referenced.

Environmental Protection Agency (EPA): The EPA stated that they did not see any compelling reason or need to delay the implementation of the standards in Cherry Creek Reservoir. In the EPA's opinion, setting standards now would not preclude the CCBWQA's efforts to develop site-specific standards either *more or less stringent* for the 2025 Regulation 38 RMH. The EPA also reiterated its statement from their RPHS regarding how the WQCD's TN and total phosphorus (TP) criteria proposal for Cherry Creek Reservoir were not based on the site-specific chlorophyll a standard that is currently in effect. Ultimately, the EPA supports the application of standards to Cherry Creek Reservoir at this current RMH, with the development and adoption of site-specific standards at a future date, if shown to be appropriate.

- In its Rebuttal EPA did not address CCBWQA's concerns regarding statutory constraints in regard to limitations on proposing a site-specific standard(s) if it will be perceived as not being “... *clearly consistent with improving, protecting, and preserving such water quality.*”

City of Aurora (Aurora) and Parker Water and Sanitation District (PWSD): Aurora and PWSD have requested that the WQCC not adopt any standards in this RMH and instead adopt a delayed effective date until 2027 (when TN and TP standards will be applied to all lakes and reservoirs statewide) to allow parties to develop site-specific standards for WQCC consideration before table value standards become effective. In their Rebuttal, Aurora and PWSD provided possible Statement of Basis and Purpose Language (Attachment A). Aurora and PWSD, in the context of Rueter-Hess Reservoir, describe the uniqueness of the Cherry Creek Basin (i.e., the existence of Control Regulation 72, the high natural background TP concentrations, the significant nutrient controls already in place through nonpoint and stormwater controls, and the low discharge limits already being achieved by the Basin's wastewater treatment facilities, etc.).

- On February 14, 2023, Aurora and PWSD's legal counsel reached out to CCBWQA staff requesting CCBWQA support for Aurora and PWSD's proposal in the CCBWQA Rebuttal. Because the CCBWQA Board had already approved the Rebuttal for submission to the WQCC and the Rebuttal was due on February 15, 2023, CCBWQA was not able to consider last minute changes to its RPHS. However, moving forward, there may be potential for negotiations (cut off March 16, 2023) with the WQCD, either jointly or independently of Aurora and PWSD.

Additional Observations:

- The Chatfield Watershed Authority (Phosphorus Control Regulation 73) and Summit Water Quality Authority (Phosphorus Control Regulation 71) both expressed concerns and/or opposed the adoption of these criteria at this RMH in their respective Rebuttals.
- Arapahoe County Water and Wastewater Authority, East Cherry Creek Valley Water and Sanitation District, and United Water Sanitation District submitted a joint Rebuttal formally opposing the proposed TN and TP criteria at this RMH.

Next Steps: The RMH is scheduled for April 10-11, 2023. Staff anticipates that CCBWQA will be given 3-5 minutes to present orally to the WQCC. The amount of time we will be allowed to present will be determined at the Prehearing Conference scheduled for March 7, 2023. Staff will prepare a presentation for the Board to approve at its March 16, 2023 meeting. The RMH deadlines overlaid with the CCBWQA meetings schedule is provided in Attachment B.

The City of Aurora and Parker Water and Sanitation District's Proposed Statement of Basis and Purpose Language Included In Their Rebuttal:

The Commission continues to support a phased approach to nutrient reductions by adopting numeric standards as table value standards for statewide applicability while preserving the existing state by delaying the effective date of those standards until 2027.

Significant testimony during this proceeding demonstrated that lakes and reservoirs vary widely across the state based on unique characteristics, such as residence time, depth, air temperature, precipitation, the presence of wildlife, and the rate/timing, volume, and quality of inflows. Lakes and reservoirs classified as Direct Use Water Supply also may benefit from advanced water treatment that better guards against disinfection byproducts in drinking water, diminishing the need for a stringent chlorophyll a standard. Some lakes and reservoirs are also subject to active water quality management programs and/or control regulations that must be considered before immediate application of standards. The Commission also received testimony as to feasibility constraints in complying with the nutrients standards implemented in permits.

The Commission agrees with parties that imposing table value standards on most lakes and reservoirs statewide would impose significant and immediate costs and burdens on owners and operators of lakes and reservoirs, water users, dischargers, and the Division. The Commission finds that the water quality benefits associated with immediate application of table value standards would not have a reasonable relationship to the economic, environmental, energy, and public health costs associated with such standards.

The Commission concurs with parties' testimony that that it will be a more efficient use of resources, and would remain consistent with the Water Quality Control Act, for parties to be granted a defined period of time to develop defensible and appropriate site-specific standards or, alternatively, to prepare for implementation of the standards.

The Commission expects site-specific standards proponents to timely develop and present, and the Division to consider, any proposals during the upcoming basin hearings. To the extent proponents do not present a site-specific standards proposal at such time, granting a delayed effective date only until 2027 will ensure appropriate and protective standards are applied to lakes and reservoirs by that time, consistent with the Division's 10-Year Water Quality Roadmap.

Attachment B

Lakes Nutrients Criteria (Regulations 31-38) RMH Schedule + CCBWQA Meeting Schedule		
Event	Date	Activity
Nutrient Town Hall	May 2 nd	Proposed criteria released by WQCD
May TAC	May 5 th	1 st discussion related to draft criteria at TAC level
May Board	May 19 th	1 st discussion related to draft criteria at Board level
June TAC	June 2 nd	2 nd discussion related to draft criteria at TAC level
June Board	June 16 th	2 nd discussion related to draft criteria at Board level
July TAC	July 7 th	3 rd discussion related to draft criteria at TAC level – Motion for Party Status
July Board	July 21 st	3 rd discussion related to draft criteria at Board level – Motion for Party Status
PPHS	August 3 rd	Review WQCD's PPHS
August TAC	August 4 th	4 th discussion related to draft criteria at TAC level – Motion for RPHS
Party Status Requests	August 17 th	Submit Party Status Request
August Board	August 18 th	4 th discussion related to draft criteria at Board level – Motion for RPHS
September TAC	September 1 st	5 th discussion related to draft criteria at TAC level – Discuss Rebuttal
September Board	September 15 th	5 th discussion related to draft criteria at Board level – Motion for Rebuttal if needed
Supplemental PPHS	October 5 th	Review WQCD's Supplemental PPHS
October TAC	October 6 th	6 th discussion related to draft criteria at TAC level – Update on status
October Board	October 20 th	6 th discussion related to draft criteria at Board level – Update on status
November TAC	November 3 rd	7 th discussion related to draft criteria at TAC level – Discuss RPHS
November Board	November 17 th	7 th discussion related to draft criteria at Board level – Motion for RPHS
December TAC	December 1 st	8 th discussion related to draft criteria at TAC level – Discuss Board Subcommittee
December Board	December 15 th	8 th discussion related to draft criteria at Board level – Motion for Board Subcommittee
RPHS	December 21 st	Submit Supplemental RPHS – TBD + Review other parties' RPHSs
January TAC	January 5 th	9 th discussion related to draft criteria at TAC level – Discuss Rebuttals
January Board	January 19 th	9 th discussion related to draft criteria at Board level – Motion for Rebuttals(?)
February TAC	February 2 nd	10 th discussion related to draft criteria at TAC level – Update on status
Rebuttals	February 15 th	Submit Rebuttal Statement – TBD + Review other parties' Rebuttals
February Board	February 16 th	10 th discussion related to draft criteria at Board level – Update on status
Motions	February 22 nd	TBD
Complex Outstanding Issues Index	March 1 st	Review Index
March TAC	March 2nd	11th discussion related to draft criteria at TAC level – Discuss RMH Presentation
Prehearing Conference	March 7th	Participate (virtually) in conference to maintain Party Status
March Board	March 16th	11th discussion related to draft criteria at Board level – Motion for RMH Presentation
Negotiation Cutoff	March 16th	Final negotiations with WQCD and other parties today
Consolidated Proposal	March 30th	Review Proposal
Cost Benefit Analysis	March 31st	Review Cost Benefit Analysis
Regulatory Analysis	April 5th	Review Regulatory Analysis
April TAC	April 6th	12th discussion related to draft criteria at TAC level – Update on status
RMH	April 10th	Participate (virtually) in RMH
April Board	April 20th	Update on RMH outcome
May TAC	May 4th	Update on RMH outcome

CHERRY CREEK BASIN WATER QUALITY AUTHORITY
2023 Capital Project Status Report
February 24, 2023

RESERVOIR PROJECTS

1. East Shade Shelters Phase III and Tower Loop Phase II Shoreline Stabilization (CCB-17.5 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.*

STREAM RECLAMATION PROJECTS

1. Cherry Creek Stream Reclamation at Arapahoe Road aka Reaches 3 and 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).*
2. 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).

3. 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 for 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).*
4. McMurdo Gulch Priority 3 Stream Reclamation (CCB-7.2)
 - 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.*
5. Lone Tree Creek in Cherry Creek State Park (CCB-21.1)
 - 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 the 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.
6. Happy Canyon Creek – County Line to Confluence with Cherry Creek (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 phosphorous 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).

7. 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 easement acquisitions are on-going (1/13/22). Board authorized 2022 funding and IGA 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).

8. 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.

9. Piney Creek from Fraser Street to Confluence with Cherry Creek aka Reaches 1 and 2 (CCB-21.1)
 - 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.

10. Mountain and Lake Loop Shoreline Stabilization Phase II (OM 4.6)
 - a. Description: This project was identified in 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).