



ACTION ITEM MEMORANDUM

To: CCBWQA TAC
From: Jessica DiToro, PE, LRE Water
Date: July 29, 2022
Subject: Lake Nutrients WQCC Rulemaking Hearing

Request: That the CCBWQA TAC recommend that the CCBWQA Board of Directors approve the Responsive Prehearing Statement (RPHS) that Staff has drafted for the November 2022 Water Quality Control Commission (WQCC) Rulemaking Hearing (RMH). RPHSs are due to the WQCC Office no later than September 7th at close of business.

Issue: At the July 21st CCBWQA Board Meeting, the Board discussed the Lake Nutrients Rulemaking Hearing (RMH, November 2022) and the CCBWQA's involvement. The Board approved the following motion: *I move to authorize the CCBWQA Board to obtain party status for the November 2022 WQCC Rulemaking Hearing regarding lake nutrients criteria by the August 17th deadline and to direct Staff to draft a Responsive Prehearing Statement proposing the following potential alternative: "The CCBWQA proposes that the TN and TP standards for Cherry Creek Reservoir be adopted with a delayed effective date of June 30, 2025. CCBWQA will commit to developing appropriate and protective site-specific nutrient standards utilizing its extensive dataset and supported by its linked watershed and reservoir models, as needed. At the June 2025 Regulation 38 Rulemaking Hearing, CCBWQA will propose these site-specific standards, if appropriate, and if at this time the WQCC decides to not adopt CCBWQA's proposed site-specific standards, the table-value standards will become effective."*

For additional details and history on this issue, please reference Attachment 1 - July 15, 2022, Action Item Memorandum to the CCBWQA Board of Directors regarding Lake Nutrients WQCC Rulemaking Hearing. For details on the discussion that was had at the July 21st Board Meeting, please reference the July 21st Board Meeting minutes.

Budget: Participation in this RMH effort is covered under current CCBWQA contractors' budgets for fiscal year 2022.

Recommendation: **The TAC recommends that the Board submit a Responsive Prehearing Statement (RPHS) for the November 2022 Regulation 38 Hearing. The draft RPHS reviewed by the TAC will undergo additional editing prior to submittal on September 7, 2022. The substantive content of the draft reviewed by the TAC at its August 4th meeting is consistent with the TAC's expectations for the RPHS.**

Next Steps: CCBWQA Staff (LRE & WWE) will review the WQCD's proponent's prehearing statement (PPHS, due August 3rd) and will continue to work with CCBWQA's legal counsel to develop the RPHS (due September 7th) to be brought to the CCBWQA Board in August for approval based on direction from the TAC. Hydros will continue its efforts to conduct an initial evaluation of the Cherry Creek Reservoir data relative to the Tetra Tech/WQCD analysis process used to develop the WQCD's proposed standards to be incorporated into the RPHS by the time of the August CCBWQA Board meeting. This analysis will be used to initially assess whether the proposed standards are appropriate for Cherry Creek Reservoir.



ACTION ITEM MEMORANDUM

To: CCBWQA Board
From: Jessica DiToro, PE, LRE Water
Date: July 15, 2022
Subject: Lake Nutrients WQCC Rulemaking Hearing

Request: That the CCBWQA Board of Directors obtain party status for the November 2022 Water Quality Control Commission (WQCC) Rulemaking Hearing (RMH). Party status requests are due to the WQCC Office no later than August 17th at close of business.

Issue: In 2012 the Water Quality Control Division (WQCD) developed criteria (water quality standards) for total phosphorus (TP), total nitrogen (TN), and chlorophyll-*a*. In 2016 the EPA stated that the criteria were not “sufficiently” accurate or protective for lakes or reservoirs due to the WQCD’s failure to address: 1) confounding factors; 2) differences between cold and warm lakes; and 3) protection of chlorophyll-*a* targets in high yielding lakes. This action letter spurred the WQCD to include the development of new TN and TP criteria for lakes and reservoirs in the 10-Year Water Quality Roadmap.¹

The new criteria were developed using a quantile regression statistical analysis of the state's comprehensive data set (which includes all lakes and reservoirs that were sampled and had available data) which ultimately settled on the 75th quantile as the basis for the numeric criteria. 2012 “interim” criteria were developed using a linear regression. The separate relationships for cold and warm lakes were also incorporated into the development of the new criteria.

On May 2nd the WQCD held a virtual Water Quality Roadmap Town Hall to present the proposed criteria for TP and TN in high priority lakes and reservoirs. Cherry Creek Reservoir is considered to be a “high priority reservoir” as it has a swim beach. The proposed TN and TP criteria that would apply to the Cherry Creek Reservoir, if adopted, are shown below, alongside the current interim criteria for comparison.

Table 1. Proposed TN and TP Criteria for Warm Lakes >25 Acres vs Corresponding Interim Criteria

Warm Lakes, > 25 acres	TP (ug/L)	TN (ug/L)	Chl-a (ug/L)
Interim Criteria (2012)	83	910	20*
Proposed Criteria	36	603	20*

*Cherry Creek Reservoir has a site-specific chlorophyll-*a* standard of 18 µg/L.

The criteria will be assessed against the seasonal average of the data collected from July 1st to September 30th each year. A one in five-year exceedance is allowed.

LRE Water conducted a high-level review of the CCBWQA’s TP and TN data collected in Cherry Creek Reservoir of the photic zone layer (0 to 3 meters) samples collected at the 3 sites from 2017-2021 compared to the interim and proposed draft criteria. Table 2 and Figures 1 and 2, on the following pages, reflect the results of this analysis. Of the most recent five years’ worth of data, neither TP nor TN meet the proposed criteria in any single year.

¹ WQCD Water Quality 10-Year Roadmap: <https://cdphe.colorado.gov/water-quality-10-year-roadmap>

Table 2. Cherry Creek Reservoir TN and TP Seasonal Averages vs Interim and Proposed Criteria

Year	TN Avg. (µg/L)	Interim TN Criteria (µg/L)	Proposed TN Criteria (µg/L)	TP Avg. (µg/L)	Interim TP Criteria (µg/L)	Proposed TP Criteria (µg/L)
2017	761.2	910	603	114.7	83	36
2018	848.1			91.2		
2019	688.8			107.2		
2020	999.2			128.2		
2021	861.1			76.7		

Figure 1. Cherry Creek Reservoir Total Nitrogen Seasonal Averages vs Interim and Proposed Criteria

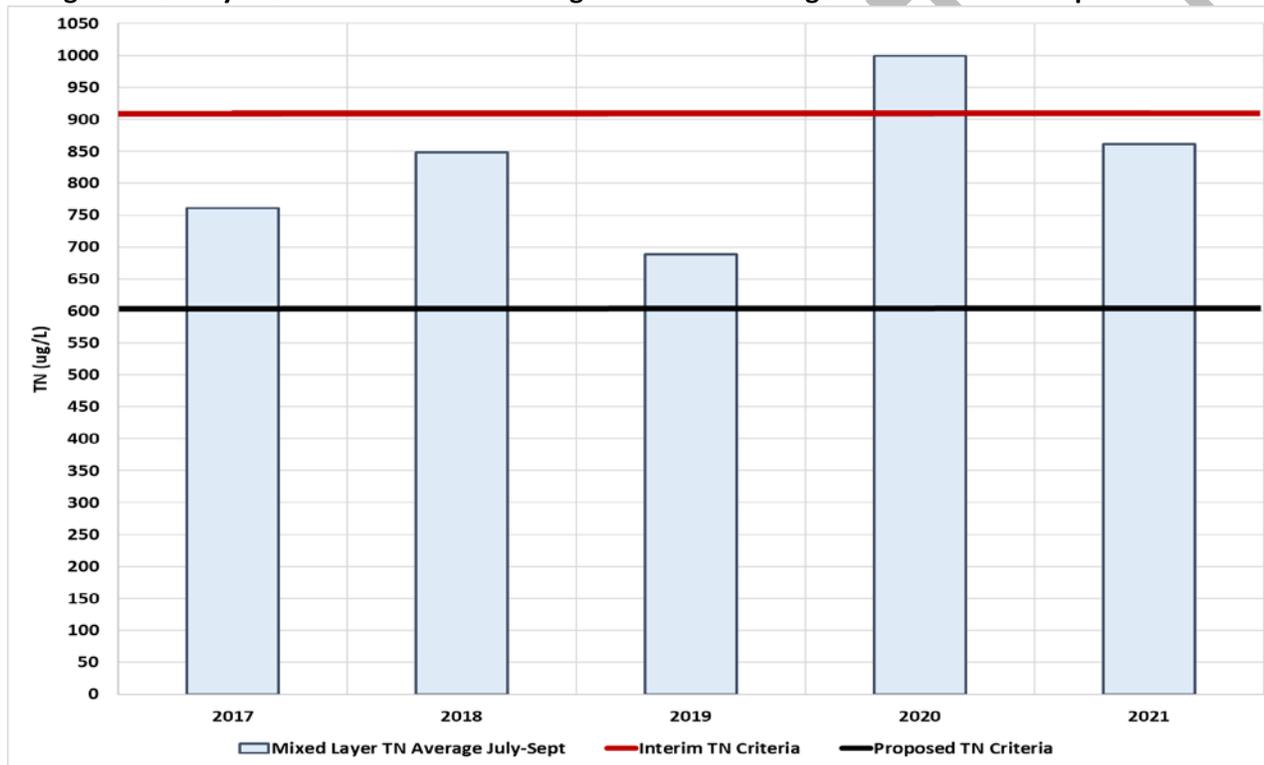
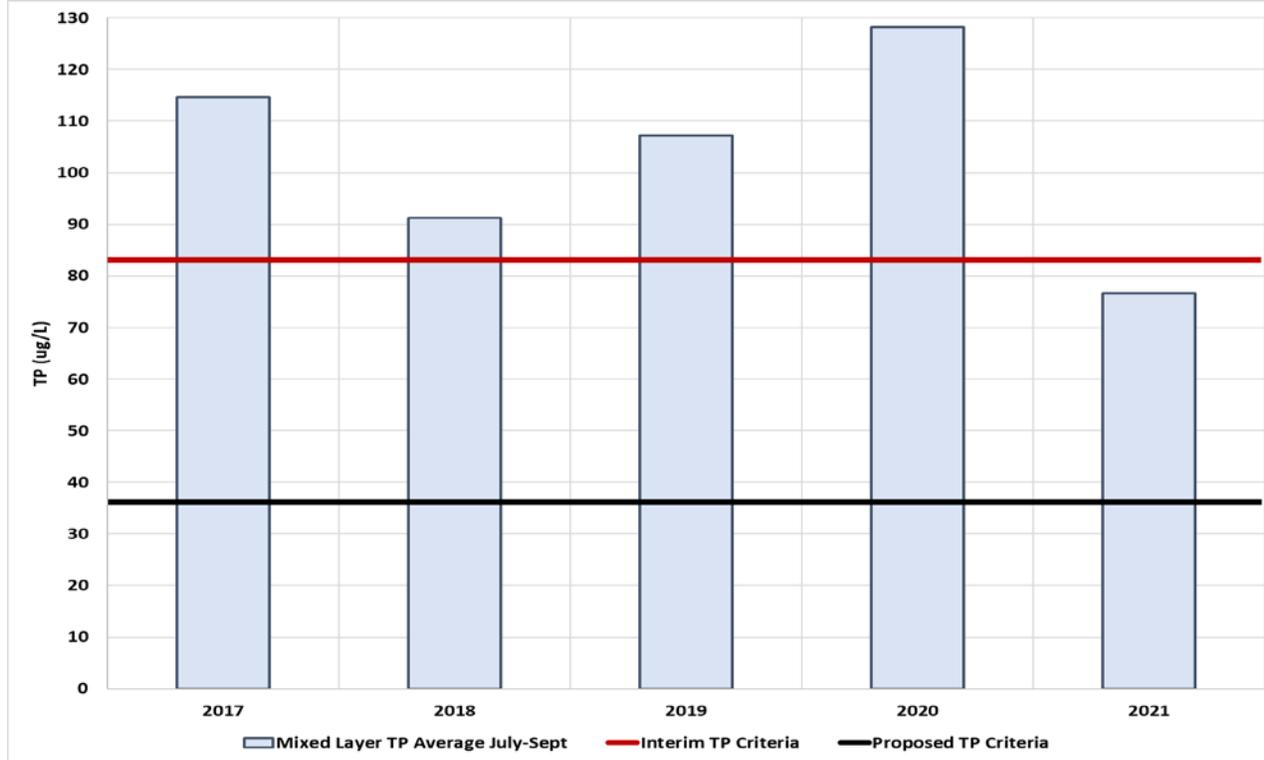


Figure 2. Cherry Creek Reservoir Total Phosphorus Seasonal Averages vs Interim and Proposed Criteria



Cherry Creek Reservoir has a site-specific chlorophyll-*a* standard of 18 µg/L compared to the table value standard (TVS) of 20 µg/L. Cherry Creek Reservoir is currently not attaining its site-specific chlorophyll-*a* standard.

The WQCD will propose to incorporate these new criteria into Regulation 31, and Regulations 32-38 at a Rulemaking Hearings (RMH) scheduled for November 14, 2022.

Proposal to WQCC	June 30 th
Prehearing Statements	August 2 nd
Party Status Requests	August 17 th
Responsive Prehearing Statements	September 7 th
Rebuttal Statements	October 5 th
Negotiation Cutoff	October 26 th
Consolidated Proposal	November 2 nd
RMH	November 14 th

The WQCD has indicated that the first implementation for 303(d) listings will not occur until the May 2025 Regulation 93 RMH, as the above information and associated attainment methodology will not be added to the 303(d) Listing Methodology until March 2024. This means, the earliest, and the most likely date, that the Cherry Creek Reservoir could be listed for TP and/or TN will be in three years (May 2025).

The WQCD has indicated that adoption of site-specific TN and TP standards for these high priority lakes and reservoirs will occur during regularly scheduled triennial review basin-specific RMHs. The next triennial review RMH for Regulation 38 is June 2025. The WQCD has indicated that it will actively work with stakeholders who are interested in developing site-specific standards for their reservoir(s) between now and the respective basin-specific RMHs. The WQCD's methodology includes an option for development of site-specific standards that

incorporates an Observed/Expected (O/E) secchi depth method as a mechanism to potentially make lake-specific adjustments to the standards. Based on limited initial review, this method is not expected to be a fit for Cherry Creek Reservoir.

The WQCD has stated that they will not be opening any control regulations (i.e., Control Regulations 71-74) during the November 2022 RMH, but they will propose that these standards be applied in the Basin-Specific Regulations (i.e., Regulation 38) for reservoirs that fall under these control regulations (i.e., Cherry Creek Reservoir and Chatfield Reservoir). Staff has been actively engaged with the WQCD on this topic. For detailed information on the correspondences and discussions that have occurred between CCBWQA and WQCD, EPA, and CPW, please see Attachment A.

CCBWQA Staff believes that these proposed TP and TN standards are inappropriate and premature for Cherry Creek Reservoir for reasons described in Attachment B. As an alternative to the WQCD's proposal, staff recommends that the CCBWQA: 1) develop appropriate and protective site-specific nutrient standards using the extensive data set available for the reservoir, supported by the CCBWQA's linked watershed and reservoir models, and 2) propose these standards in the June 2025 Regulation 38 Rulemaking Hearing. For purposes of the November 2022 Rulemaking Hearing, CCBWQA could request that the Division's proposed standards for TP and TN either be removed from their proposal or be implemented with a delayed effective date during 2025 if the WQCC decided not to adopt CCBWQA's proposed site-specific standards in June 2025.

Because this position is contrary to the WQCD's proposal, the CCBWQA will need to obtain party status (August 17th) for the November RMH and submit a responsive prehearing statement (RPHS, September 7th) outlining the analysis that supports this position. CCBWQA may also need to submit a rebuttal statement (October 5th) and will very likely need to present orally to the WQCC at the RMH on November 14th.

At the August TAC meeting, a discussion will be had about what stance the CCBWQA will take at the RMH and submit in its RPHS. Attachment C shows how the RMH deadlines align with CCBWQA regularly scheduled meetings and what action is needed at each CCBWQA meeting to move forward. Regardless of the decision that the Board makes regarding CCBWQA's specific position for the hearing, Staff recommends that CCBWQA file party status to maintain a base level of involvement in an important Rulemaking Hearing that affects nutrient standards implemented in the reservoir.

Lastly, CCBWQA Staff is working under a compressed timeline in reviewing these proposed TVVs and bringing forward recommendations to the CCBWQA TAC and Board. The WQCD originally had committed to releasing these draft criteria in November of 2021. The intent was to allow one full year before the formal RMH for parties to review the draft criteria and participate in the RMH process. The WQCD was unable to meet the November deadline and pushed the criteria release to February of 2022, but this deadline was also delayed. Ultimately, the first time that the WQCD made the criteria public was at a CLRMA meeting at the end of April, with the formal release at the May 2nd WQCD 10-Year Roadmap Nutrients Town Hall. This reduced the time that the parties had to review the standards by six months (half the time as originally intended). CCBWQA has worked diligently to keep the TAC and the Board apprised of its review and recommendations. As of this memorandum drafting, three discussions have been held at the TAC level (May, June, and July), and two at the Board level in May and June.

Budget: Participation in this RMH effort is covered under current CCBWQA contractors' budgets for fiscal year 2022.

Motion Option 1: I move to authorize the CCBWQA Board to obtain party status for the November 2022 WQCC Rulemaking Hearing regarding lake nutrients criteria by the August 17th deadline.

or

Motion Option 2: I move to authorize the CCBWQA Board to obtain party status for the November 2022 WQCC Rulemaking Hearing regarding lake nutrients criteria by the August 17th deadline and to direct Staff to draft a Responsive Prehearing Statement proposing the following *potential* alternative: “The CCBWQA proposes that the TN and TP standards for Cherry Creek Reservoir be adopted with a delayed effective date of June 30, 2025. CCBWQA will commit to developing appropriate and protective site-specific nutrient standards utilizing its extensive dataset and supported by its linked watershed and reservoir models, *as needed*. At the June 2025 Regulation 38 Rulemaking Hearing, CCBWQA will propose these site-specific standards, *if appropriate*, and if at this time the WQCC decides to not adopt CCBWQA’s proposed site-specific standards, the table-value standards will become effective.”

Next Steps: CCBWQA’s legal counsel, Davis Graham & Stubbs, will submit a party status request to the WQCC on behalf of the CCBWQA by August 17th deadline. CCBWQA Staff (LRE & WWE) will review the WQCD’s PPHS (due August 2nd) and will work with CCBWQA’s legal counsel to develop a RPHS (due September 7th) to be brought to the CCBWQA TAC for discussion and the CCBWQA Board in August for approval based on direction from the TAC. Most of the technical analysis has already been developed in Attachment B. To supplement this analysis, CCBWQA will issue a work order to Hydros to conduct an initial evaluation of the Cherry Creek Reservoir data relative to the Tetra Tech/WQCD analysis process used to develop the WQCD’s proposed standards. This analysis will be used to initially assess whether the proposed standards are appropriate for Cherry Creek Reservoir.

ATTACHMENT

Attachment A - CCBWQA Correspondence and Engagement with WQCD, EPA, and CPW

On May 25th the WQCD hosted a meeting to discuss the topic of how the proposed criteria will be applied to Control Regulation Reservoirs. Representatives for Lake Dillon (CR71), Cherry Creek Reservoir (CR72) Chatfield Reservoir (CR73), and Bear Creek Reservoir (CR74) attended, as well as the EPA and CPW. The WQCD confirmed that the proposed TN and TP criteria will not be adopted for Bear Creek Reservoir or Dillon Reservoir during this RMH effort, as neither of these reservoirs have swim beaches nor direct use water supplies (these standards will be adopted in all other lakes and reservoirs in the state at a RMH in 2027). However, the WQCD did not yet know how they were going to proceed with Cherry Creek Reservoir or Chatfield Reservoir. The WQCD's goal for this meeting was to have an open discussion with representatives of Chatfield Reservoir and Cherry Creek Reservoir on the topic of adopting these criteria in the two reservoirs. Some potential proposals posed by the WQCD during this meeting included: 1) adoption of TN criteria only and 2) adoption of TN and TP criteria, with or without a delayed effective date.

At the June 2nd CCBWQA TAC meeting, CCBWQA Staff updated the TAC on the May 25th discussion with WQCD, CPW, EPA, and other Control Regulation Reservoir authorities, and the additional work that CCBWQA Staff had completed to date. This work included reviewing currently effective and publicly noticed individual wastewater discharge permits within the Basin for current and future nitrogen constituent limitations and related compliance schedules, and Control Regulation 85² Voluntary Incentive Program³ (VIP) Credits earned for both TN and TP. From this review, it was noted that the wastewater dischargers in the Basin are all currently making incremental progress to reduce nitrogen constituents in their effluent and that more stringent discharge permit limits for TN have been implemented in most of the permits. Therefore, nitrogen limitations are being implemented in the basin along with the stringent 0.05 mg/L TP discharge permit limits.

Additionally, the TAC briefly discussed how the Cherry Creek Reservoir experiences periods of nitrogen-limitation when cyanobacteria biovolume tends to increase. Nitrogen-to-phosphorus ratios are important and should be considered before implementing any new nutrient criteria in the Reservoir. Although no formal motion was passed by the TAC, no concerns were raised by TAC members when CCBWQA Staff indicated that they planned to further coordinate with both CPW and the WQCD before the WQCD's proposal due date of June 30th. CCBWQA Staff planned to present evidence for why adoption of these criteria at this time in Cherry Creek Reservoir is likely inappropriate and premature given that site-specific standards using the CCBWQA's linked watershed and reservoir models could be derived.

On June 15th CCBWQA Staff met privately with CPW to present Staff's analysis regarding why TN and TP standards are inappropriate for Cherry Creek at this time, as opposed to future site-specific standards based on long-term site-specific data and analysis. CPW indicated that they generally agreed with Staff's analysis and recommendations but would need to discuss further with their management before providing official support for CCBWQA's position.

At the June 16th Board meeting, Staff made a similar presentation regarding concerns about CWQCD's proposed criteria, and although there was no formal motion, there was no Board opposition to Staff's position and next steps.

On June 22nd CCBWQA Staff met with the WQCD, EPA, and CPW to further discuss the WQCD's intentions for Cherry Creek Reservoir at the November RMH before they formally submitted their proposal to the WQCC. CCBWQA on June 30th. At this meeting, Staff presented an updated version of the analysis that was presented to CPW on June 15th, including some additional information to address questions posed by CPW. Neither the WQCD nor the EPA expressed support for CCBWQA's position regarding delaying adoption of TN and TP standards in

² Control Regulation 85:

<https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=7393&fileName=5%20CCR%201002-85>

³ VIP: <https://cdphe.colorado.gov/nutrients-incentive-program>

Attachment A - CCBWQA Correspondence and Engagement with WQCD, EPA, and CPW

Cherry Creek Reservoir until site-specific standards could be developed. The WQCD stated that in 2017, at the start of the Water Quality 10-Year Roadmap⁴, the WQCC directed the WQCD to develop and adopt TN and TP standards in high priority (swim beaches and direct use water supplies) lake and reservoirs. For this reason, WQCD has included Cherry Creek Reservoir in its June 30th proposal due to Cherry Creek Reservoir having a swim beach.

On June 29th, the WQCD held a follow-up meeting with the representatives of the reservoirs that fall under Control Regulations 71 through 74. The WQCD indicated at this meeting that they intended to propose TN and TP standards for both Cherry Creek Reservoir and Chatfield Reservoir. Representatives of both Cherry Creek Reservoir and Chatfield Reservoir reiterated their concerns about this proposal, but the WQCD stated that their proposal was already drafted and would not change.

On June 30th the WQCD submitted its proposal to the WQCC with public notice on July 14, 2022. This notice includes a proposal to adopt both the warm lake TP and TN standards in Cherry Creek Reservoir. However, WQCD did recognize the potential for future site-specific standards in Cherry Creek Reservoir in its Statement of Basis and Purpose as follows:

4. **Control Regulations**

The commission may consider revised site-specific nutrients standards for the following lake and reservoir segments that have existing nutrient control regulations in future rulemaking hearings if information to support appropriate and protective revisions is developed:

Upper South Platte River: 6b (COSPUS06b; Chatfield Reservoir)

Cherry Creek: 2 (COSPCH02; Cherry Creek Reservoir)

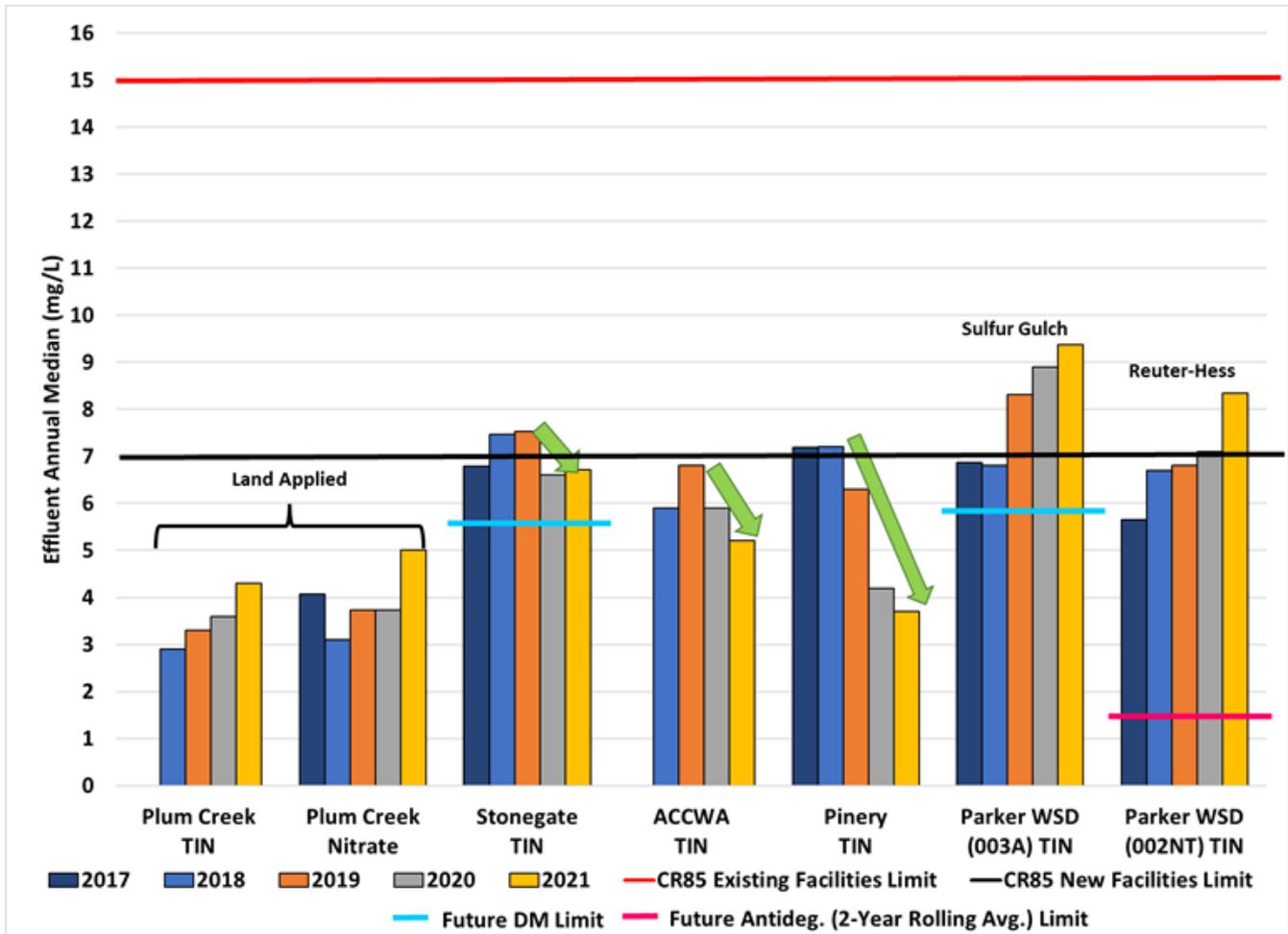
[This text is in development and will be included in Consolidated Proposal]

⁴ Water Quality 10-Year Roadmap: <https://cdphe.colorado.gov/water-quality-10-year-roadmap>

Attachment B - CCBWQA Staff's Analysis

and incremental progress is being made. This will continue to be the case, regardless of whether TN standards are adopted in November 2022 for the Cherry Creek Reservoir.

Figure B1. Annual Median TIN Concentrations in Cherry Creek Basin WWTF Discharges 2017-2021 vs. CR85 Limitations and Future Permit Limitations

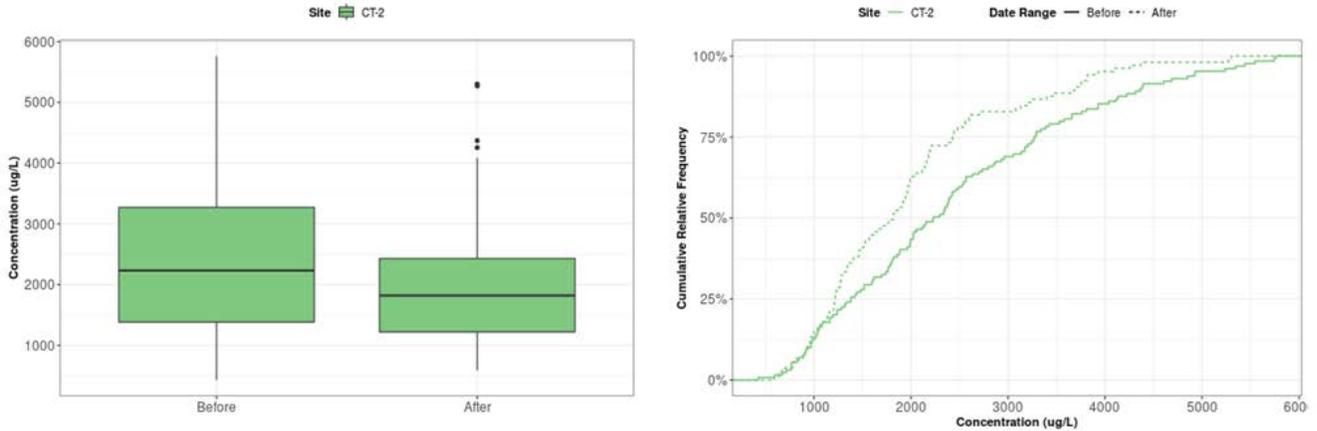


Incremental Progress in Streams: The CCBWQA has been actively working to reduce concentrations of TP in the Basin for many years through pollutant abatement projects. Incremental progress in reducing TP and TN concentrations in the Basin's streams can be seen when using LRE's PRF statistics tool. When comparing TN concentrations in Cottonwood Creek, the TN in was significantly lower during 2013-2021, when compared to 2002-2012. Similarly, TP concentrations in Cottonwood Creek and Cherry Creek were significantly lower during 2016-2021 when compared to 2009-2015.

CCBWQA's efforts to reduce nutrient loading to the Reservoir will continue regardless of whether TN and TP standards are adopted in November 2022 for the Cherry Creek Reservoir.

Attachment B - CCBWQA Staff's Analysis

Figure B2. TN Concentrations in Cottonwood Creek 2002-2012 vs. 2013-2021

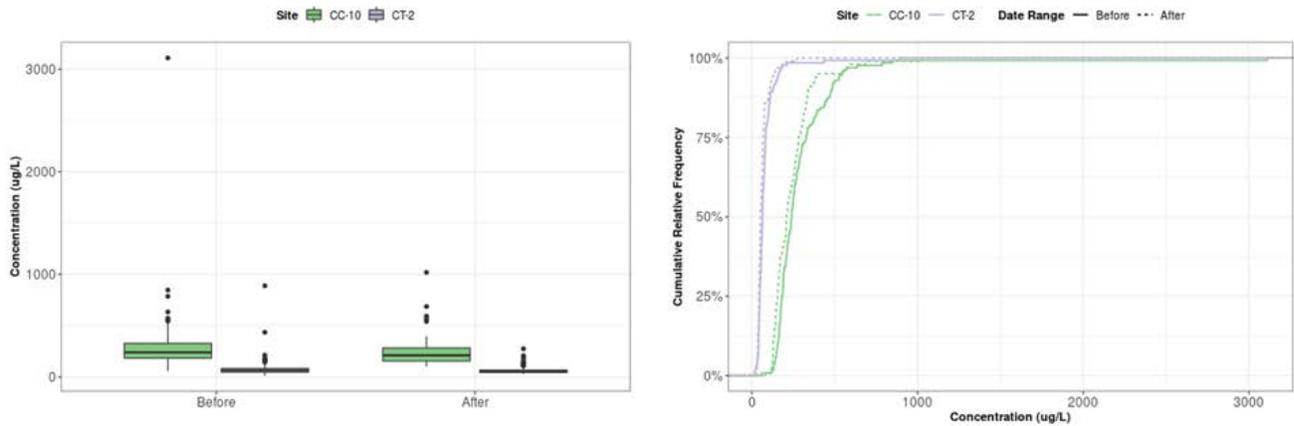


Summary Statistics: Unpaired Data

TN (ug/L)

Monitoring Location	Range	Sample Count	Median	Mean	Start Date	End Date
CT-2	Before	129	2231.00	2452.26	01/01/2002	12/31/2012
CT-2	After	105	1820.00	1977.53	01/01/2013	12/31/2021

Figure B3. TP Concentrations in Cottonwood Creek and Cherry Creek 2009-2015 vs. 2016-2021



Summary Statistics: Unpaired Data

TP (ug/L)

Monitoring Location	Range	Sample Count	Median	Mean	Start Date	End Date
CC-10	Before	128	240.00	297.78	01/01/2009	12/31/2015
CC-10	After	101	211.00	241.57	01/01/2016	12/31/2021
CT-2	Before	132	64.50	81.25	01/01/2009	12/31/2015
CT-2	After	98	53.00	64.35	01/01/2016	12/31/2021

Watershed and Reservoir Models: The CCBWQA has been actively working to develop and refine both a watershed model and a reservoir model. A framework is in place to link these models, and the reservoir modeling consultant has indicated that the models can be utilized to support development of site-specific TN and TP standards based on extensive watershed-specific data and dynamic reservoir conditions

Attachment B - CCBWQA Staff's Analysis

Background Concentrations: Background concentrations of N and P in Cherry Creek exceed the proposed TVSs. Cherry Creek in Castlewood Canyon, near the USGS Franktown site is the monitoring location furthest upstream in the watershed. This site is considered by the CCBWQA to represent background conditions due to limited development upstream. The data (collected in May & Nov) show that "background" TP concentrations exceed the proposed TP reservoir standard, and the background TN concentrations sometimes exceed the proposed TN reservoir standard. Background concentrations are important to recognize in terms of potential site-specific standards for the Cherry Creek Reservoir. In the figures below, the proposed lake and reservoir TN and TP TVSs are depicted as green horizontal lines.

Figure B4. TP Concentrations at USGS Franktown

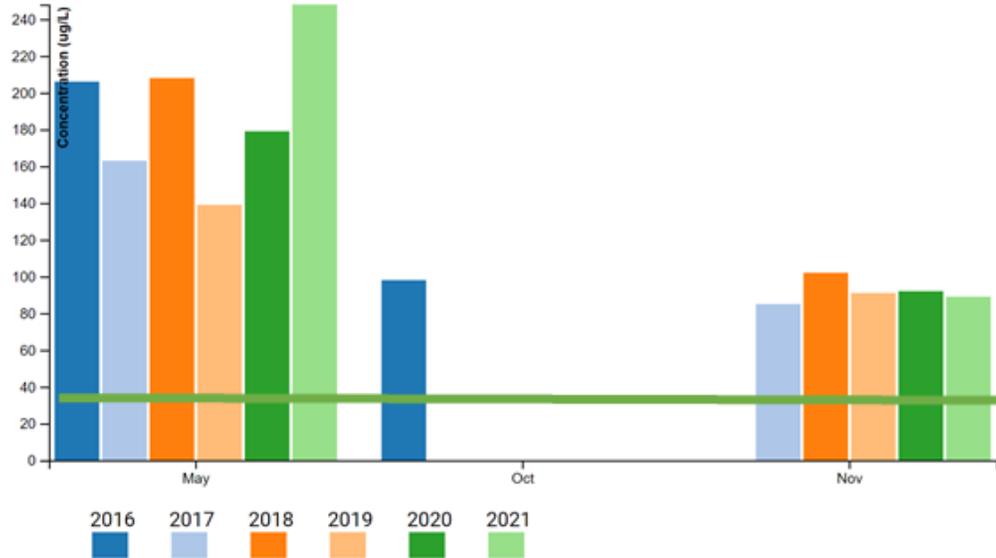
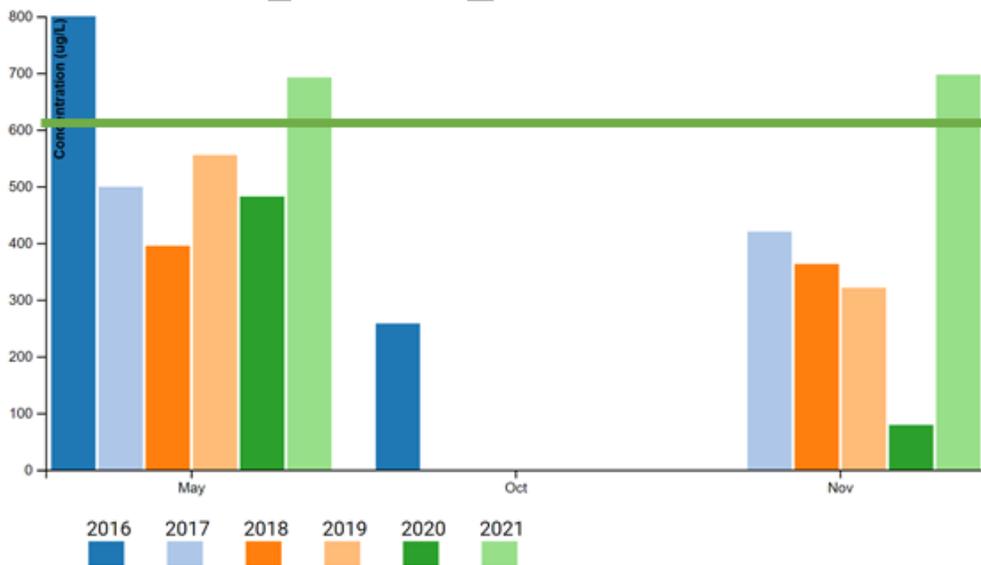


Figure B5. TN Concentrations at USGS Franktown



Statutory Concerns: Language in the CCBWQA's Statute could limit potential future proposals by CCBWQA to change the TN and TP TVSs to site-specific standards if the proposed standards are higher(perceived to be less stringent) and therefore perceived as not being "consistent with improving, protecting, and preserving water quality of Cherry Creek Reservoir." The CCBWQA Statute 25-8.5-111(2) states:

Attachment B - CCBWQA Staff's Analysis

“Nothing in subsection (1) of this section shall be construed as authorizing the authority to take any action or spend any moneys in a manner that is inconsistent with its statutory purpose to protect and preserve the water quality of Cherry Creek reservoir. Consistent therewith, the authority shall expend funds only pertaining to the water quality standards, control regulations, or similar regulations regarding the water quality of Cherry Creek and Cherry Creek reservoir if such expenditures are clearly consistent with improving, protecting, and preserving such water quality. The authority shall focus its efforts on improving, protecting, and preserving the water quality of Cherry Creek and Cherry Creek reservoir, and on achieving and maintaining the existing water quality standards.”

While Staff believe that having appropriate and protective standards for the reservoir (even if the values are higher than the TVSs) is consistent with the statute, we are concerned that the perception of inconsistency with the statute could still be an issue for the Board. For this reason, Staff believe that it would be to CCBWQA's benefit to propose appropriate site-specific standards in 2025 rather than change adopted standards that we believe are not appropriate for the reservoir at this time.

ATTACHMENT

Attachment C - Schedule

Table C1. 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 2 nd 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 – Motion for Rebuttal if needed
RPHS	September 7 th	Submit RPHS – CCBWQA stance and details to include in RPHS TBD
September Board	September 18 th	5 th discussion related to draft criteria at Board level – Motion for Rebuttal if needed
Rebuttal Statements	October 5 th	Submit Rebuttal Statement – TBD
October TAC	October 6 th	6 th discussion related to draft criteria at TAC level – Motion for RMH Presentation
October Board	October 20 th	6 th discussion related to draft criteria at Board level – Motion for RMH Presentation
Negotiation Cutoff	October 26 th	Participate in any last negotiations with WQCD, EPA, CPW - TBD
Consolidated Proposal	November 2 nd 3 rd	Review Consolidated Proposal
November TAC	November 3 rd	7 th discussion related to draft criteria at TAC level – Update on status
RMH	November 14 th	Participate at RMH
November Board	November 17 th	7 th discussion related to draft criteria at Board level – Update on outcome of RMH

**WATER QUALITY CONTROL COMMISSION
STATE OF COLORADO**

**RESPONSIVE PREHEARING STATEMENT OF CHERRY CREEK BASIN WATER
QUALITY AUTHORITY**

**IN THE MATTER OF PROPOSED ADOPTION OF REVISIONS TO THE
CLASSIFICATIONS AND NUMERIC STANDARDS FOR SOUTH PLATTE RIVER BASIN,
LARAMIE RIVER BASIN, REPUBLICAN RIVER BASIN, SMOKY HILL RIVER BASIN,
REGULATION #38 (5 CCR 1002-38)**

The Cherry Creek Basin Water Quality Authority (“CCBWQA” or the “Authority”), by and through its counsel, Davis Graham & Stubbs LLP, submits this Responsive Prehearing Statement (RPHS) for the above captioned matter to the Colorado Water Quality Control Commission (“Commission”).

I. Executive Summary

The CCBWQA opposes adoption of the Water Quality Control Division’s (“Division”) proposal to add table value standards for total phosphorus (TP) and total nitrogen (TN) to Cherry Creek Reservoir (COSPCH02) in November 2022. The Reservoir already has a more stringent site-specific chlorophyll-a standard of 18 ug/L in Regulation 38, stringent TP limits (0.05 ug/L) for dischargers in Regulation 72, robust requirements for stormwater management in Regulation 72 and active nonpoint source pollution abatement projects underway. The CCBWQA has collected long-term data suitable for development of site-specific nutrient standards.

The CCBWQA respectfully requests that the Commission consider and adopt a delayed effective date of [TBD], 2025, for warm lake TP and TN table value standards in Cherry Creek Reservoir (COSPCH02), to allow time for the CCBWQA to utilize its extensive long-term data, supported by linked watershed and reservoir models if needed, to develop appropriate and protective site-specific standards for the Cherry Creek Reservoir.

II. Background on the CCBWQA and the Reservoir

In 1985, the CCBWQA was initially formed by an intergovernmental agreement between local entities within the Cherry Creek basin. In 1988, Colorado enacted legislation to both create and empower the CCBWQA as a quasi-municipal corporation and political subdivision of the State of Colorado. C.R.S. § 25-8.5-101 *et seq.* Under that statute, the CCBWQA’s Board currently consists of representatives of two counties, six cities and towns, one special district, and seven public, non-affiliated representatives appointed by the Governor, specifically: (1) Arapahoe County; (2) Douglas County; (3) City of Aurora; (4) City of Greenwood Village; (5) Town of Castle Rock; (6) Town of

Parker; (7) City of Lone Tree; (8) City of Centennial; (9) City of Castle Pines; (10) one representative of the seven special districts within the basin, and (11) seven Governor appointees, for a total of seventeen members.

The Colorado Legislature created the CCBWQA to, among other things, protect water quality in the Cherry Creek basin and Cherry Creek Reservoir¹ for recreation, fisheries, water supplies, and other beneficial uses. C.R.S. § 25-8.5-101. The CCBWQA is uniquely authorized and directed by Colorado statute to protect and preserve water quality in the Cherry Creek basin and the Cherry Creek Reservoir and to plan and coordinate efforts of the various entities within the watershed to achieve those goals. C.R.S. § 25-8.5-101, 111.

In 1985, the Commission established Regulation No. 72, the Cherry Creek Reservoir Control Regulation, to implement phosphorus and chlorophyll-*a* targets that had been adopted in Regulation 38. *See* 5 CCR 1002-72, at 72.15. Regulation No. 72 is based on a state/local partnership for controlling total phosphorus and further provides a basis for actions to protect the Cherry Creek Reservoir's water quality. The Commission originally set an annual total phosphorus loading limit of 14,270 pounds under that same Control Regulation, which was intended to equate to the Cherry Creek Reservoir's growing season average total phosphorus concentration standard of 35 µg/L and chlorophyll *a* concentration of 15 µg/L. *Id.* In a 2009 rulemaking, the Commission adopted changes to Regulation No. 72 to, among other things, remove all annual total phosphorus load-related components from the regulation and establish a three-tiered stormwater system for development and redevelopment within the basin. *Id.* at 72.27. In a 2012 rulemaking, the Commission adopted changes to clarify specific areas that are covered by stormwater requirements and provide consistency between State and Federal stormwater requirements. *Id.* at 72.28. In 2022, the Commission adopted extensive changes to section 72.7 at a limited scope rulemaking to make the section more user-friendly, and to bring the stormwater provisions up-to-date with current practices.

Although the Cherry Creek Basin has experienced substantial growth during the past 35 years, the CCBWQA and its partners have worked diligently to preserve, protect, and improve the Cherry Creek Reservoir's water quality and beneficial uses. The CCBWQA, its member agencies, and partners have improved wastewater treatment and upgraded associated technologies, installed nonpoint source and regulated stormwater controls, and utilized CCBWQA's land use referral agency responsibilities to control phosphorus in the inflow to the Cherry Creek Reservoir. In Regulation 38.72, the Commission states:

The evidence indicates that although the Cherry Creek Basin has experienced unprecedented growth during the past 20 years, the Authority and its partners have succeeded in implementing nutrient controls to help maintain the Reservoir's water quality. The Commission acknowledges that the Authority, its member agencies, and partners have improved wastewater treatment and have installed best available technology, installed nonpoint source controls, and utilized its land use agency responsibilities to control phosphorus in the watershed and inflow to the Reservoir.

Despite significant progress in reducing nutrient concentrations, Cherry Creek Reservoir is listed on Colorado 303(d) List as impaired due to exceedance of its site-specific chlorophyll-*a* standard of 18 µg/L. The reservoir can also experience algal blooms. The CCBWQA has invested in robust

¹ The CCBWQA does not, however, own or operate the Cherry Creek Reservoir; the U.S. Corps of Engineers ("USACE") does. The USACE impounded Cherry Creek in 1950 to protect the City and County of Denver from flash floods that might originate within the creek's 385 square mile drainage basin.

long-term monitoring to better understand conditions in the Reservoir and has recently used these data to develop linked watershed and reservoir models to help prioritize additional nutrient controls in the watershed. This work has recently been reinvigorated following COVID-19-related delays and organizational changes at the CCBWQA.

Development of appropriate and protective chlorophyll-a and nutrient standards has been a long-term challenge for the CCBWQA and the Commission, as described in previous Statements of Basis and Purpose (38.18, 38.56, 38.72). In these Statements of Basis and Purpose, the Commission repeatedly recognizes the challenges and unique conditions present in Cherry Creek Reservoir.

III. SUMMARY OF CONCERNS WITH THE ADOPTION OF TVS FOR TP & TN IN NOVEMBER 2022

This RPHS describes the reasons that the CCBWQA requests a delayed effective date for the Division's table value standards so that the CCBWQA has time to propose appropriate site-specific standards at the June 2025 Regulation 38 rulemaking hearing. These reasons, which are described further in this RPHS, are briefly summarized as follows:

1. The Cherry Creek Reservoir and watershed are unique and complex systems that are not appropriately represented by the stressor-response relationships in the proposed Table Value Standards.
2. Significant nutrient controls and reductions for point sources are actively occurring in the basin under Control Regulation 72.
3. Advanced stormwater and nonpoint source controls are being implemented in the Basin under Control Regulation 72.
4. The CCBWQA is actively working towards site-specific standards and better understanding watershed nutrient loading and reservoir dynamics.
5. Unique statutory constraints exist for CCBWQA that constrain some types of participation in standards revisions.

Additional discussion of these themes is provided below.

- 1. The Cherry Creek Reservoir and Watershed are unique and complex systems that are not appropriately represented by the stressor-response relationships in the Division's proposed Table Value Standards.**

Cherry Creek Reservoir's chlorophyll-a standard of 18 µg/L is a site-specific standard; therefore, if adopted, TN and TP standards should also be site-specific using a methodology appropriate for the unique conditions present in the reservoir and the watershed. [Pending Analysis to Confirm Statement] Independent review by Hydros Consulting, Inc. of the Table Value Standards method proposed by the Division shows that the proposed approach is not appropriate for the Reservoir. Additionally, other site-specific issues related to development of appropriate standards for the reservoir include: 1) naturally elevated total phosphorus concentrations in the watershed and 2) nitrogen-limited conditions that affect the approach to controlling the causal variables (TN and TP) in the context of standards. Each of these issues is discussed further below.

[Pending Analysis to Confirm Statement] Independent Review of the Cherry Creek Data Set Using the Division’s Model for the Table Value Standards Shows Lack of Meaningful Relationships between Causal and Response Variables

Review in Progress—text and figures anticipated from Hydros will be added here.

Background Concentrations of TP

Naturally elevated TP conditions have been well documented for decades in the Cherry Creek Reservoir basin. Average TP concentrations in alluvial groundwater are approximately 200 ug/L. Cherry Creek in Castlewood Canyon, near the USGS Franktown site, is the monitoring location furthest upstream in the Cherry Creek Basin and is considered by CCBWQA to represent background conditions due to limited development upstream of this site. Historical instream TP concentrations at this site averaged 182 ug/L from 1992-2021 (Figure 1), which significantly exceeds the proposed reservoir TP standard.

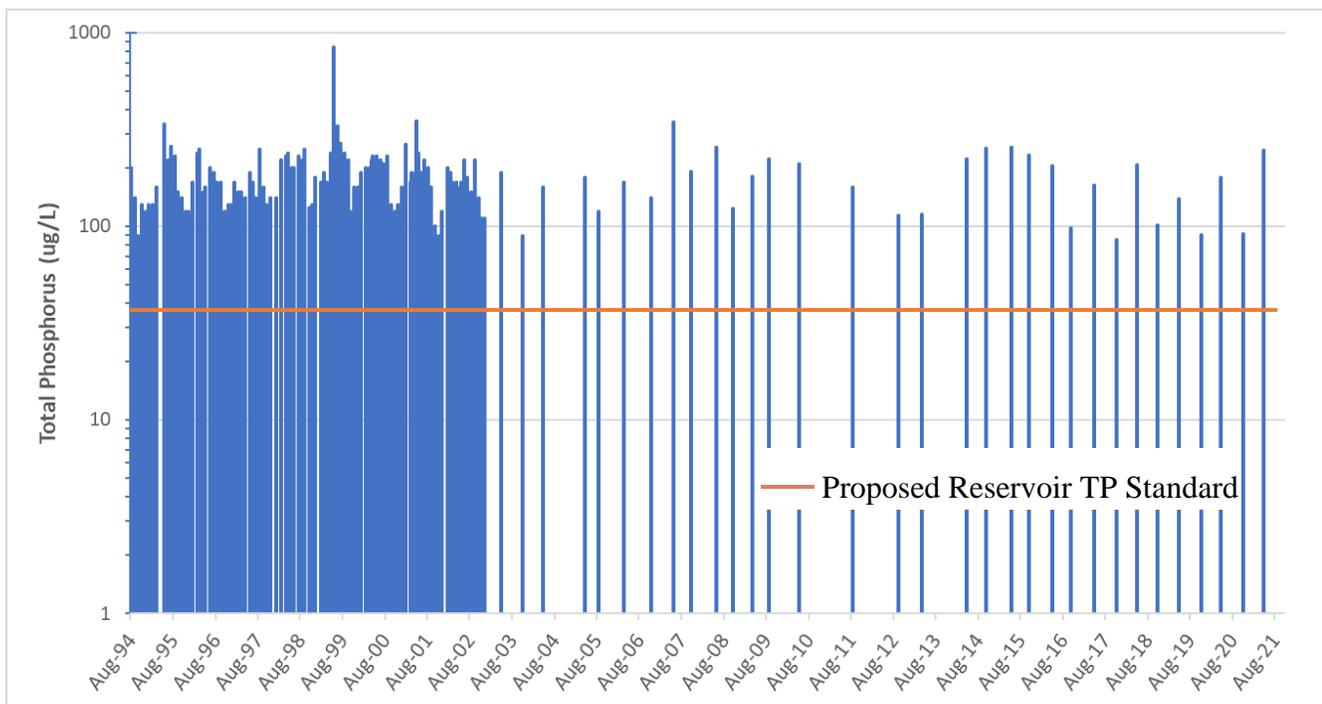


Figure 1. Historical TP Concentrations in Cherry Creek at USGS Franktown

Additionally, in the 2015 Regulation 38 Rulemaking Hearing, the Division and Commission acknowledge the elevated background concentrations in the context of stream segments tributary to the Reservoir:

The Cherry Creek Basin Water Quality Authority (CCBWQA) submitted data in its responsive statement showing that background phosphorus levels exceed TVS. The Division concurs with this finding, which also has been documented in previous hearings related to Watershed Control Regulation No. 72. A background concentration has been established to support estimation of phosphorus loads to Cherry Creek Reservoir, but it is not yet known if that concentration should be applied uniformly as a stream standard throughout the basin.

[...]

Site-specific standards are needed for all, or part, of the segments for which phosphorus standards have been proposed, but there is uncertainty about the habitat type or the geographic scope of applicability for site-specific standards (or conversely for the TVS).

Nitrogen Limitation

Long-term monitoring data and studies over several decades document nitrogen limitation in the reservoir, with low nitrogen to phosphorus (N:P) ratios present in Cherry Creek Reservoir. This is an important consideration when co-regulating nitrogen and phosphorus. Studies by Lewis, Saunders and McCutchan (2004) and Lewis, McCutchan and Saunders (2005) document this predominantly nitrogen-limited condition. For example, Lewis, McCutchan and Saunders (2005) state (with emphasis added):

In early 2004, a report was released on phytoplankton nutrient responses in Cherry Creek Reservoir (Lewis, Saunders, and McCutchan 2004). The purpose of this study was to determine the degree to which the phytoplankton in Cherry Creek Reservoir are limited by deficiencies of phosphorus or nitrogen, and to project the amount of phosphorus control that would be necessary to establish a continuous suppression of phytoplankton biomass in Cherry Creek Reservoir. The results showed that the phytoplankton populations of Cherry Creek Reservoir are strongly limited by nitrogen deficiency throughout the summer. Nitrogen deficiency encourages the growth of nitrogen-fixing bluegreen algae. This explains the tendency of bluegreen algae to dominate the phytoplankton, particularly during the latter parts of the growing season when nutrient deficiency is particularly acute. Nitrogen-fixing bluegreen algae commonly cause a water-quality nuisance. (pp.18-19)

Most lakes show a much less extreme ratio of nitrogen to phosphorus than Cherry Creek Reservoir. In many lakes, the two nutrients are more nearly matched in their potential to control phytoplankton biomass. (p. 19)

Because inorganic nitrogen passing through the groundwater system shows pronounced loss of nitrogen through denitrification, the entry of seepage water contributes to a bias in the N/P ratio favoring phosphorus. This is part of the explanation for Cherry Creek Reservoir's low N/P ratio, which favors the development of nitrogen fixing bluegreen algae. (p. 3)

Cyanobacteria are not nitrogen-limited and are able to outcompete other algae by fixing nitrogen from the atmosphere. During periods of nitrogen-limitation, Cherry Creek Reservoir experiences cyanobacteria blooms when they outcompete other algae. Total inorganic nitrogen (TIN), the form most readily available for uptake by algae, is consistently limited in the Cherry Creek Reservoir during the summer months and during periods of severe blooms. Other forms of nitrogen (dissolved and total) can be limited as well. Data from the CCBWQA's extensive database show ratios of TIN to SRP (soluble reactive phosphorus, the phosphorus form most readily available to support algal growth) indicating that Cherry Creek Reservoir has been nitrogen-limited since at least the 1990s. Microscopic analysis of cyanobacteria responsible for the significant blooms in 2016-2021 by Phycotech, Inc. demonstrated the presence of heterocysts, which are differentiated cells formed by cyanobacteria specialized for N-fixation.

Table 1 lists the cyanobacteria blooms monitored and tested by Colorado Parks and Wildlife (CPW) and identifies whether the reservoir was experiencing nitrogen limitation (of one or multiple forms) at that time. As such, the N:P ratios are important to consider when developing standards. Until phosphorus concentrations are significantly controlled, reducing nitrogen levels in the watershed to meet the TN standard as proposed by the Division could have an unintended consequence of further exacerbating conditions favorable to cyanobacteria.

Table 1. Cyanobacteria Blooms at Cherry Creek Reservoir and Nitrogen-Limitation Status

Year	Bloom*	Toxin*	Closure*	Nitrogen Limitation
2014	Yes - Severe	Yes	Yes	Yes
2015	Yes - Moderate	–	Caution	Yes
2016	Yes - Severe	Yes	Yes	Yes
2017	–	–	–	Yes
2018	Yes - Mild	–	–	Yes
2019	Yes - Moderate	–	Caution	Yes
2020	Yes - Severe	Yes	Yes - Extended	Yes
2021	–	–	–	Yes
2022	Yes - (May)	Yes	Warning/Caution	Yes

* – Indicates No or ND (not detected)

2. Significant nutrient controls and reductions for point sources are occurring in the Basin.

Because Cherry Creek Reservoir is regulated under a Basin Control Regulation, it already has stringent requirements in place to significantly reduce phosphorus, and wastewater dischargers in the basin are making progress to reduce nitrogen under the Regulation 85 voluntary incentive program and more stringent nitrogen permit limits. These efforts are underway regardless of a 2022 adoption of TN and TP standards for the reservoir.

Existing TP Limitations Under Control Regulation 72

TP limitations for wastewater treatment facilities (WWTFs) in the Cherry Creek Basin are the lowest in the State, at 0.05 mg/L, as established in Regulation 72. For reference, the TP limits as defined in Control Regulation 85 for existing dischargers are 1 mg/L (annual median) and 2.5 mg/L (95th percentile), and for “new” dischargers are 0.7 mg/L (annual median) and 1.75 mg/L (95th percentile). There are five individual wastewater discharges in the Cherry Creek Basin and all five are meeting the 0.05 mg/L effluent limitation for TP. These Control Regulation 72 limitations apply regardless of adoption of TP standards in Cherry Creek Reservoir as part of this rulemaking.

Four of the five facilities are signed up for the Control Regulation 85 Policy 17-1 Voluntary Incentive Program (Table 2), and three have earned up to four years of credit to-date.

Table 2. Cherry Creek Basin Individual Wastewater Dischargers – Total Phosphorus Limitations

Entity Name	CDPS Permit No.	Expiration Date	Discharge Limits		Compliance Schedules	VIP Credits Earned to Date (Years)
			Flow (MGD)	Phosphorus (mg/L)		
			30-Day Average	30-Day Average		
Plum Creek	CO0038547	10/31/2017	6.44	0.05	--	4
Stonegate	CO0040291	10/31/2016	1.1	0.05	--	N/A
		Public Notice	1.1	0.05	--	
ACWWA	CO0040681	1/31/2018	3.6	0.05	--	4
Pinery	CO0041092	10/31/2016	2	0.05	--	3.9
		Public Notice	2	0.05	--	
Parker WSD	CO0046507	1/31/2017	4	0.05	--	TBD
		Public Noticed	002A: 6	0.05	--	
			003A: 6	0.05		
			004A: 6	0.05		

Incremental Nitrogen Reduction Progress at WWTFs

All dischargers in the Cherry Creek Basin are currently discharging total inorganic nitrogen (TIN) concentrations below the Control Regulation 85 TIN limits for “existing” dischargers of 15 mg/L (annual median) and 20 mg/L (95th percentile), and almost all of the dischargers are discharging below the Control Regulation 85 TIN limits for “new” dischargers of 7 mg/L (annual median) and 14 mg/L (95th percentile), as well. Parker and Stonegate Village Metropolitan District (Stonegate) currently have draft permit renewals that include TIN limits that are lower than the Control Regulation 85 limits (Table 3 and Figure 1, below). Stonegate, Arapahoe County Water and Wastewater Authority (ACWWA), and Pinery Water and Wastewater District (Pinery) have all demonstrated a downstream trend in annual median TIN discharge concentrations over the last few years, with additional reductions anticipated at Stonegate to achieve its anticipated future TIN limitations.

Parker Water and Sanitation District (PWSD) has recently completed construction implementing various improvements as well. During construction, temporary increases in TIN occurred over the last three years as treatment capacity was stretched. PWSD also made some changes to their process control to improve the denitrification during the construction. Now that the construction is complete and the capacities have been increased, PWSD anticipates the TIN numbers will go down.

Four of the five WWTFs are involved in the Control Regulation 85 Policy 17-1 Voluntary Incentive Program (Table 3), and three have begun earning VIP credits for reductions in TIN and TP. In summary, progress in reducing nitrogen at the individual WWTF discharges in the Cherry Creek Basin is actively occurring and incremental progress is being made. This will continue to be the case, regardless of whether TN standards are adopted in November 2022 for the Cherry Creek Reservoir.

Table 3. Cherry Creek Basin Individual Wastewater Dischargers – Nitrogen Limitations

Entity Name	CDPS Permit No.	Expiration Date	Discharge Limits				Compliance Schedules	VIP Credits Earned (Years)
			Flow (MGD)	TIN (mg/L)		Nitrate (mg/L)		
			30-Day Average	Daily Max	2-Year Rolling	Daily Max		
Plum Creek	CO0038547	10/31/2017	6.44	--	--	10	--	7.66
Stonegate	CO0040291	10/31/2016	1.1	10	--	--	--	N/A
		Public Notice	1.1	10 --> 5.6	--	--	TIN (due 12/31/26)	
ACWWA	CO0040681	1/31/2018	3.6	--	--	--	--	6
Pinery	CO0041092	10/31/2016	2	10	--	--	--	8
		Public Notice	2	10 --> 9	--	--	TIN (due 12/31/26)	
Parker WSD	CO0046507	1/31/2017	4	10	--	--	--	TBD
		Public Notice	002A: 6	10 --> 5.8	--	--	TIN and Nitrite (due 12/31/26)	
			003A: 6	10 --> 5.8	--	--		
		004A: 6	10	Rep.-->1.5	--			

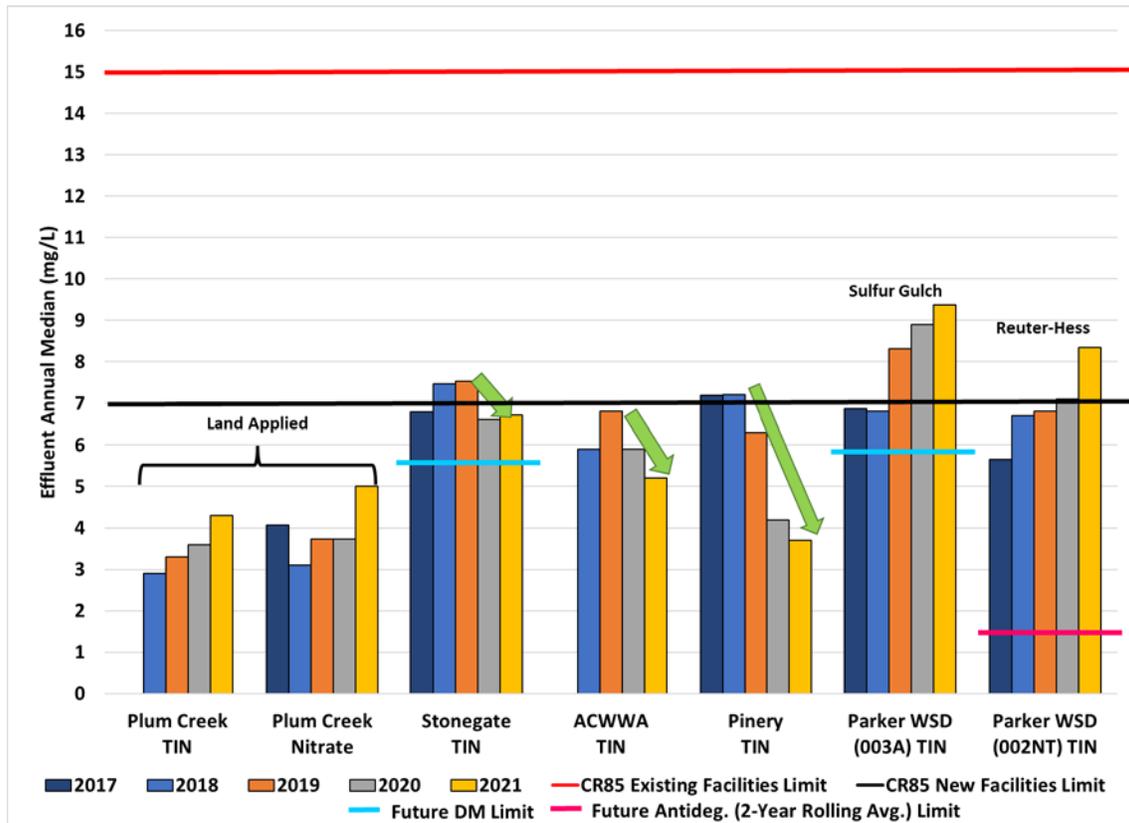


Figure 1. Annual Median TIN Concentrations in Cherry Creek Basin WWTF Discharges 2017-2021 vs. CR85 Limitations and Future Permit Limitations

3. Advanced stormwater and nonpoint source controls are being implemented in the Basin under Control Regulation 72.

Section 72.7 of Regulation 72 established a stormwater regulatory framework within the Basin that is more advanced and protective than the rest of Colorado. Incremental nutrient reduction in streams is occurring due to a combination of WWTF controls and watershed pollution abatement projects.

The CCBWQA 2022 10-year Capital Improvement Plan budgets \$18.92M for pollutant abatement projects (PAPs) through 2031. In 2021, CCBWQA contributed over \$1.96M towards pollution reduction facilities and pollution abatement projects in the watershed. In 2020, CCBWQA contributed over \$670,100 towards the restoration of streams in the basin. In 2019, CCBWQA contributed over \$585,000 towards restoration of almost 4,100 lineal feet of streams in the basin.

Incremental Progress in Streams

The CCBWQA has actively been working to reduce concentrations of TP in the Basin for decades through pollutant abatement projects in Cherry Creek, Cottonwood Creek, and smaller tributaries in the Basin.

Evaluation of changes to TP and TN concentrations in the Basin's streams can be seen when using the CCBWQA's PRF statistics tool. One example is evaluating the effectiveness of TN and TP removal in Cottonwood Creek prior to and after sediment removal maintenance in the Perimeter Pond (Cottonwood Wetlands) located in Cherry Creek State Park. The median TN and TP were significantly lower after 2012 sediment removal during 2013-2021 (1,690 ug/L TN and 58 ug/L TP), when compared to 2002-2012 prior to project completion (1,991 ug/L TN and 78 ug/L TP) (Figures 2 and 3).

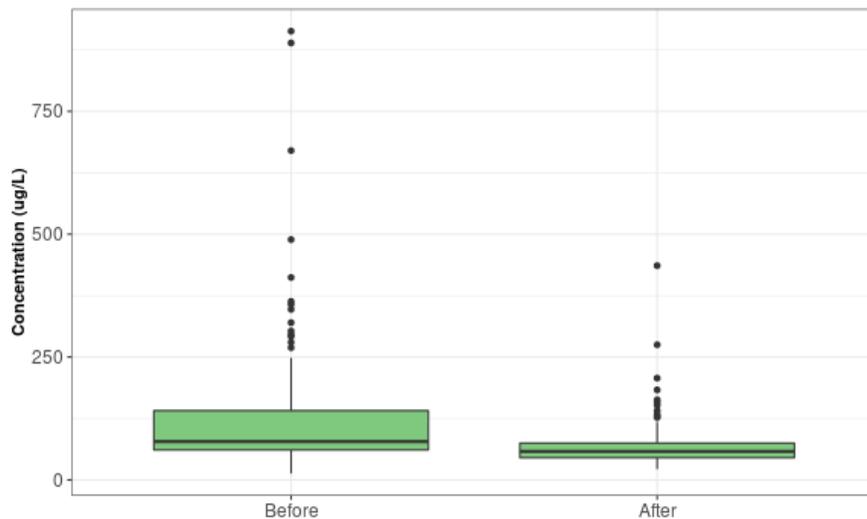


Figure 2. Cottonwood Creek TP Concentration Comparison of 2002-2012 (Before) vs. 2013-2021 (After)

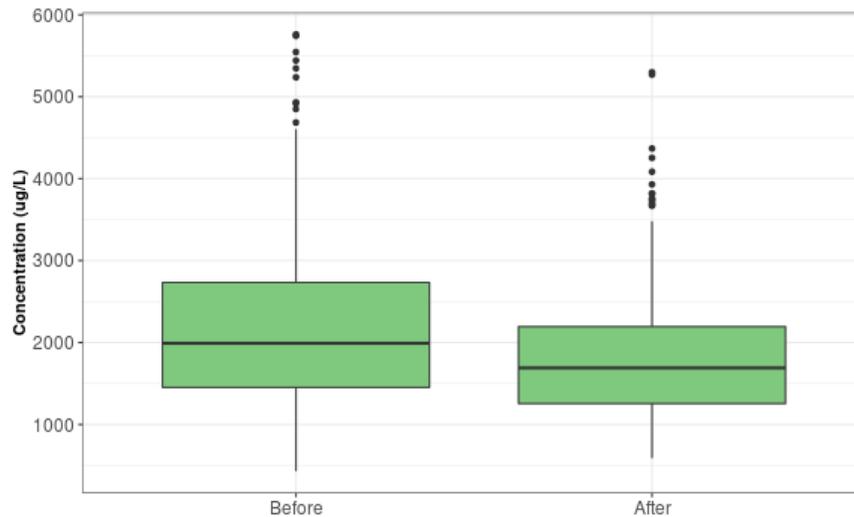


Figure 3. Cottonwood Creek TN Concentration Comparison of 2002-2012 (Before) vs. 2013-2021 (After)

When comparing concentrations in Cherry Creek during the same time periods, the median concentrations of TP remained relatively consistent: 237 ug/L TP during 2002-2012 and 216 ug/L during 2013-2021. The median TN was slightly less from 2013-2021 (1,080 ug/L) when compared to 2002-2012 (1,230 ug/L). Although Cherry Creek did not show nutrient reductions comparable to Cottonwood Creek, it is noteworthy that increases did not occur despite substantial development in the basin.

The CCBWQA’s efforts to reduce nutrient loading to Cherry Creek Reservoir will continue regardless of whether TN and TP standards are adopted in November 2022. However, implementing TP and TN standards prematurely could result in the CCBWQA diverting time and resources from other planned projects.

4. The CCBWQA is Actively Working Towards Site-specific Standards and Better Understanding Watershed Nutrient Loading and Reservoir Dynamics.

Several factors have affected CCBWQA’s progress related to development of site-specific standards over the past several years, including organizational changes, delays related to COVID-19, and uncertainty about the numeric standards that would be proposed by the Division. Nonetheless, as evidenced by the draft Regulation 38 Statement of Basis and Purpose in the noticed proposal for Rueter Hess Reservoir, the Commission did not want site-specific standards proposals brought forward at this particular rulemaking:

Cherry Creek Segment 7 (COSPCH07): The commission continues to support a phased implementation approach to adoption of nutrient criteria and declined to consider any site-specific standards during this rulemaking.

For these reasons, and the other reasons aforementioned, the CCBWQA is asking the Commission to adopt a delayed effective date for the TN and TP standards proposed by the Division for Cherry Creek Reservoir (COSPCH02) of [TBD], 2025, to allow the CCBWQA time to develop site-specific standards.

The CCBWQA has also been actively working to develop and refine both a watershed model and a reservoir model. A framework is in place to link these models and incorporate recent watershed model updates. At this time, development of site-specific standards is expected to be data-focused; however, the linked models are important because they help to prioritize actions that will provide the greatest reduction of nutrient loading to the Reservoir and anticipated Reservoir response.

Recent modeling has shown that watershed sources account for 85% of TP (Figure 4, left) and 67% of TN (Figure 4, right) loading to the reservoir. Of this, 49% of TP and 53% of TN loading is from development and 36% of TP and 14% of TN loading is from other parts of the natural watershed. Point source dischargers (WWTFs) only contribute 2.2% of the total phosphorus load that enters the Reservoir. As discussed above, the WWTFs in the Basin must meet a discharge permit limit of 0.05 mg/L TP, the strictest in the State. Given these already stringent limits, further reduction of TP loads from point sources is unlikely, since they already contribute very little of the TP load entering the Reservoir.

Recent upgrades and progress in reducing nitrogen in WWTF effluent through compliance plans are not fully reflected in the baseline TN pie chart; therefore, the TN load percentage attributed to point sources is expected to be reduced as progress is made under compliance plans in recently renewed discharge permits. Although the TN graph (Figure 4, right, below) suggests that further TN reduction by WWTFs may be feasible in the basin, this does not necessarily translate to a corresponding improvement in the reservoir conditions due to the predominantly nitrogen-limited condition of the reservoir giving cyanobacteria with atmospheric nitrogen-fixing abilities a competitive advantage.

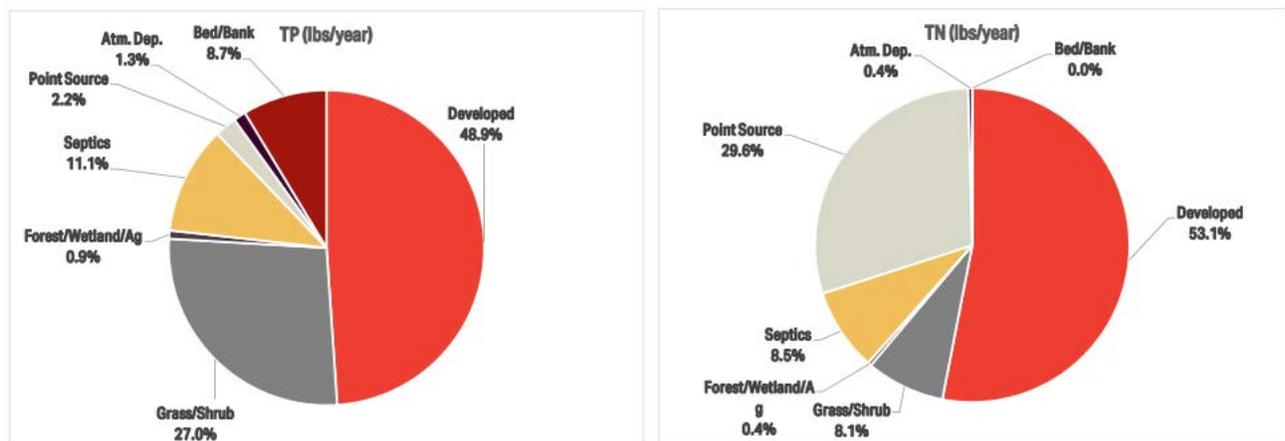


Figure 4. Percent Phosphorus (left) and Nitrogen (right) Loads Contributions from the Calibrated HSPF Model Application (Source: RESPEC 2018)

5. Unique Statutory Constraints Affecting the Ability to Change Standards

Language in the CCBWQA’s Statute could limit potential future proposals to change the TN and TP table-value standards to site-specific standards if the to-be-developed site-specific standards are higher than the currently proposed table-value standards (perceived to be less stringent) and therefore perceived as not being “consistent with improving, protecting, and preserving water quality of Cherry Creek Reservoir.” The CCBWQA Statute 25-8.5-111(2) states:

“Nothing in subsection (1) of this section shall be construed as authorizing the authority to take any action or spend any moneys in a manner that is inconsistent with its statutory purpose to protect and preserve the water quality of Cherry Creek reservoir. Consistent therewith, the authority shall expend funds only pertaining to the water quality standards, control regulations, or similar regulations regarding the water quality of Cherry Creek and Cherry Creek reservoir if such expenditures are clearly consistent with improving, protecting, and preserving such water quality. The authority shall focus its efforts on improving, protecting, and preserving the water quality of Cherry Creek and Cherry Creek reservoir, and on achieving and maintaining the existing water quality standards.”

While the CCBWQA believes that having appropriate and protective standards for Cherry Creek Reservoir (even if the values are higher than the Division’s proposed table-value standards) is consistent with the statute, the CCBWQA is concerned that the perception of inconsistency with the statute could hamper development of more appropriate site-specific standards. For this reason, the CCBWQA believes that it would be better to propose appropriate site-specific standards in 2025 rather than change standards adopted in 2022 that the CCBWQA believes are not appropriate for Cherry Creek Reservoir at this time.

IV. SUMMARY

Cherry Creek Reservoir is unique relative to other warm water lakes and reservoirs in Colorado as described in this RPHS; therefore, adoption of the Division’s proposed table value standards is not appropriate at this time. Consistent with the CCBWQA’s mission to protect and improve water quality in Cherry Creek Reservoir, the CCBWQA supports development of protective and appropriate site-specific standards by June 2025.

Based on the foregoing, the CCBWQA respectfully requests that the Commission adopt a delayed effective date for TP and TN table value standards for Cherry Creek Reservoir (COSPCH02) of [TBD], 2025, and adopt the Statement of Basis and Purpose language proposed in the CCBWQA’s attached Exhibit 1. As described in the Statement of Basis and Purpose, the CCBWQA plans to submit alternative site-specific nutrient standards for Cherry Creek Reservoir at the June 2025 Regulation 38 Rulemaking Hearing. In the event that the CCBWQA is unable to submit appropriate and protective site-specific standards, then the table value standards will become effective.

As requested, a delayed effective date allows the CCBWQA to focus on its substantial on-going efforts to improve and protect the reservoir while site-specific standards are being developed. During this time period, the following substantive actions will continue to occur:

- Analysis of long-term, site-specific data for the purpose of developing an appropriate and protective site-specific standard.
- Active and collaborative participation in multi-million-dollar stream reclamation and pollution abatement projects with partners such as MHFD, SEMSWA, CPW, and local governments.
- Review of land use referrals from local governments in the basin to ensure that new development and redevelopment projects include provisions for appropriate construction and post-construction stormwater control measures in accordance with the stringent requirements in place in Regulation 72.

- Maintenance of pollutant abatement projects and pollutant reduction facilities in Cherry Creek State Park.
- Active use of linked watershed and reservoir models to identify and prioritize actions to reduce nutrient loading to the reservoir as well as evaluate in-lake management strategies that may be part of an overall management plan for the Reservoir.
- Continued long-term monitoring of the Reservoir and its tributaries.

V. WITNESSES

The CCBWQA’s witnesses may include the following:

Jane Clary, CCBWQA Technical Manager, Wright Water Engineers, Inc.
 Christine Hawley, Hydros Consultants
 Jessica DiToro, LRE Water, Inc.
 Erin Stewart, LRE Water, Inc.
 Bill Ruzzo, CCBWQA Board of Directors
 G. Chris Holdren, Independent Contractor
 Andrea Bronson, Davis Graham & Stubbs, LLP

VI. EXHIBITS

The CCBWQA’s exhibits include the following:

Exhibit 1: Proposed Statement of Basis and Purpose
 Exhibit 2: Redlines to Segment COSPCH02 Regulation 38 Table

VI. RESERVATIONS

The CCBWQA reserves the right to present testimony, witnesses, and exhibits for purposes of the rebuttal statement and at the hearing, to use demonstrative aids at the hearing that contain information provided in any exhibits and testimony supplied by the CCBWQA, to present alternative language to the proposed revisions to Regulation No. 38, to respond to alternate proposals submitted by any party, and to address future changes to any alternate proposals of any party.

Respectfully submitted this 7th day of September 2022.

Davis Graham & Stubbs LLP

By:

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3. Site-specific Standards for Nutrients

Cherry Creek Segment 2 (COSPCH02): The commission continues to support a phased implementation approach to adoption of nutrient criteria and declined to consider any site-specific standards during this rulemaking. However, evidence on the record attests that consideration of site-specific standards on some segments may be warranted in future commission reviews of water quality standards and classifications. The Cherry Creek Basin Water Quality Authority (CCBWQA) submitted an analysis indicating that site-specific standards may be appropriate to protect the Public Swim Beach use for Cherry Creek Reservoir (COSPCH02) based on the fact that a site-specific standard is already in place for chlorophyll-*a*, the uniqueness of the Reservoir, demonstration of incremental progress at reducing TN and TP concentrations entering the Reservoir, and concerns with nitrogen-limitation in the Cherry Creek Reservoir. CCBWQA is committed to developing site-specific TP and TN standards by the June 2025 Regulation 38 Triennial Rulemaking Hearings. If at this time the Commission does not adopt site-specific standards in COSPCH02, the table-value standards will apply.

The commission appreciates the efforts of CCBWQA to obtain, and make available for this hearing, data that improve the understanding of existing conditions and uniqueness that is the Cherry Creek Basin and Cherry Creek Reservoir. The division is committed to supporting CCBWQA's efforts to develop appropriate site-specific standards for Cherry Creek Reservoir as resources become available and practical implications are considered. The division's efforts to support the development of a site-specific standard will include coordination of interdisciplinary staff from across the division, including drinking water, engineering, and water quality, as well as the toxicology and environmental epidemiology office.

Exhibit 2: Redlines to COSPCH02 Segment Table

2. Cherry Creek Reservoir.							
COSPCH02	Classifications	Physical and Biological			Metals (ug/L)		
Designation	Agriculture Aq Life Warm 1 Recreation E Water Supply		DM	MWAT		acute	chronic
Reviewable			WL	WL			
			acute	chronic			
		Temperature °C	---	---	Arsenic	340	---
		D.O. (mg/L)	---	5	Arsenic(T)	---	---
		pH	6.5 - 9.0		Cadmium	TVS	TVS
		chlorophyll a (ug/L) 7/1 - 9/30	---	18*	Cadmium(T)	5	---
		E. coli (per 100 mL)	---	126	Chromium III	---	TVS
		Inorganic (mg/L)			Chromium III(T)	50	---
			acute	chronic	Chromium VI	TVS	TVS
		Ammonia	TVS	TVS	Copper	TVS	TVS
		Boron	---	0.75	Iron	---	WS
		Chloride	---	250	Iron(T)	---	1000
		Chlorine	0.019	0.011	Lead	TVS	TVS
		Cyanide	0.005	---	Lead(T)	50	---
		Nitrate	10	---	Manganese	TVS	TVS/WS
		Nitrite	---	0.5	Mercury(T)	---	0.01
		Nitrogen	---	TVS*	Molybdenum(T)	---	150
		Phosphorus	---	TVS*-	Nickel	TVS	TVS
		Sulfate	---	WS	Nickel(T)	---	100
		Sulfide	---	0.002	Selenium	TVS	TVS
					Uranium	varies*	varies*
					Zinc	TVS	TVS

Qualifiers: **Public Swim Beach***

Other:
Temporary Modification(s):
Arsenic(chronic) = hybrid
Expiration Date of 12/31/2024

*chlorophyll a (ug/L)(chronic) = Season mean concentration measured in the upper three meters of the water column for the months of July through September with an exceedance frequency of once in five years.

***Public Swim Beach applies to Cherry Creek Reservoir.**

***Total Nitrogen and Total Phosphorus delayed effective date: [TBD]/2025**

*Uranium(acute) = See 38.5(3) for details.

*Uranium(chronic) = See 38.5(3) for details.