



Colorado's 2024 Integrated Report

Colorado Department of Public Health and Environment

Approved by the Water Quality Control Commission on October 10, 2023



Lea la versión en [español](#)

Welcome!

Our mission

The Water Quality Control Division (division) monitors and reports on the quality of state waters to prevent water pollution and protect, restore, and enhance the quality of surface and groundwater while ensuring that all drinking water systems provide safe drinking water. Our mission is to protect and restore Colorado's water quality for public health, the environment, and future generations.

About this StoryMap

This is the story of Colorado's 2024 Integrated Water Quality Monitoring and Assessment Report. The division created this

[StoryMap](#) to report on the status of Colorado's streams and lakes in an easy-to-understand format.

The 2024 Integrated Report is only produced in this interactive StoryMap format. The division hopes that this format will increase the public's understanding of the health of Colorado's waters and the programs that work together to provide clean and safe water for all.

To print or save the StoryMap as a PDF file, use the print option in the header menu in the upper right corner.

How to use this StoryMap

To view this StoryMap, scroll down through the content or use the top menu to jump to a specific topic of interest. Figures within the story can be expanded by clicking or tapping on the image. When you see words with a red underline, click on the word(s), and it will take you to a website or document.

For a better user experience, we recommend using a desktop or laptop computer as the interactive features work best on these devices. If you have trouble viewing the StoryMap, try using a different web browser or changing the zoom level.

How to contact us

For more information on the Integrated Report, please contact Skip Feeney by email at skip.feeney@state.co.us.

Or email the water quality assessment staff at cdphewqcd_surfacewaterdata@state.co.us.

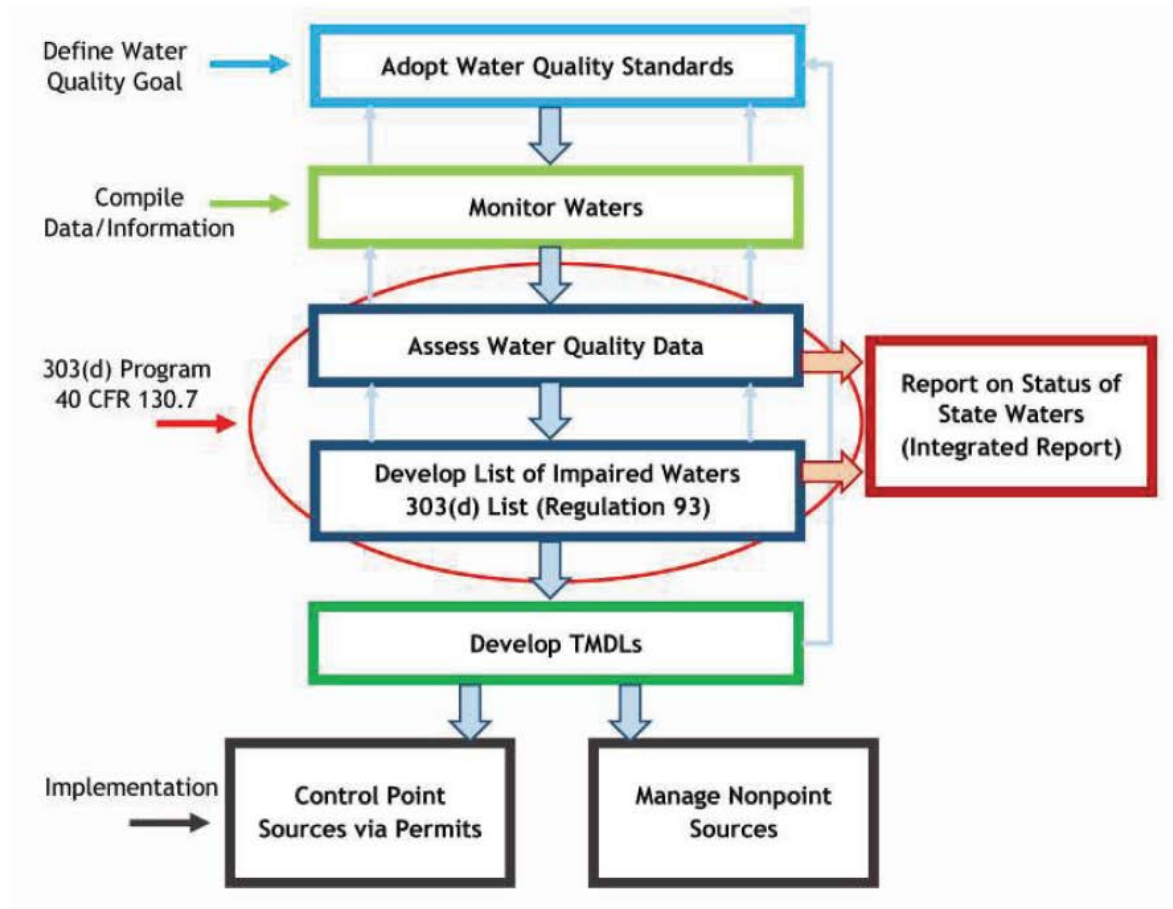
Introduction



What is the Integrated Water Quality Monitoring and Assessment Report?

The federal Clean Water Act requires that states report on the quality of the nation's waters every two years to the Environmental Protection Agency (EPA). These requirements are in Sections 303(d) and 305(b) of the Clean Water Act. Section 303(d) requires states to develop a list of waterbodies that do not meet water quality standards every other year. Section 305(b) requires that states submit a comprehensive water quality report to the EPA every other year. The Integrated Report combines the reporting requirements of the Clean Water Act into one report.

Colorado's Integrated Report provides statewide water quality assessment summaries and the status of all surface waters according to the five reporting categories. The report also provides information on the division's water quality programs that work to restore and protect Colorado's waters.



How does the Integrated Report fit into the Clean Water Act?

The Clean Water Act requires states to establish water quality standards for all state waters. These standards are set to protect the uses designated for each waterbody.

Section 303(d) of the Clean Water Act requires states to evaluate all available water quality data and information to develop a list of waters that do not meet water quality standards.

States are required to assess and submit their list of impaired waters every two years, meaning impaired waters continue to be monitored and assessed until assigned water quality standards are met. This information in the Integrated Report is then used to set priorities and implement water quality controls and protection activities.



What is the Section 303(d) List of Impaired Waters?

Section 303(d) of the Clean Water Act requires states to submit a list of impaired waters every two years. This list is called the 303(d) List of Impaired Waters (also known as the "303(d) List"). Impaired waters are waterbodies that do not meet water quality standards.

The Monitoring and Evaluation List is an additional list of waters where there is reason to suspect water quality problems, but there is uncertainty regarding one or more factors, such as the representative nature of the data. Both lists are adopted by the Water Quality Control Commission (commission) as [Regulation 93](#) through a public rulemaking hearing process. An electronic version of Regulation 93 is available on the [Regulation 93 dashboard webpage](#).

Segments are included on the Section 303(d) List of Impaired

or physical data that shows the waterbodies are not meeting standards. This process of evaluating data/information for each waterbody is called an assessment. The assessment practices used by the division to determine if a waterbody is meeting standards are detailed in a document called the [303\(d\) Listing Methodology](#). The commission approves the listing methodology through a public administrative action hearing process. Similar to the Section 303(d) List and Monitoring and Evaluation List, the listing methodology is revisited every two years.

How are waterbodies removed from the 303(d) List?

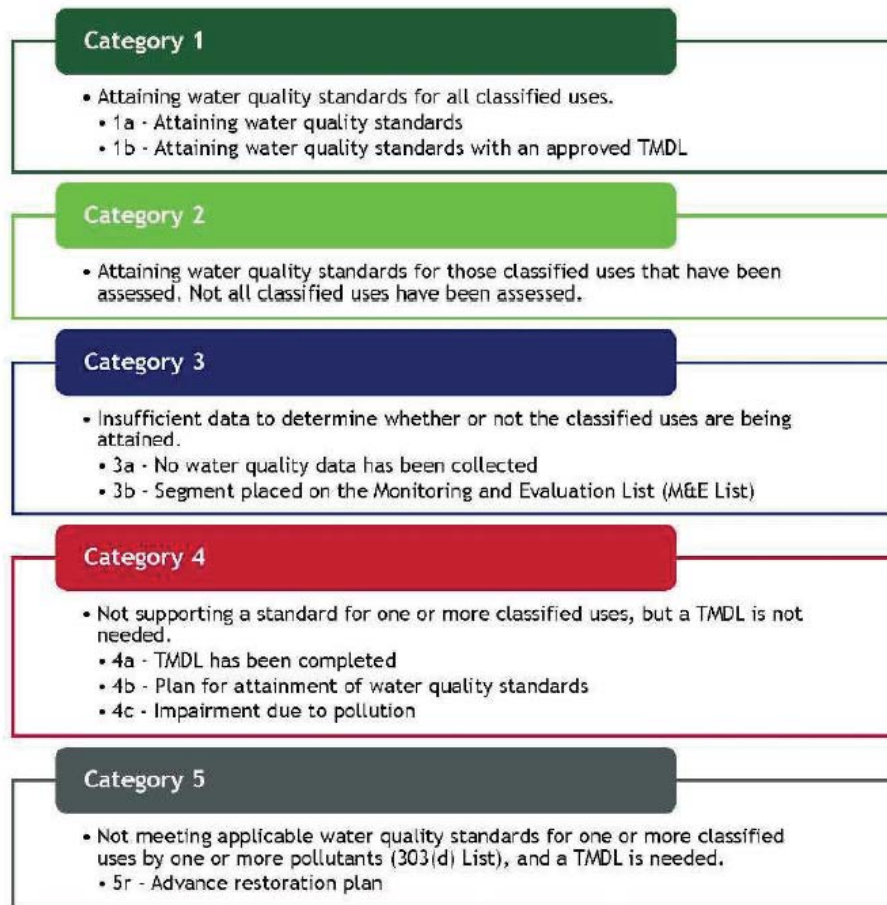
The EPA recommends that states document the status of segments removed from the 303(d) List to report progress in restoring waters. Below are reasons for removing waterbodies from the 303(d) List.

- The state determines that the water quality standard is being met.
- A Total Maximum Daily Load (TMDL) is approved, or an alternative pollution control plan is developed.
- The applicable water quality standards are attained due to restoration activities, changes in standards, new assessment methods, or the original basis for the listing was incorrect.

Removing waterbodies and pollutants from the 303(d) List is considered appropriate in instances where new information indicates water quality standards are being met and/or designated uses attained. The listing methodology document outlines the process for delisting segments from the 303(d) List.

Click the button below to see the waterbodies removed from the 303(d) List.

[Delisting Table](#)



What are the integrated report categories?

The primary purpose of this Integrated Report is to provide information on the water quality status of all surface waters within Colorado. To do this, the division places each waterbody in one of the reporting categories or subcategories based on what is known about its water quality and the analysis of whether the data demonstrates that the designated use is supported.

The categories represent varying levels of attainment, ranging from Category 1, where the waterbody is attaining water quality standards for all classified uses, to Category 5, where the waterbody is not meeting water quality standards for one or more classified uses and a TMDL is needed. A description of Colorado's categories and subcategories is presented in the figure.

During the assessment process, these categories are first applied to individual pollutants and classified uses for each waterbody.

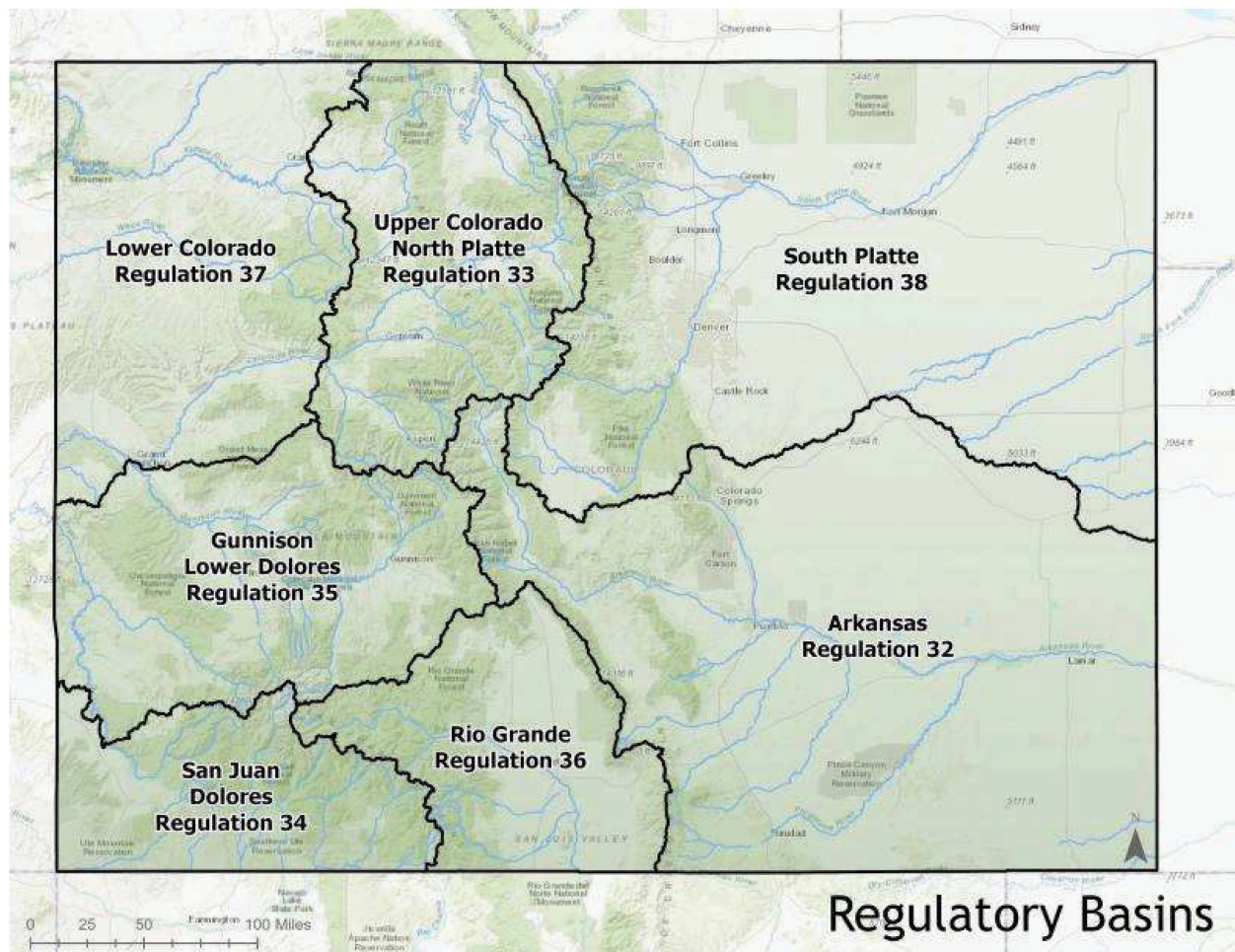
This can result in multiple categories within a single waterbody. In these cases, a rating system is used to apply a single category to a waterbody. Typically, the overall highest category for all the classified uses is assigned to the waterbody.

Background Information

Colorado has over 90,000 miles of rivers and more than 270,000 acres of lakes. Most rivers originate in the Rocky Mountains' pristine, high alpine environment, and water flows downstream through the high desert or high plains regions before leaving the state.

Nearly half of the state is flat. The Colorado High Plains, part of the Great Plains, lies east of the southern Rocky Mountains. They are sparsely populated, with most people living along the South Platte and Arkansas Rivers.

Numerous dams and reclamation projects on these rivers supply hydroelectric power and water for irrigation and municipal and industrial use. The Colorado-Big Thompson and the Fryingpan-Arkansas projects are two of the largest projects. They divert water from the Western Slope, which has 80 percent of the state's surface water, to the Eastern Slope, where most of the population and farmland are concentrated.

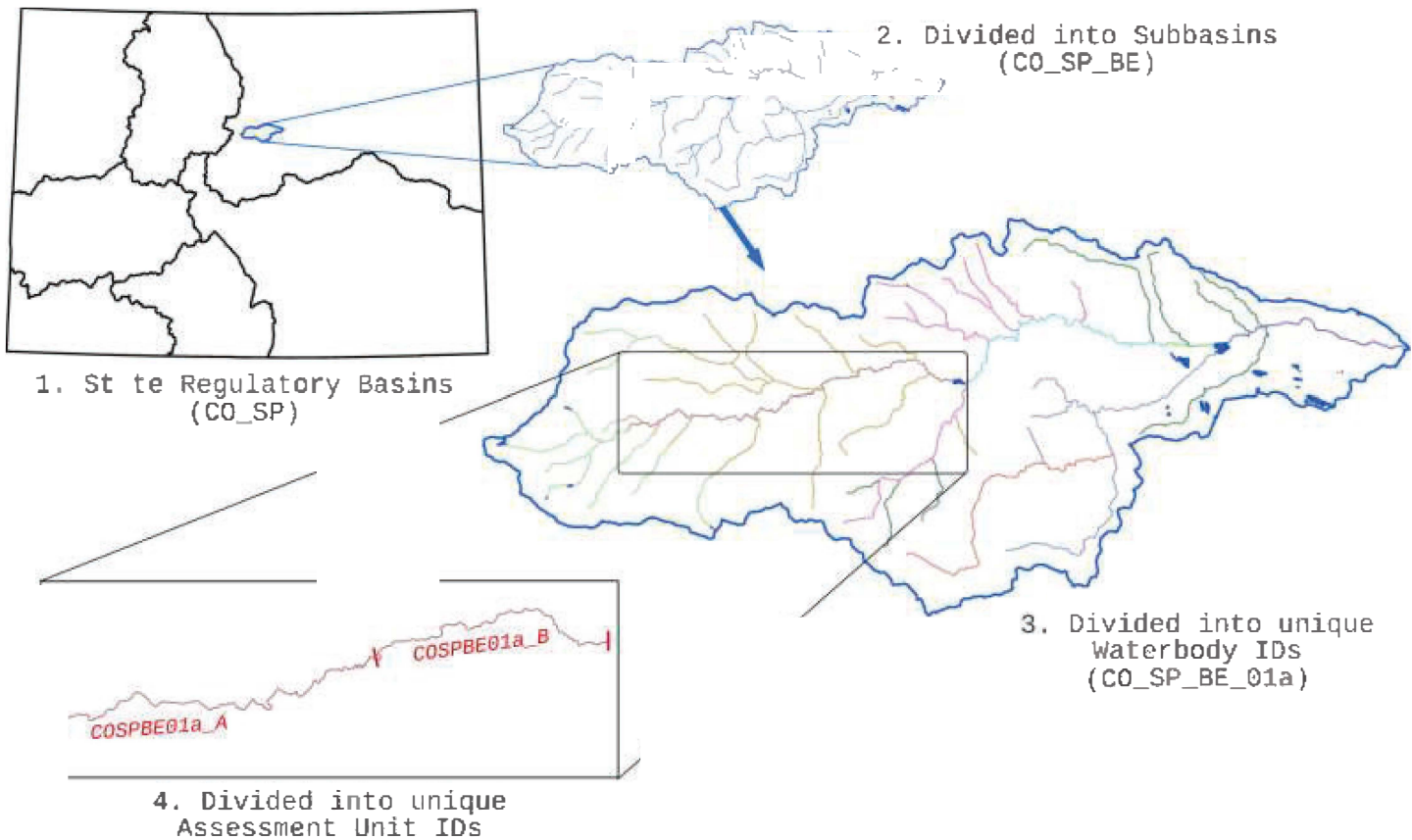


How are Colorado's waters subdivided?

Colorado's surface waters are divided into seven regulatory basins (major river basins): Arkansas, Upper Colorado and North Platte, San Juan and Dolores, Gunnison and Lower Dolores, Rio Grande, Lower Colorado, and South Platte. Each regulatory basin is further divided into subbasins (minor river basins).

Waterbodies within a subbasin are further divided into specific water segments. Segments may include a specified stretch of a river, a tributary, a lake or reservoir, or a group of waters within the basin.

During the water quality assessment process, segments may be divided into assessment units, which are unique portions of the waterbody.



Waterbody IDs and assessment unit IDs

The waterbody ID identifies segments defined in basin Regulations 32-38. A complete list of the regulatory basins and subbasins can be found in this [key](#).

The following example illustrates Colorado's waterbody identification system for a waterbody in the Bear Creek subbasin (**COSPBE01a**). Continue reading to learn about the letters and numbers that make up the waterbody ID.

1) The four letters at the beginning of each waterbody ID identify the state and the regulatory basin (**COSP**).

2) Each waterbody ID's fifth and sixth letters identify the subbasin (**COSPBE**).

3) Each waterbody ID's final two or three characters correspond to a description of the specific state waters included within the segment (COSPBE**01a**).

4) The underscore and letter at the end of the waterbody ID correspond to the assessment unit ID (COSPBE01a_**B**).

Colorado reports on water quality in the state by assessment unit IDs. The assessment unit ID describes the extent and the attainment status of each portion of a waterbody.

Assessment Results

The division assesses water quality across the state in five-year cycles, focusing on a different section of the state each year. Every fifth year, the division focuses assessments on outstanding issues statewide that stakeholders would like to revisit. Surface water quality assessment efforts during the 2024 reporting cycle (period of July 2021 through June 2023) focused on the Arkansas River and Rio Grande Basins (Regulations 32 and 36) and the Upper and Lower Colorado River Basins (Regulations 33 and 37).

The following section summarizes the status of water quality in Colorado. This water quality characterization results from the ongoing assessment of all readily available and existing data collected from government, municipal, and private entities working throughout Colorado. A total of 85,530 river miles and 186,900 lake acres have been assessed.

Note that the assessment results represent the water quality status in Colorado for the 2024 reporting cycle, as approved by the commission in October 2023, and do not reflect segmentation changes to Regulation 38, adopted on or after February 12, 2024.

Summary of reporting categories

Based on water quality assessments, Colorado reports the water quality standard attainment status of all state waterbodies to the EPA. Each waterbody is placed in one of the unique assessment categories. Explore the map and chart to see the reporting categories assigned to each waterbody.

CO Basin Dashboard: Reporting Categories

Category summary for Colorado's rivers and streams

Category	Category Definitions	Size (Miles)	Number of Assessment Units
Category 1a	Attaining	43,081	341
Category 1b	Attaining (with approved TMDL)	88	6
Category 2	Supports some designated uses	243	5
Category 3a	No water quality data	5,855	96
Category 3b	Monitoring and Evaluation List	9,581	153
Category 4a	Impaired with approved TMDL	1,022	50
Category 4b	Impaired with 4b plan	0	0
Category 4c	Impaired due to pollution	0	0
Category 5	Impaired without completed TMDL	31,532	583

Category summary for Colorado's lakes and reservoirs

Category	Category Definitions	Size (Acres)	Number of Assessment Units
Category 1a	Attaining	79,779	58
Category 1b	Attaining (with approved TMDL)	0	0
Category 2	Supports some designated uses	11,268	6
Category 3a	No water quality data	82,785	169
Category 3b	Monitoring and Evaluation List	6,773	16
Category 4a	Impaired with approved TMDL	1,562	4
Category 4b	Impaired with 4b plan	0	0
Category 4c	Impaired due to pollution	0	0
Category 5	Impaired without completed TMDL	87,447	87

Summary of classified uses for rivers and streams

Colorado has adopted five categories of classified uses; aquatic life, recreation, water supply, agriculture, and wetlands.

[Regulation 31](#), section 31.13(1) describes Colorado's use classifications.

Each waterbody is assigned the classified uses that are applicable, depending on if the water is used for recreation, water supply, aquatic life, or agricultural uses. Each waterbody then has water quality standards adopted to protect each classified use. The classified uses of a waterbody are assigned a level of support to categorize whether water quality standards are met, and the use is supported. The following are the use support categories assigned to each classified use of a waterbody:

- **Fully supporting:** The classified use is supported (Category 1).
- **Not supporting:** The classified use is not supported (Categories 4 and 5).
- **Insufficient information:** There is insufficient data/information to make a use support determination (Category 3b).
- **Not assessed:** No water quality data has been collected to make a use support determination (Category 3a).

Explore the map and chart to see the attainment status of each classified use for rivers and streams, or click the button below to view the information in a table format.

[Attainment Table Rivers/Streams](#)

Classified Use	Fully Supporting	Not Supporting	Insufficient Data (M&E)	Not Assessed
Agriculture	84,300	831	68	6,100
Aquatic life cold	31,400	5,482	3,600	3,200
Aquatic life warm	28,500	14,160	1,500	2,600
Water supply	19,400	11,125	4,500	3,200
Recreation	80,200	2,417	2,700	6,100

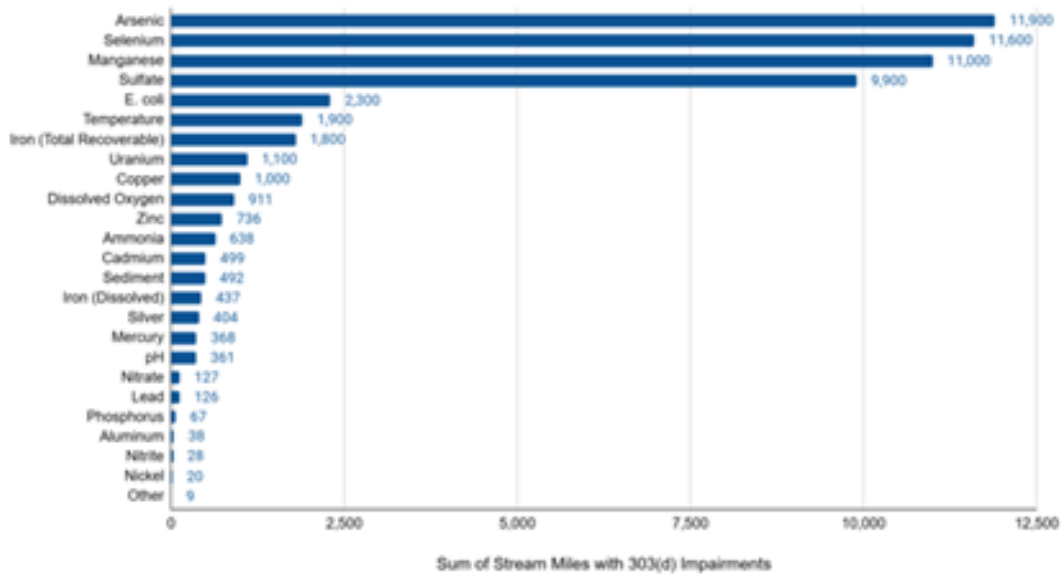
CO Basin Dashboard: Classified Uses (Rivers and Streams)

Causes of impairments for rivers and streams

In Colorado, when a waterbody exceeds a standard, we determine that the associated use is in "non-attainment" status and then determine the cause. For example, if the body of water has a classified use for aquatic life, and the standard for zinc that has been adopted to protect aquatic life for this body of water is exceeded, then the "aquatic life" use would be in "non-attainment" status, and the cause would be zinc.

Explore the chart to see the primary causes of impairments for rivers and streams.

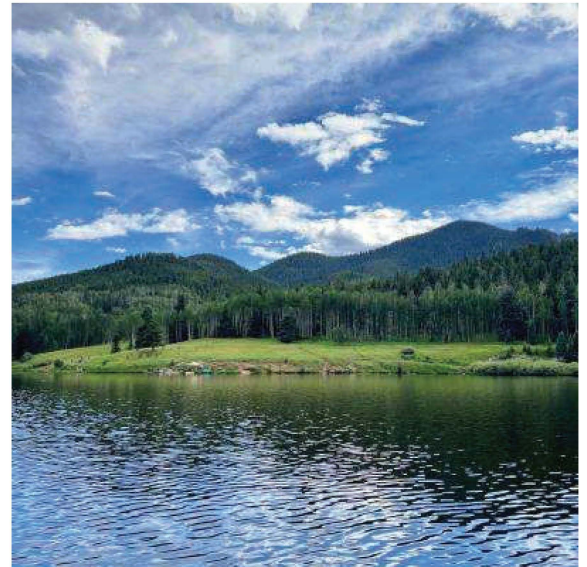
Causes Dashboard: River and Stream Analytes



Causes Dashboard: River and Stream Analytes

Clean lakes program

Section 314 of the Clean Water Act requires states to report the status of publicly owned lakes. Colorado has approximately 1,533 publicly owned lakes of greater than ten surface acres. The total surface acreage of these lakes is estimated at 249,787. Publicly owned lakes are defined as those natural lakes, reservoirs, or ponds where the public has access to recreational activities such as fishing and swimming or where the classified uses, such as water supply, affect the public.



Each summer, up to 10 lakes are chosen from the basin of focus to monitor (three times each) from July through September. The lake and reservoir monitoring efforts provide data to evaluate the trophic status (amount of algae production in a lake) and assess

the attainment of water quality standards. As part of the lake assessments, the division also considers data collected by agencies other than the division.

Summary of classified uses for lakes and reservoirs

The primary purpose for monitoring lakes in Colorado is to assess if lakes are in attainment of their classified uses by comparing water quality measurements against applicable lake standards. The classified uses of a waterbody are categorized as fully supporting, not supporting, insufficient information, or not assessed. Explore the map and chart to see the attainment status of each classified use for lakes and reservoirs, or click the button below to view the information in a table format.

[Attainment Table Lakes/Reservoirs](#)

Attainment of classified uses as estimated acres of lakes and reservoirs

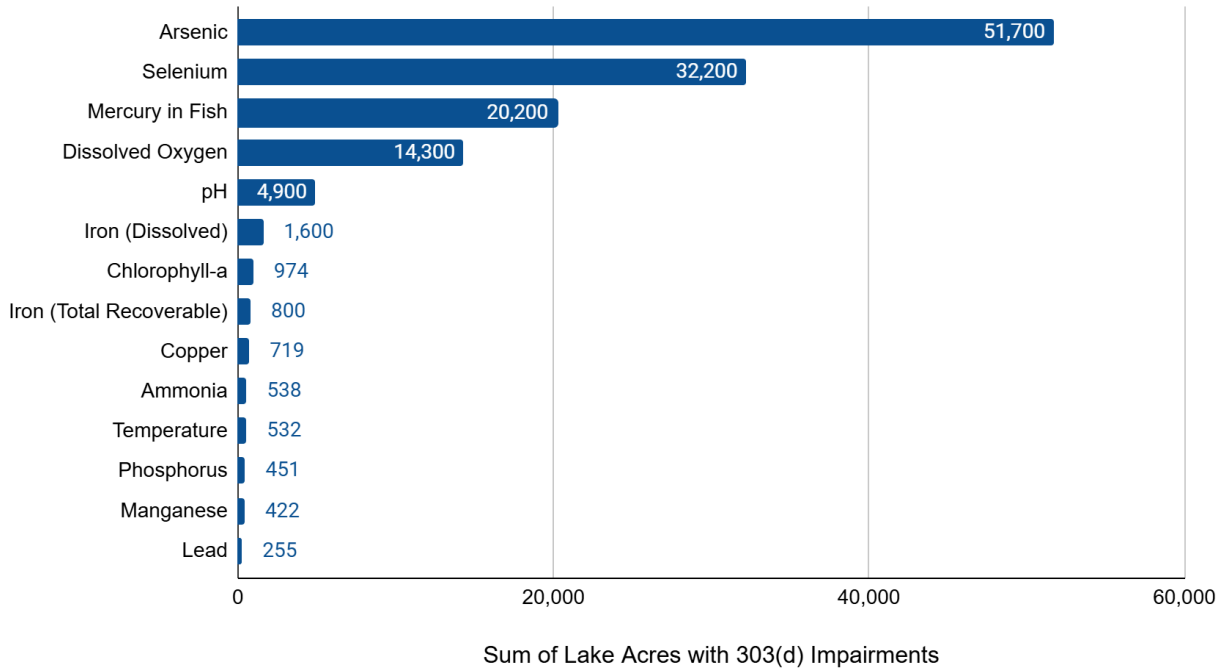
Classified Use	Fully Supporting	Not Supporting	Insufficient Data (M&E)	Not Assessed
Agriculture	178,900	0	0	90,300
Aquatic life cold	72,800	27,242	3,400	18,200
Aquatic life warm	40,100	45,600	1,500	60,500
Water supply	116,500	44,500	14,800	72,400
Recreation	176,600	0	5	92,600

CO Basin Dashboard: Classified Uses (Lakes and Reservoirs)

Causes of impairments for lakes and reservoirs

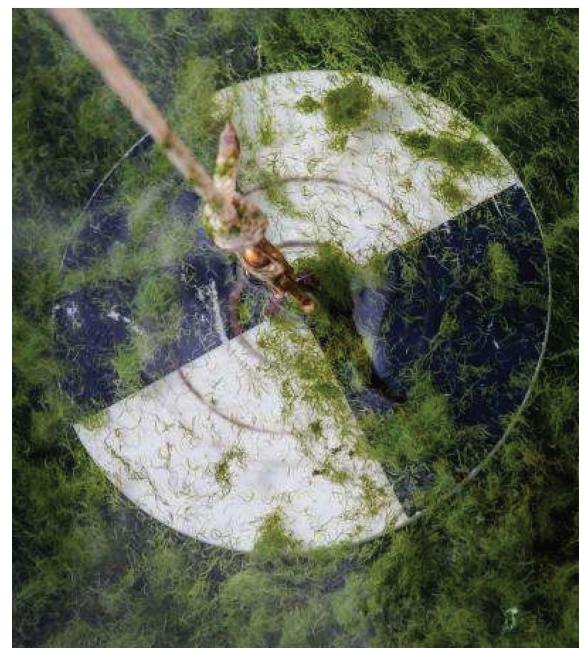
For lakes, the most common causes of non-attainment of uses are arsenic, selenium, and mercury in fish. Explore the chart to see lakes and reservoirs' primary causes of impairments.

Causes Dashboard: Lakes and Reservoirs Analytes



Lake trophic status

The trophic state is a classification of lakes based on the amount of biological productivity (mainly algae) and nutrients occurring in the water. Commonly used indicators of nutrient status and productivity include the amount of algae measured by chlorophyll-a, water transparency measured by Secchi disk depth, and in-lake epilimnetic (uppermost layer in a stratified lake) total phosphorus concentration. The trophic state is broadly defined as follows:



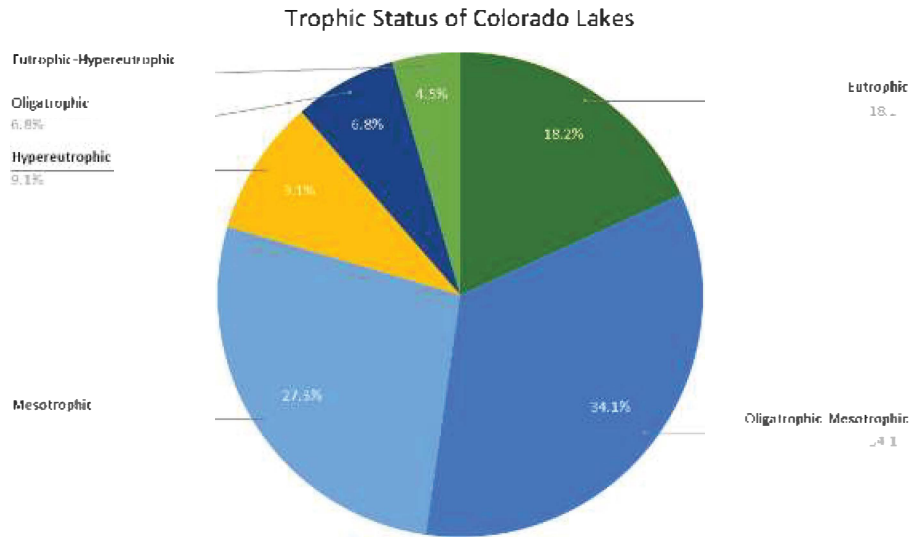
- **Oligotrophic:** lakes with few available nutrients and a low level of biological productivity; characterized by clear water; often supports cold water fish species.
- **Mesotrophic:** lakes with moderate nutrient levels and biological productivity between oligotrophic and eutrophic; usually supports warm water fish species.
- **Eutrophic:** lakes with high nutrient levels and a high level of productivity; typically supports exclusively warm water fish species.
- **Hypereutrophic:** lakes in an advanced eutrophic state.

Trophic status is an index of water quality only to the extent that trophic condition limits the desired use of a lake (i.e., water supply or recreation). Generally, the effects of lake eutrophication are considered to be negative, especially if the eutrophication is accelerated by human activities. Negative effects include taste and odor problems for water supplies; a reduction in water clarity, which is important for many recreational uses; and a reduction in the dissolved oxygen concentration in bottom waters to levels lethal to fish. Eutrophication increases fish population in response to increased algae production, but highly eutrophic waterbodies may see a population shift from more highly sought-after species such as trout to less desirable fish species. While nutrients naturally occur in the environment and are necessary food for plants, when excess nutrients enter a lake due to human activities, eutrophication is accelerated. This can result in nuisance algae blooms and excessive plant growth.

The division uses the Carlson Trophic State Index to estimate the trophic state of each lake. Data for the epilimnion collected during the growing season are used to calculate the mean chlorophyll-a for each lake. Only lakes with a minimum of three chlorophyll-a measurements within a season were used to calculate the trophic status. The purpose of this analysis is to satisfy the requirements of section 314 of the Clean Water Act. The trophic conditions for

each lake are not used for regulatory purposes. The trophic status of Colorado's lakes is shown in the chart below.




For more information on the Carlson Trophic State Index, visit the [NALMS Trophic State Equations webpage](#).



ATTENTION

HIGH MERCURY LEVELS HAVE BEEN FOUND IN FISH FROM THIS AREA.

FOLLOW THESE GUIDELINES BEFORE EATING THE FISH YOU CATCH

Species	Size	General population	Women who are pregnant, nursing or may become pregnant	Children age 6 years or younger
Black Crappie 	legal size or bigger	2 meals per month	1 meal per month	DO NOT EAT
Largemouth Bass 	smaller than 15"	3 meals per month	2 meals per month	1 meal per month
	bigger than 15"	1 meal per month	DO NOT EAT	DO NOT EAT
Yellow Perch 	legal size or bigger	1 meal per month	DO NOT EAT	DO NOT EAT

SERVING SIZES



ADULT CHILD

The water is safe for fishing and recreation.

- Eating fish is good for you, but some fish have high levels of mercury.
- Mercury is a natural element, but eating fish high in mercury is toxic.
- Mercury is especially dangerous to the developing brains of children and unborn babies.



cpw.state.co.us
 Refer to Colorado Parks and Wildlife fishing regulations for legal sizes and limits
TRY THE CPW FISHING APP
colorado.gov/cdphe/fish
 For other guidelines and information

Fish consumption advisories

The fish consumption advisory program is overseen by a technical advisory committee made up of staff from the division, the Division of Environmental Health and Sustainability, and the Division of Parks and Wildlife. Committee members work together to develop sampling plans, analyze fish data, and communicate advisories. Colorado Parks and Wildlife biologists collect fish throughout the state, and the Colorado State Public Health Laboratory conducts the chemical analysis. Data collected through the fish consumption program, as well as data collected by other agencies within the state, is used to inform both attainment assessment and the state's fish consumption advisory program.

Site-specific fish consumption advisories are issued for fish species in waterbodies where the weighted mean mercury of at least ten samples is greater than or equal to 0.3 mg/kg. Some advisories were issued using previously employed methodologies. Advisories are considered active until enough data can be assessed using the current methodology. Based on this approach, the division has 29 active advisories (approximately 24 percent of the tested waterbodies).

To learn more about fish consumption advisories in Colorado:

- [Fish consumption dashboard](#) - Provides active fish consumption advisories, state guidelines, and fish sampling results.
- [Fish consumption webpage](#) - Provides general information on Colorado's fish consumption advisory program, mercury bioaccumulation, assessment methodologies, and materials related to contaminants in fish and consumption advisories.



Harmful algae blooms

Cyanobacteria harmful algae blooms (cyanoHABs) have been detected in Colorado waterbodies since at least 2001 and can negatively impact public and environmental health. These organisms can sometimes produce toxins that affect humans and animals. In addition to toxic effects, algae blooms can hurt ecosystems and local economies. For example, fish kills may result from reduced dissolved oxygen in the water, and blooms affect recreational industries such as fisheries and tourism, causing economic impacts.

The division collects baseline cyanotoxin samples at routine lake sites and emergency samples at reported algae bloom sites. The division partners with Colorado Parks and Wildlife to collect emergency samples at sites managed by Colorado Parks and Wildlife.

To learn more about harmful algae blooms in Colorado:

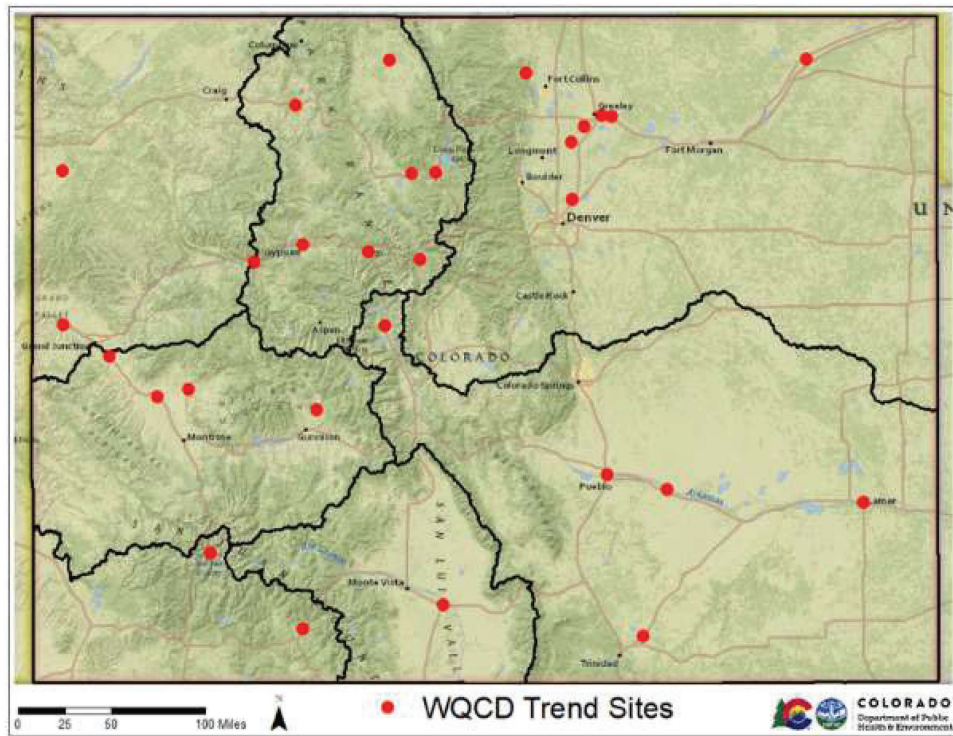
- [Toxic algae webpage](#) - Provides general information, fact sheets, an updated toolkit for recreational waterbody managers, and caution/warning signs for waterbody managers to use.
- [Toxic algae dashboard](#) - Provides recent and historical algal toxin test results for some waterbodies. These data do not represent all recreational bodies of water in Colorado and may not reflect current conditions. Please contact the waterbody manager before your visit for the most up-to-date information on water conditions.

Water quality trends

Evaluating trends can help identify potential threats to water quality, as well as demonstrate success in improving water quality. To detect trends in a way that is statistically defensible, the division relies on data collected over a period of at least ten years.

Trend monitoring

In 2012, the division established a long-term water quality sampling network of 29 stream sites across the state. The division collects samples every other month at these sites and analyzes them for a suite of parameters. These sites established to detect trends are permanent, ensuring an adequate database to identify and evaluate long-term changes in water quality, especially concerning anthropogenic factors such as urban development, farming, and mining. Most of these sites are located on streams affected by point or nonpoint pollution sources such as urban development or irrigated agriculture. A few trend sites, however, are located in undeveloped watersheds; these act as reference stations that may help identify subtle changes in quality due to changes in climatic patterns or atmospheric deposition (gases and particles from the atmosphere deposited via rain, sleet, and snow).



Trend analysis

Trends in water quality status are difficult to track from reporting cycle to cycle due to changes in the 303(d) Listing Methodology, table value standards, and increased monitoring. Therefore, the division recently developed a trend analysis team and began collaborating with the United States Geological Survey to examine water quality and streamflow data for the 29 long-term stream sites. Data reviewed include major and minor ions, nutrients, total dissolved solids, and selected trace metals.



This analysis will help the division understand if water quality is improving due to the implementation of new standards and regulations. It will also allow us to see if other stressors, such as climate change and population growth, impact water quality.

This trend data analysis is ongoing, and the results from this analysis will be available and included in future Integrated Reports.

Probability-based monitoring and National Aquatic Resource Surveys

Colorado works with the EPA to implement EPA's National Aquatic Resource Surveys, a probability-based monitoring program to assess the status and trends of aquatic systems. These surveys provide consistent and technically defensible methods across the country through standardized field and lab methods.

To learn more about National Aquatic Resource Surveys, visit [EPA's National Aquatic Resource Surveys webpage](#).

How to learn more about your watershed

How's My Waterway is an EPA tool that helps users find information on the condition of their local waters based on data provided by states, federal agencies, tribes, local agencies, and others. The tool provides the public with water quality information on a community, state, or national scale.

To learn more about the water quality in your local watershed, visit [How's My Waterway](#).



Water Quality Programs

The management of Colorado's water quality is critical to the continued development of the state, and to the quality of life the state offers its residents. The division plays an important role in the protection and restoration of the state's streams, lakes, and reservoirs and in providing Colorado residents and visitors with clean drinking water.

Click the button below for a guide to Colorado Programs for Water Quality Management and Safe Drinking Water.

[Guide to Colorado Programs](#)

To explore the water quality programs, click the arrow at the far right to advance the slides.



Water quality monitoring

Monitoring of water quality is an important component of the state's water quality program. Monitoring and data analysis are essential for reviewing and developing standards for triennial water quality standards reviews, permits development, water quality assessments, developing TMDLs, Clean Water Act Section 303(d) listing determinations, and reporting trends and water quality status in the 305(b) report. The division's surface water monitoring activities are grouped into four general types: (1) routine sampling, (2) special studies, (3) aquatic life and habitat studies, and (4) lakes and reservoir monitoring.

Routine sampling: Routine sampling is when the division collects water quality samples at established sites on a regular schedule. The division samples these sites for multiple purposes, including to review and develop water quality standards for rulemaking hearings, water quality assessments, trend detection, and TMDL development. The Colorado State Public Health Laboratory analyzes the samples.

Special studies: The division conducts various special studies and monitoring efforts. Special studies include macroinvertebrate studies, fish tissue studies, temperature monitoring, studies to determine the selenium species present in the water, arsenic studies, studies to support TMDL development, and studies to evaluate nonpoint source project work.

Aquatic life and habitat studies: The division conducts biological and habitat monitoring to gather data to use in stream standards and classification reviews and to determine the attainment of the aquatic life use in the context of the listing of impaired waters under Section 303(d) of the Clean Water Act. This monitoring typically includes macroinvertebrate sampling, attached algae analysis, sediment size counting, chemical sampling, and habitat evaluation.

Lakes and reservoir monitoring: The division monitors a limited number of reservoirs and lakes around the state to

determine their trophic status, develop TMDLs, and support changes to standards and classifications during triennial reviews. The lake monitoring program has limited funds because funds originate from the overall surface monitoring program. In 2019, the Colorado legislature added additional resources to the lake monitoring efforts to focus on harmful algal blooms. The division helps agencies and local waterbody managers with their response to concerns associated with harmful algal blooms.

For more information on surface water monitoring, visit the [Rivers, Lakes, and Streams webpage](#).



Water quality standards

Water quality standards are established by the commission and applied to state surface waters to protect beneficial uses. These standards are the regulatory basis for limits placed on discharges and the thresholds used to assess the condition of waterbodies.

During 2021-2023, the commission held numerous hearings to review and revise Colorado's water quality standards regulations. These rulemaking and administrative hearings included revisions to the Basic Standards and Methodologies for Surface Water (Regulation 31), basin regulation reviews, site-specific issues, new criteria, discharger-specific variances, temporary modifications, and commission policies. Click the button below to view the surface water standards review schedule.

[Index for Regulations & Policies](#)

The following are recent water quality standards revisions and reviews conducted by the standards unit and the commission.

Basin regulation reviews: Colorado's Water Quality Control Act and the Clean Water Act require the review of control regulations and water quality classifications and standards at least once every three years ("triennial reviews"). From July 2021–June 2023, the commission conducted triennial reviews of the San Juan (Regulation 34) and Gunnison (Regulation 35) River basins. During the public rulemaking hearing process, the commission, the division, and the public reviewed all use classifications, antidegradation designations, and standards. The commission addressed several site-specific issues, including use classification revisions, resegmentation, outstanding waters antidegradation designations, temporary modifications, and cleanup and clarifications.

Discharger-specific variances: The commission also adopted and reviewed discharger-specific variances as part of the triennial review rulemaking hearings. Discharger-specific variances (DSV) are implemented in situations where an entity can't meet a water quality-based effluent limit in its discharge permit. This can be because it is too expensive, the technology needed to comply isn't available, or it would cause more environmental damage to correct the pollution than to leave it in place. In those cases, the

commission may adopt a DSV for a specific pollutant and a specific point source discharge. A DSV is a temporary water quality standard that represents the best water quality that the discharger can achieve. A DSV sets different effluent limits that require the discharger to make progress on pollution control or treatment improvements while making sure that water quality conditions do not get worse in the meantime. The commission sets the timeframe for each DSV on a case-by-case basis. These are set to be only as long as necessary to achieve the best water quality possible. Once adopted, the commission reviews DSVs at least every five years.

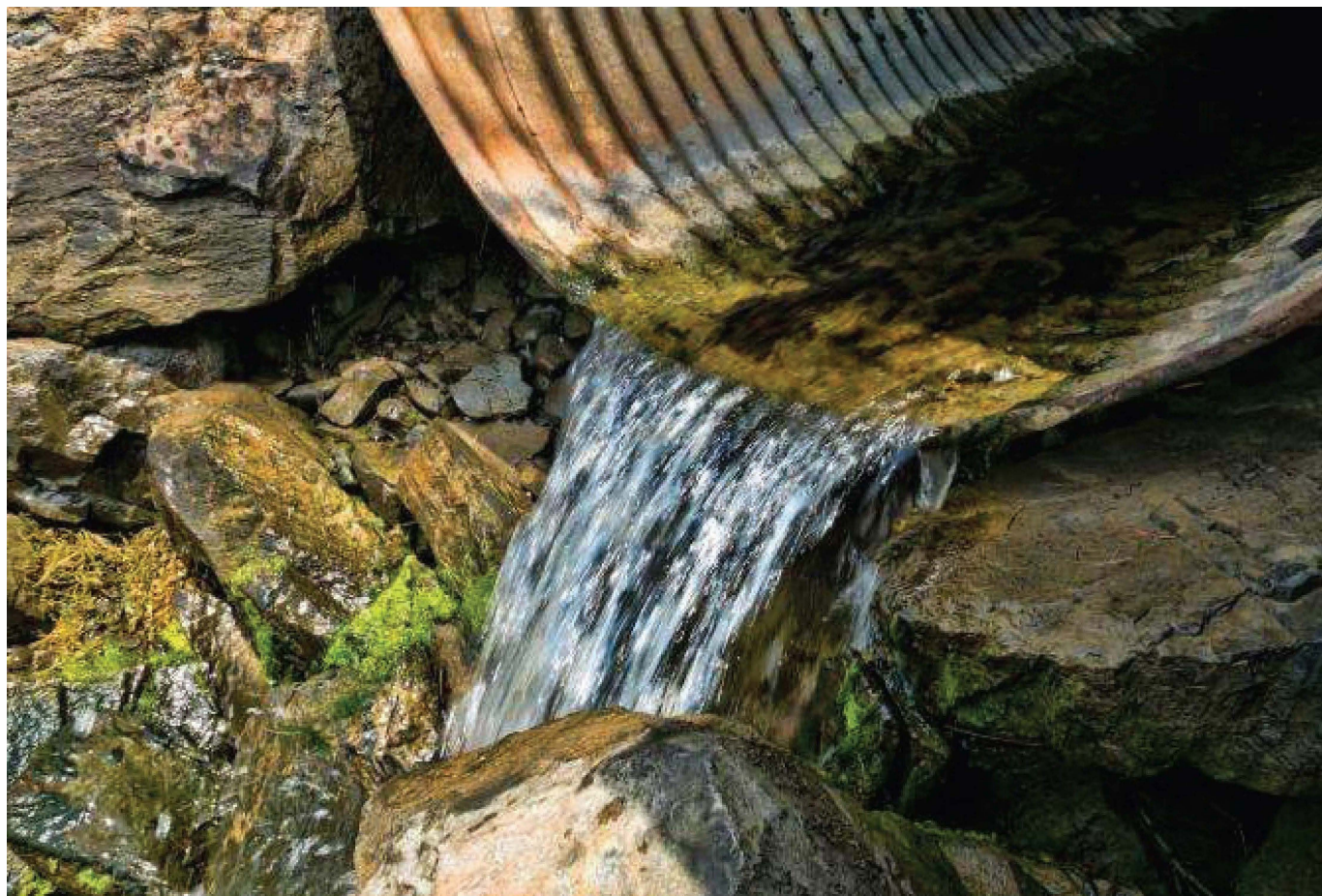
Temporary modifications: All temporary modifications are reviewed by the commission during biennial (i.e., every other year) rulemaking hearings. The last biennial temporary modifications rulemaking hearing was in June 2022 and the next scheduled temporary modifications rulemaking hearing is in June 2024. In addition, permittees who were the proponent of an existing temporary modification(s) are required to provide annual written updates to the division regarding the progress made to resolve uncertainty for each temporary modification. These updates are publicly available in the temporary modifications [Progress Updates Library](#).

For more information on water quality standards, visit the [Water Quality Standards webpage](#).

10-year water quality roadmap

The division has developed a 10-year water quality roadmap and is committed to ensuring that appropriate and protective criteria are applied to protect the beneficial uses of water in Colorado. Before 2027, the division will work to refine and develop standards for ammonia, arsenic, cadmium, selenium, total nitrogen, total phosphorus, and temperature while developing feasibility information to help dischargers propose discharger-specific variances, site-specific standards, and achieving compliance with

their permits. The division worked with technical advisory committees to consider revised criteria for cadmium and lakes nutrients (total nitrogen and total phosphorus), which resulted in the adoption of statewide standards revisions in December 2019 and April 2023, respectively. For more information on the 10-year roadmap, visit the [Water Quality 10-year Roadmap webpage](#).



Clean water permitting

The Clean Water Act prohibits the discharge of pollutants from a point source to surface water without a permit. The Clean Water Act established the National Pollutant Discharge Elimination System permit program to regulate such discharges. Because the state has developed a program that meets the requirements of the Clean Water Act, the primary discharge permit program in Colorado is administered by the division rather than EPA (subject to EPA review and oversight).

Permits establish pollutant levels that can be discharged to surface water and groundwater in a manner that protects public health and the environment. Permits also establish details about discharge monitoring and recordkeeping and include instructions on when facilities must notify the division. For more information on permits, visit the [Clean Water Permits webpage](#).

Permitting pesticides

The division started permitting pesticide discharges to surface waters in 2011 when the U.S. 6th Circuit Court determined that applying pesticides to surface waters of the United States constitutes a point source discharge and therefore requires a permit under the Clean Water Act. Discharges from pesticide activities covered under the permit include mosquito and other flying insect control, weed and algae control, forest canopy control, and animal pest control.

The pesticide general permit does not require an application for coverage but instead provides automatic coverage upon meeting the eligibility requirements in the permit. The permit includes practice-based effluent limits and recordkeeping/reporting requirements. Based on division/stakeholder agreement, only the subset of dischargers that apply pesticide products in quantities sufficient to exceed permit threshold limits or who are otherwise considered to be “automatically in” (special districts, land stewards) are required to submit an annual report and pay an annual fee. For more information on permitting pesticides, visit the [Aquatic Pesticides Permit webpage](#).



Total Maximum Daily Loads (TMDLs)

When waterbodies are not attaining water quality standards, the division develops a pollutant budget to help the waterbody meet standards. The purpose of this budget is to identify what, if anything, needs to happen to control sources of the pollutant that is impacting water quality. These pollutant budgets are the basis for Total Maximum Daily Load (TMDL) reports and Advance Restoration Plans (ARP).

A TMDL is a technical analysis designed to answer the following questions about a waterbody that is not meeting water quality standards (i.e., an impaired waterbody):

- What is the source(s) of pollution causing the waterbody to exceed standards?
- How much of the pollution comes from natural/background sources?

- How much of the pollution comes from point source discharges (e.g. treatment plants, industry, discharging mines, urban stormwater)?
- How much of the pollution comes from agricultural runoff and other nonpoint sources of pollution?
- How much pollution would need to be reduced from each source for the waterbody to attain standards?

An ARP is a near-term plan or description of actions with a schedule and milestones that are more immediately beneficial or practicable for achieving water quality standards rather than developing a TMDL. An ARP may be appropriate when there are unique local circumstances, such as the presence of a watershed group or other parties with available funding opportunities to address the cause of impairment in the near term. An ARP may also be appropriate if an initial review determines that particular point or nonpoint sources are responsible for the impairment and there are clear mechanisms to address these sources. If water quality standards are not attained after implementing an ARP, a TMDL is necessary.

The development of TMDLs and ARPs is accomplished through collaboration with many stakeholders as these technical analyses are produced. This collaboration is particularly important because many people have data and other information that are critical for the development of pollutant budgets. For more information about how you can become involved and provide input, visit the [Total Maximum Daily Loads \(TMDLs\) webpage](#).

Click the button below to view the TMDL and ARP development targets for 2024 and 2025.

[Targets for TMDL Development](#)



Nonpoint source

Unlike pollution from industrial and sewage treatment plants and other regulated discharges, nonpoint source pollution comes from many sources spread out over large areas and is caused by runoff resulting from rainfall or snowmelt. As the runoff moves over and through the ground, it picks up, carries away, and deposits natural and human-made pollutants in lakes, rivers, wetlands, and groundwater. Basic changes to common, everyday practices can play an important role in controlling nonpoint source pollution from urbanization, agricultural and forestry activities, and many other actions across the landscape that can ultimately lead to water quality impacts. The division's nonpoint source program helps partners in watersheds across the state reduce nonpoint source pollution. For more information, visit the [Nonpoint Source Pollution Management webpage](#).

The commission approved the [2022 Nonpoint Source Management Plan](#) at an administrative action hearing in the spring of 2022, and the EPA approved the revised plan, which updates and replaces the 2012 revision. The 2022 update to the Nonpoint Source Management Plan includes objectives and milestones to measure progress during the 2022-2027 plan timeframe and was the result of an iterative process that involved a survey from nonpoint source partners, input from the Nonpoint Source Alliance, including work sessions with the Nonpoint Source Alliance and nonpoint source workgroup, as well as a notice for public comments leading up to the hearing.

Click the button below to view the nonpoint source annual report which summarizes achievements and activities completed on Section 319 grant work plans.

[NPS 2022 Annual Report StoryMap](#)

Success stories

The Success Story Initiative is one of the nonpoint source program's primary ways of measuring the effectiveness of its work. Success stories document nonpoint source activities that result in the reduction of nonpoint source pollution and the attainment of water quality standards. In collaboration with many partners, the nonpoint source program reported two success stories during this reporting period. Summaries of these success stories are provided below.

Restoration of Lower South Platte River segment from selenium impacts

The EPA approved a Success Story for the Lower South Platte River (COSPLS01a and COSPLS01b) from the Weld County/Morgan County line to the Colorado/Nebraska border, where best management practices reduced selenium loading from agricultural activities. The Lower South Platte River is an

important water resource for drinking water, aquatic life, recreation, and agricultural uses. The nonpoint source program funded watershed-based plans for the Lower South Platte that were published in 2012, and one for Lower Beaver Creek, a tributary to the Lower South Platte, that was published in 2017 (a Beaver Creek watershed plan was completed in 2005 as well). These watershed plans identified projects to address water quality concerns from irrigated croplands, including installing sprinkler pivots on furrow irrigated cropland. Natural Resource Conservation Service funded these conservation practices identified in the watershed plans to address water quality concerns from irrigated croplands. These best management practices improved water quality, and as a result, this stretch of river now meets selenium water quality standards and was removed from the 303(d) List of Impaired Waters in 2020.

Water quality improvement from restoration practices in Kerber Creek

Due to legacy mining activities, Kerber Creek, a tributary to San Luis Creek, was impacted by high concentrations of metals. Since the initial listing on the State's 303(d) List of Impaired Waters due to copper, cadmium, and zinc pollutants by the commission in 1996, more than 25 years of characterization, assessment, monitoring, planning, and implementation of best management practices resulted in improved water quality in the lower segment of Kerber Creek. Fish and macroinvertebrate populations were absent for many years but reappeared in the Kerber Creek watershed. The vegetative cover also improved considerably. The state's most recent water quality assessments showed that lower Kerber Creek is attaining copper, cadmium, and zinc standards. As a result, these three metals are approved for removal from the 303(d) List as causes of water quality impairment in the lower Kerber Creek segment.

To learn more about the Success Stories, visit [EPA's Success Story webpage](#).



Measurable Results Program

The Measurable Results Program is a voluntary program that evaluates the effectiveness of capital improvements to wastewater treatment facilities and source identification and characterization of changes in water quality from nonpoint source mitigation projects.

The program measures the change in water quality from point source improvement projects funded through the [Water Pollution Control Revolving Fund](#). This fund provides local governments and water and sanitation districts with affordable financing through low-interest loans and grants for new construction and renovation of publicly owned wastewater treatment facilities, stormwater systems, and other pollution control projects.

To support nonpoint source pollution control initiatives, the Measurable Results Program characterizes water quality impacts of abandoned mines to support clean-up decisions, support restoration planning and measures water quality improvements from completed restoration projects.

The Measurable Results Program routinely collaborates with the Colorado nonpoint source program, Colorado Division of Reclamation, Mining and Safety, U.S. Forest Service, U.S. Environmental Protection Agency, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Trout Unlimited, watershed groups, water and sanitation districts, and local governments.

For more information on the Measurable Results Program and a summary of ongoing and completed studies, visit the [Measurable Results Program webpage](#).



Cost benefit analysis

The benefits of clean water and a healthy environment are challenging to quantify monetarily. The people of Colorado rely on qualitative benefits, as they expect a safe environment in which they can live and thrive.

The Clean Water Act ensures the availability of clean, safe drinking water, adequately maintained wastewater treatment facilities, biological diversity, and an aesthetically pleasing natural environment for recreation. The mechanisms for providing such a clean and safe environment are divided among the federal, state, and municipal governments. Therefore, it is difficult to obtain a full accounting of the total cost of water pollution control efforts throughout the state. However, it is possible to quantify federal and state investments for water quality by calculating the funding received under the Clean Water Act and other state programs such as the energy impact program.

The funding received through the EPA Clean Water State Revolving Fund program for water pollution control activities over the last two years is shown below, excluding state match. These amounts exclude all drinking water expenditures. All amounts have been rounded to the nearest hundred thousand.

- 2022: \$12.7 million
- 2023: \$12.7 million

To learn more about how federal funds are used, visit the [2022 Water Pollution Control Revolving Fund Intended Use Plan](#).



401 water quality certifications

Section 401 of the Clean Water Act requires that any federal license or permit applicant request a 401 certification from states or other certifying authorities (e.g., Tribes, EPA) to ensure that the permitted activity will comply with applicable water quality requirements within Waters of the United States. In Colorado, section 25-8-302(1)(f), C.R.S., confers the responsibility to grant, grant with conditions, or deny a 401 certification request to the division. [Regulation 82](#) sets forth definitions, procedures, and requirements for the division's 401 certification process.

The division reviews requests for 401 certifications of activities requiring (1) a Clean Water Act Section 404 individual permit from the U.S. Army Corps of Engineers, (2) a Clean Water Act Section 402 permit from EPA, (3) a license, including license renewals for hydropower projects, from the Federal Energy Regulatory

Commission, and/or (4) any other license or permit from a federal agency.

The division issues approximately fifteen 401 certifications per year. Most of those are associated with Clean Water Act Section 404 individual permits. The division reviews the certification request and prepares a draft 401 certification along with a preliminary antidegradation determination, if applicable, and places the draft and preliminary determination in the division's [Water Quality Information Bulletin](#) for a 30-day public notice and comment period. Finally, the division grants, conditionally grants, or denies 401 certifications based on the information in the request, any comments received during the public notice period, and other documents or information as appropriate.

The division has issued four conditional 401 Water Quality Certifications for large water supply projects since 2010. The first large water supply 401 certification was issued in 2010 for the Southern Delivery System in Colorado Springs. The second and third large water supply 401 certifications were issued in 2016 for the Windy Gap Firming Project and the Moffat Collection Project. More recently, in 2020, the division issued a 401 certification for the Northern Integrated Supply Project.

For more information on 401 certifications, visit the [401 Water Quality Certification webpage](#).



Groundwater program

Groundwater is a vital resource for the people of Colorado. Approximately 27 percent of Colorado’s public water systems rely on groundwater for their drinking water source. The Colorado Water Quality Control Act gives the state, more specifically the commission and the division, the authority to protect groundwater.

A 1985 Executive Order articulated: “The goal of the State of Colorado is to provide maximum beneficial use of the groundwater resources while assuring the safety of the users by preventing or controlling activities that have the potential to impair existing or future beneficial uses of groundwater or to adversely affect public health.”

Several state agencies undertake varying groundwater assessment and protection roles. These agencies, called implementing

agencies (SB89-181), are responsible for implementing water quality standards to protect groundwater quality.

- [Colorado Department of Agriculture](#)
- [Division of Oil and Public Safety](#)
- [Division of Reclamation, Mining and Safety](#)
- [Division of Water Resources/Office of the State Engineer](#)
- [Colorado Oil and Gas Conservation Commission](#)
- [Hazardous Materials and Waste Management Division](#)

Click the button below to view the annual reports of the implementing agencies.

[Implementing Agencies Reports](#)

Groundwater monitoring

The division partnered with the Colorado Geological Survey in 2022 and 2023 to sample and analyze groundwater samples from 85 wells in Colorado for metals and radionuclides, such as radium and uranium. Uranium and radium generally occur naturally at low levels in soil, water, rocks, coal, and plants in Colorado. Colorado's natural geology includes some areas with high mineral content and high uranium and radium.

This groundwater monitoring project helped the division better understand how hydrologically connected groundwater can impact surface water in areas where radionuclides may be present. Ambient groundwater monitoring allowed the division to gather baseline data on background conditions of radionuclides and metals in groundwater in Colorado. This information will help decision-makers make informed decisions regarding the care and use of groundwater in these areas.

For more information on groundwater, visit the [Groundwater Program webpage](#).

Safe Drinking Water

The Safe Drinking Water Program ensures that public drinking water systems always provide safe drinking water to the residents and visitors in the state. The program adopts and enforces regulations and provides assistance and incentives to further protect the quality of drinking water supplied by public water systems.

The Safe Drinking Water Program is housed within the division. The program administers two major federal statutes authorized by Colorado law in the Clean Water Act and the Safe Drinking Water Act. The program administers operator certification requirements adopted by the Water and Wastewater Facility Operator Certification Board. The program also helps administer federally-funded water infrastructure projects as part of the Bipartisan Infrastructure Law and implements a state-funded program that supports drinking water testing for lead in schools and daycares.

To explore the Safe Drinking Water Program, click the arrow at the far right to advance the slides.



Compliance assurance section

The compliance assurance section develops and maintains Colorado's drinking water regulations and policies. The section also implements and enforces drinking water standards and monitoring and reporting requirements. They provide compliance assistance and training to regulated public water systems and operators. Additionally, they respond to drinking water emergencies and follow up with systems about associated requirements and issues. Lastly, the section is responsible for managing self-reported monitoring data and other information used to assess and track water systems' compliance with regulations and to provide infrastructure and related information that is critical to timely and effective response in emergencies. This also includes responsibility for the administration and maintenance of the program's database of record, the EPA Safe Drinking Water Information System, and the program's electronic data portal, which provides a secure, effective, and simple means

for water systems and operators to submit information electronically. For more information, visit the [Drinking Water Compliance Assurance webpage](#).



Engineering section

The engineering section operates under both the Safe Drinking Water Program and the Clean Water Program. Section activities include:

- Reviewing designs for drinking water treatment and storage.
- Design and site location reviews for wastewater collection and treatment infrastructure projects.
- Determining eligibility for state revolving loan fund projects.
- Providing technical assistance to water and wastewater treatment systems and for enforcement-related actions.
- Responding to water treatment or distribution system failures and water quality/safety complaints/inquiries.

- Evaluating disinfection treatment for public drinking water systems to ensure appropriate pathogen removal.

For more information, visit the [Facility Design Approval for Drinking Water and Wastewater webpage](#).



Field services section

The field services section conducts field inspections of public water suppliers and permitted wastewater facilities. The types of inspections, frequency of inspections, and process for inspections are all completed under applicable regulations. Depending on the specific findings during an inspection, the section typically will provide preliminary compliance assistance. The field services section is also responsible for responding to spills and for drinking water acute response situations. For more information, visit the [Drinking Water Inspection Services webpage](#).



Community development and partnership section

This section provides technical, managerial, and financial assistance through three respective units: the local assistance unit, the grants and loans unit, and the source water and emerging contaminants unit.

The local assistance unit is responsible for providing training, technical assistance, and management support services directly to public water systems to strengthen their ability to supply safe drinking water to the public and eliminate the potential for waterborne diseases. Unit activities include:

- Coaching and assistance.
- Capacity building.
- Expert advice and assistance on operator certification policy and regulation.
- Training.

- Security and emergency response services.
- Reports and publications.
- Liaison to the Water and Wastewater Treatment Facility Operator Certification Board.

For more information, visit the [Training Opportunities, Recognition, and Resources for Water Systems webpage](#).

The grants and loans unit is responsible for working with communities to assist with water and wastewater project development to better protect public health and the environment. The unit also manages several state grant programs along with the federal State Revolving Loan Fund Programs that offer subsidized financing to support these water-related projects. For more information, visit the [Water Quality Grants and Loans webpage](#).

The source water and emerging contaminants unit provides training, technical assistance, and management support services to public water systems to strengthen their ability to supply safe drinking water to the public. Unit activities include:

- Facilitating the completion and implementation of source water protection plans.
- Emerging contaminant support concerning guidance and policy development.
- Responding to acute drinking water situations.

For more information, visit the [Source Water Assessment and Protection webpage](#).

The infrastructure unit supports federal-funded infrastructure projects and lead testing in schools and daycares. Specific unit activities include:

- Helps administer federally-funded water infrastructure projects as part of the Bipartisan Infrastructure Law.

- Implements a state-funded program that supports drinking water testing for lead in schools and daycares.
- Provide funding to schools and daycares to remediate fixtures and other infrastructure associated with lead testing values that exceed five parts per billion.

For more information, visit the [Water Quality Grants and Loans webpage](#).

Public Participation

Colorado has an extensive public participation process associated with developing the Integrated Report that is informative and open. In addition to the public processes in place for updating the 303(d) Listing Methodology and the 303(d) List of Impaired Waters, a process is also in place for revising the 305(b) portion of the Integrated Report. A summary of all of these public processes is included below.



Listing methodology

The 303(d) Listing Methodology is reviewed and updated every two years in anticipation of the 303(d) List of Impaired Waters development. The division held stakeholder workgroup meetings to develop the 2024 Section 303(d) Listing Methodology on September 15, October 14, and November 10, 2021. The 303(d) Listing Methodology was available for public comment in January 2022 and then approved by the commission at the public administrative action hearing on March 14, 2022. The commission considered all comments received and encouraged public participation at the administrative action hearing.

Click the button below to view the public comments and documents of the 2024 303(d) Listing Methodology administrative action hearing.

[303\(d\) Listing Methodology AAH](#)

Water quality data call

The division solicited water quality data from June to September 2021 and 2022 for data collected in the basins of focus. The period of record for data collected in the Arkansas River and Rio Grande Basins (Regulations 32 and 36) was from January 2016 to December 2020. Additionally, the period of record for data collected in the Upper and Lower Colorado River Basins (Regulations 33 and 37) was from January 2017 to December 2021.

303(d) List of Impaired Waters

The division encouraged public participation during the rulemaking process for the adoption of the 2024 Section 303(d) List of Impaired Waters (Regulation 93). The public was formally notified of a 28-day public comment period from February 23, 2023, to March 22, 2023. The commission considered all public comments and adopted the 2024 Section 303(d) List of Impaired Waters (Regulation 93) at the May 8, 2023, public rulemaking hearing.

Click the button below to view the public comments and documents of the 2023 Regulation 93 rulemaking hearing.

[Regulation 93 Rulemaking Hearing](#)

305(b) portion of the Integrated Report

The division provided notice of a 29-day public comment period for the 305(b) portion of the 2024 Integrated Report. The 305(b) report was available for public comment on the commission's website from September 1, 2023, to September 29, 2023, and then approved by the commission at a public administrative action hearing on October 10, 2023.

How to get involved

If you want to be involved in future 303(d) Listing Methodology workgroups to review and update the document, visit the division's [303\(d\) Listing Methodology Engagement webpage](#).

If you want to submit data for future water quality data calls, visit the division's [Rivers, Lakes, and Streams Data webpage](#) for data submission templates, instructions, and other information.

If you want to participate in the 2026 303(d) List of Impaired Waters (Regulation 93) process - sign up to [receive the commission hearing notices](#).

If you want to learn more about engagement opportunities with the division, visit the [Water Quality Engagement webpage](#).

Resources

Want to know more?

[Read the division's annual report](#)

[Learn how to get involved](#)

[How to contact the division](#)

[Visit the commission's website](#)

[Visit the division's website](#)

Thank You!

[Accessibility statement and support](#)

References

U.S. Environmental Protection Agency. Integrated Reporting Guidance under CWA Sections 303(d), 305(b) and

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[under Section 303\(d\) of the CWA | US EPA.](#)

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