

3<sup>RD</sup> EDITION

# The Clean Water Act

## OWNER'S MANUAL



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2nd Edition July, 2005; 3rd Edition October, 2022

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WE'D LIKE TO THANK THE FOLLOWING INDIVIDUALS FOR THEIR CONTRIBUTIONS TO THIS UPDATE AS PART OF OUR ADVISORY GROUP:

Amanda Aspatore, National Association of Clean Water Agencies  
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WE WOULD ALSO LIKE TO THANK THE FOLLOWING INDIVIDUALS FOR THEIR CONTRIBUTIONS TO THE UPDATE:

Brian Crossley, Albert Ettinger, Kelly Foster, Ellen Gilinsky, Adam Griggs, Ted Knight, Paul Koberstein, Ellen Kohler, Nick Larkin, Thea Louis, Lauren Matosziuk, Betsy Nicholas, George Parrish, Larry Stone, Lynn Thorp, Brett VandenHeuvel, and Steve Veysey.

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*Production of the third edition is based substantially on the previous editions and the content developed by Don Elder, Paul Koberstein, Gayle Killam, and so many others who contributed their expertise:*

Bob Adler, Todd Ambs, Karl Anuta, David Bayles, Nina Bell, Angie Bera, Navis Bermudez, Gary Broetzman, President Jimmy Carter, Gershon Cohen, Rachel Conn, George Constantz, Alex Cyril, Sean Darcy, Geoff Dates, Cam Davis, Ann deRidder, Danielle Droitsch, Albert Ettinger, Andrew Fahlund, Carie Fox, Merritt Frey, Bonnie Gestring, the late Ralph Goodno, Jean Hamilla, Megan Hooker, Barb Horn, Mike Houck, Eric Huber, Margaret Janes, Jessica Landman, the late Peter Lavigne, David Ludder, Kathy Luscher, Ken Margolis, Scott McEwen, Brad McLane, Rob Moore, Vicki Murillo, Deborah Murray, Kathy Nemsick, Jessica Pitelka Opfer, Jo Ostgarden, Betsy Otto, Tim Palmer, Rick Parrish, Judy Petersen, Bryan and Eldon Potter, Liz Raisbeck, Mark Riskedahl, Francie Royce, Wendy Schwab, Cindy Skrucrud, Mary Lou Soscia, Carrie Stillwell, Nancy Stoner, Barry Sulkin, Charlie Tebbutt, Justine Thompson, Ann Vileisis, Brian Wegener, Beth Wentzel, Thalia Zapatos, and Laura Ziemer.

Some text and figures that previously appeared in the publications River Network produced on its own or in collaboration with other organizations have been modified or updated and used in this edition.

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RIVER NETWORK EXTENDS GRATEFUL THANKS TO THESE DONORS FOR THEIR SUPPORT OF THE UPDATE TO THE OWNER'S MANUAL:



# HOW TO USE THIS MANUAL

The Clean Water Act (CWA) is a 50-year-old law that was a transformational update to federal water quality laws enacted as far back as the turn of the twentieth century ([see p.14 Evolution of the CWA](#)). This *Owner's Manual* was originally created to share the many ways that every person can improve water quality where they live. It has helped them track, influence, and change the way the law is implemented at federal, state, and local levels. Over the 20+ years since the first edition was published, thousands of people have used it to apply the Clean Water Act to problems they faced in their communities and watersheds.

Laws are a product of the time in which they are passed and express the viewpoints and knowledge of those who draft them. We are in a fundamentally different time than 1972 when the CWA was passed, when untreated sewage, rendering wastes, and countless industrial chemicals were often dumped directly into rivers. While those issues have been directly addressed, we still face sewage and chemical pollution in addition to existential challenges. The lawmakers of the 1970s did not foresee how the CWA would be applied inequitably in different communities. Yet it has. Nor did lawmakers perceive the early warning signs of climate change or predict how they would complicate application of the Act. Yet they have.

As we explain the CWA's tools, we have paid close attention to how exposures to pollution sources—and the unjust application of the Act—have disproportionately harmed certain communities. The CWA gives us the power to correct these injustices. We also highlight numerous consequences of climate change and how our response to them will require changes to how we implement the CWA.

In the following pages, you will find icons that are explained in the “Quick Reference” [sidebar, p. 9](#). These icons will direct your attention to details or references for what is written in the narrative.

## The sections of the Manual are as follows:

### Featured Communities

In the earliest pages, we introduce five featured communities, the pollution sources they are exposed to, and the CWA programs that have been or can be applied in those situations. You will also find more thorough accounts of their stories on [River Network's website](#). We will refer to them several times in the relevant CWA program areas.

### Objective, Goals, and Application of the Act

Our starting point for CWA advocacy is to understand the Objective and Goals of the Act and the waters they protect, as well as how the various CWA programs work together.

### Problems and Strategies for Action

Part 1 guides the reader to the CWA programs that are most commonly used to address specific problems. These problem descriptions are meant to be representative, not comprehensive. Because the Clean Water Act is not implemented, nor does it succeed, in a vacuum, references are made to Part 3 where other federal and state laws that are or should be coordinated with CWA programs are briefly explained.

### Clean Water Act Programs

Part 2 dives into the details of several CWA program areas. In each of those areas, sidebars provide: statute, regulatory, and case law citations; deeper explanations of concepts introduced in the narrative; important considerations of equity and justice; and ways to take climate change into account. Throughout the subparts, ideas for taking action are suggested in “Action Checklists.”

### Coordination with Other Federal (and some state) Laws

Part 3 briefly summarizes many federal laws, and some state versions of those laws, which are used in coordination with CWA strategies and have been mentioned in Part 1.

### Finding the Information You Need

This chart summarizes where you can find data and information that will help you engage with the Clean Water Act programs.

### Glossary

Many terms and acronyms have specific meaning within the context of the CWA. The Glossary compiles definitions that will help you engage effectively with the opportunities for comments, public hearings, and appeals.

# THE CLEAN WATER ACT BELONGS TO YOU.

Without community attention to local waters, full protection of the many uses and functions of those waters cannot be achieved. Today, with limited resources at the local, state, and federal levels, and significant political pressure focused on weakening CWA protections, most implementation and enforcement actions taken under the CWA are “complaint-driven.” Concerned individuals are THE driving force behind achieving the Act’s objective and goals. Together we must continue to build strong teams of locally-involved individuals who track changes in their waters, ask hard questions, and insist on implementation and enforcement of the CWA in ways that are just, advance equity, and take climate change into account.

At no time since the Clean Water Act was passed in 1972 has our vigilance been so important. We must rise to the challenges and implement the vision of this law equally for all as we look ahead to the next 50 years of a changing climate.



# CENTERING ENVIRONMENTAL JUSTICE & CLIMATE CHANGE

*“That path of neglect oftentimes follows a pattern that emanates from racial redlining and a funding pattern that’s equivalent to apartheid. You have biased planning, biased policies, biased funding that will result in a disparate impact ... on populations that have contributed least to the climate crisis.”*

– Dr. Robert Bullard, Director of the Bullard Center for Environmental and Climate Justice at Texas Southern University<sup>1</sup>

**The Clean Water Act’s goal is to restore and maintain the integrity of the Nation’s water, integrity that is pollution-free.**

Throughout its fifty-year history, the Clean Water Act has never been implemented or enforced evenly. Implementation and enforcement tends to be weaker in low-income communities and communities of color.<sup>2</sup> Pollution and equitable access to non-polluted waters are environmental justice issues, yet the Act makes no explicit mention of environmental justice.

**ENVIRONMENTAL JUSTICE** recognizes the unique and often severe harms that marginalized communities systematically face in their relationship with the environment. Environmental justice aims to fairly and meaningfully involve all people in environmental decision making, grant equal protections from environmental hazards, and respect cultural and ecological relationships with the environment.

Although the United Nations has declared access to clean water a human right, there is a strikingly unequal pattern of access to clean water across the United States. Because institutions, laws, and regulations exist and were created within white dominant culture, the measurements of “clean” often don’t accurately or fully take into account harmful exposures from eating tainted fish, ingesting polluted water during ceremonies, or living in communities riddled with multiple pollution sources.

Regular water quality assessments often don’t capture the worst case scenarios that some communities experience on a regular basis—the raw sewage overflows, the treatment pond failures, the fish with lesions, or the groundwater contamination. Impacted communities often do not know where they can turn for help to improve their situation.



## EQUITY & JUSTICE RESOURCES

[\*River Network’s Water & Equity Mapping Tools\*](#)

ELI and GWU School of Law, [\*Reimagining Environmental and Natural Resources Law\*](#), Dec21, Chapter 5: Environmental Justice

American Rivers, [\*Water Justice Toolkit\*](#), 2020

EPA, [\*Legal Tools to Advance Environmental Justice\*](#), 2020, Chapter 2: Water Programs





## CLIMATE CHANGE RESOURCES

[EPA - Water as a Climate Change Solution](#)

[Blue Carbon Initiative](#)

### QUESTIONS TO ASK AS WE UTILIZE THE CLEAN WATER ACT

#### Centering Equity

- Are the communities most affected meaningfully involved in the public processes? Has their knowledge informed the process? Are you partnering with them?
- Are the opportunities for public participation genuine or are they simply boxes to check?
- Are the standards developed with the most sensitive uses and user groups in mind?
- Are the permits protecting the most sensitive uses and user groups?
- Have the most polluted waterways been prioritized for enforcement and remediation?
- Are the regulations, guidance documents, plans, permits, and implementation plans developed with implicit biases? How can we identify and rectify them?

#### Climate Awareness

- Are standards and permits developed with the most current precipitation, streamflow, and temperature data?
- Are permits taking into account priorities for protecting riparian and coastal areas (wetlands, dunes, barrier islands, peninsulas) due to their ability to attenuate flooding and sea level rise?
- Are plans and permits taking into account the need to maximize green infrastructure and limit impervious cover?
- Are permits taking into account increased likelihood of extreme events that can blow out treatment or settlement ponds or flood contaminated areas?

Too many low-income communities and communities of color live right next to polluters whose toxic discharges continually make people sick. Twelve percent of the 46,000 industrial polluters in the country are in “significant noncompliance<sup>3</sup>” with their state-issued water pollution permits.<sup>4</sup> These “worst of the worst” polluters generate 90% of the pollution in or near systemically underresourced communities, most often densely populated by people of color.<sup>5</sup> What’s more, this disproportionality effect becomes more pronounced when public health risks are also considered. The dangerous combination of toxic pollution and associated health risks in these communities creates an insidious effect known as double disproportionality.

These inequities compound other burdens placed on environmental justice communities, such as disparities in drinking water quality, greater exposure to air pollution, and proximity of noxious facilities like landfills, coal plants, and refineries, resulting in a “two-tiered system” where the wealthy enjoy a safe and clean environment while others live in an environment posing significant risks to their health.<sup>6</sup> Exposure to environmental hazards is heavily influenced by decades of redlining and other discriminatory housing, lending, and development policies and patterns.

**CLIMATE CHANGE** is exacerbating existing environment-related health risks, and climate justice must be taken into account. Although climate change affects everyone, socially, politically, and economically-disadvantaged communities face the greatest risk because of where they live, their health, income, language barriers, and limited access to resources.<sup>7</sup> These communities are more vulnerable to the deadliest consequences of climate change, including extreme and prolonged heat, deadly wildfires, and extreme weather events like flooding, hurricanes, and drought that are increasing in frequency and severity.

**FLOODING** potentially affects forty million U.S. residents who live along rivers and streams.<sup>8</sup> A disproportionate number of people of color live in watersheds that are polluted with toxic waste, exposing them to two hazards—flooding and pollution. Floodwaters carry this contamination into homes and other heavily used areas where people live, play, and go to school. People of color and low-income individuals are less likely to have resources needed to escape or recover from the impacts of climate change-induced disasters.

**DROUGHTS** render clean water more scarce, impair access to clean water, wither vegetation needed for cooling and filtering of pollutants, increase the risk of wildfire, and decrease stream flows and snowpacks. Rising temperatures melt glaciers and polar ice sheets, contributing to sea level rise, reducing the availability of freshwater due to salt water intrusion, and exacerbating the coastal impacts of hurricanes and tsunamis. Rising sea levels are among the most terrifying effects of climate change because with higher water comes inundation of contaminated sites in coastal areas. In California, sea levels are likely to inundate some four hundred toxic waste sites by 2100, exposing nearby residents to hazardous pollutants. These worst-case scenarios of coastal flooding impact everyone, but they are particularly damaging to the low-income communities and communities of color who are disproportionately located in or around toxic waste sites.<sup>9</sup>

Disparities, disproportionately negative impacts, and environmental injustices like those described here hinder both social and ecological progress. As the impacts of climate change worsen, understanding and acting on justice issues—both environmental and climate—will be even more important.

## AMPLIFYING COMMUNITY VOICES

State governments—agencies as well as legislatures—contribute to these inequities when they establish priorities, invest or fail to invest resources, and set weaker standards due to industry pressure. Disproportionately-exposed communities tend to have less political power and fewer resources than more affluent and predominantly white communities. Communities often can't afford to hire technical or legal help to document or address pollution problems. Opportunities to voice community concerns are often hindered, and concerns raised are often ignored. Whereas, communities with more resources are better equipped to persuade state agencies to act against chronic and noncompliant polluters.

Who listens to the communities that are downstream from the sewage overflows, adjacent to the manure treatment ponds, at risk from toxic contaminants seeping out of coal ash ponds and abandoned mines, or flowing with every heavy rain down their ephemeral waters?

The truth is that the Clean Water Act has been implemented in different ways in different communities. Some people are enjoying the successes of the CWA, including effective sewage treatment, improvements to industrial wastewater controls, strong standards that take the most sensitive uses of water into account, investments in infrastructure, and robust public participation requirements. Others are not so fortunate. What about the communities that lack adequate wastewater treatment, suffer health problems stemming from decades of exposure to toxic pollution, live in jurisdictions with weak water quality standards that don't protect sensitive water uses, and struggle with lack of transparency and minimal public avenues to improve the situation?

The Clean Water Act elevated public participation in its opening section:

*Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish regulations specifying minimum guidelines for public participation in such processes.<sup>10</sup>*

We must ensure this section of the CWA is implemented with a new lens on each and every CWA program. We must also question and challenge whether all communities are served adequately and equitably.

**As the CWA 50th anniversary passes, there is hope. There are so many ways that the implementation and enforcement of the CWA can and must improve and respond to the priorities of our time. Examples include, but are not limited to:**

- Improved outreach to impacted communities during public notice and hearings
- Incorporation of exposure rates of most-affected populations into calculations of water quality criteria, such as tribal and subsistence rates of fish consumption
- Strategies to guard against investments that may lead to gentrification and displacement
- Use of current and projected precipitation and streamflow data in development of permits and restoration plans
- Increased awareness of cumulative pollution burdens on communities when authorizing additional pollution loads

**Wherever possible, we will shed light on these needed changes.**



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## Quick Reference:

A key to icons used in this manual



**CWA Statute, CWA Regulation:** Language from the text of the Clean Water Act and the federal regulations that implement the CWA; sometimes quotes, sometimes paraphrased.



**Digging Deeper:** Background and details on a particular topic.



**For More Info:** Where to find other resources on specific topics.



**Take Action:** Public involvement and action opportunities that are more specific than in Action Checklists at the end of each section.



**Featured Communities:** Examples of how the CWA has been put to work.



**Climate Change:** Explanation of how a program needs to adjust to address impacts of climate change.



**Centering Equity & Justice:** Explanation of how a program needs to take low- income, disadvantaged, and communities of color into consideration.



**Moving Target:** Explanation of the uncertainties in play for some programs.

# FEATURED COMMUNITIES

In an effort to bring the detailed and technical components of the CWA to life, five community stories are shared throughout the Manual. We introduce you to these communities below. The connections between their stories and the CWA are included throughout the programs in Part 2. Longer versions of their stories can be found on [River Network's website](#).

## Bartram's Garden (Southwest Philadelphia)

Chloe Wang, Bartram's Garden



The Schuylkill River, one of the Delaware River Basin's largest tributaries, spans from its mountainous headwaters in eastern Pennsylvania to its confluence south in Philadelphia. The Schuylkill provides recreation and drinking water for its surrounding communities, and vital habitat for fish and wildlife. [Bartram's Garden](#) (The Garden) is a historic botanical garden and public park located in Southwest Philadelphia, along the lower, tidal portion of the Schuylkill River. With the only public dock on the tidal Schuylkill, Bartram's Garden Community Boathouse offers free boating and fishing programs for thousands of visitors each year, increasing access to water recreation for Philadelphia residents. Paid local high school interns in Bartram's Garden's Denkyem River Guardians program help to operate Boathouse programs. They learn about, and build relationships with, the Schuylkill through the lenses of science, history, arts, and culture.

### THE PROBLEM

There are 40 Combined Sewer Outfalls (CSOs) on the tidal Schuylkill River, several of which are located in close proximity to the Garden's boat docks, where the community boating program launches and where locals take advantage of the prime fishing spot. The river offers respite and recreation in an otherwise bustling city. However, the immense presence of CSOs along the river can create unsafe conditions for recreation, and the Garden is often forced to cancel its boating programming. This section of the Schuylkill River, as well as the mainstem Delaware River through Philadelphia, is not protected for primary contact recreation under the Clean Water Act, yet recreation on the water frequently occurs.

Barriers to upgrading the recreational use designation of this section of the river have been extensive—including a lack of data and understanding of the pollution sources and impairment levels, lack of attention by agencies, unclear division of responsibility between agencies with overlapping jurisdiction, and opposition to increased regulations from industries discharging into the river. To address the lack of monitoring and consequent lack of action by agencies, the Garden decided to start collecting its own data with volunteers and high school students whose love for the river has grown through their involvement in existing education and recreation programs.

[Read the more detailed story on River Network's website.](#)

## Plaquemines Parish (Gulf South)

Matt Rota, Healthy Gulf, in long-term partnership with residents of Plaquemines Parish

Plaquemines Parish (Louisiana calls its counties parishes) borders the Mississippi River throughout its final 70 miles. Dozens of polluting industries border the river throughout its final sprint to the Gulf of Mexico. With increased hurricane intensity and rising seas, Plaquemines Parish, especially Black and Indigenous communities, have struggled to maintain its communities and ways of life. Communities such as Ironton, one of Coastal Louisiana's oldest Black communities, and the Grand Bayou Indian Village, home to the Atakapa-Ishak/Chawasha Tribe are under constant threat from industrial pollution as they struggle to recover from seemingly endless hurricanes.<sup>11,12</sup>

### THE PROBLEM

During monitoring flights after the BP Oil Drilling Disaster, organizations started to notice that every time they flew over the United Bulk Terminals coal and petroleum coke (petcoke)<sup>13</sup> operation, a black plume could be seen stretching from the facility down the Mississippi River. The United Bulk Terminal is basically a massive pile of coal and petcoke and the equipment and conveyors that load and unload that coal and



petcoke from and to barges and ships on the Mississippi. Every time they flew over, observers saw this plume, especially when ships were loaded and unloaded.<sup>14</sup> EPA has determined that when water runs off coal and petcoke piles, the water can flush heavy metals, such as arsenic and lead, into nearby bodies of water.

[Read the more detailed story on River Network's website.](#)

Photo courtesy Healthy Gulf.

## Communities for Clean Water (Northern New Mexico)

Rachel Conn, Amigos Bravos, member organization of CCW



**Communities for Clean Water** (CCW) is a coalition of New Mexico land-based, Indigenous, faith, and environmental organizations whose mission is to ensure that community waters impacted by Los Alamos National Laboratory (LANL) are kept safe for drinking, agriculture, sacred ceremonies, and a sustainable future.<sup>15</sup> CCW member organizations are rooted in a variety of traditions and share a common awareness that caring for clean water is a moral and ethical responsibility.

### THE PROBLEM

Toxic waste from Los Alamos National Laboratory (LANL) continues to enter the waters of the Rio Grande watershed—including drinking and irrigation water shared by downstream tribal communities, Santa Fe, Espanola Valley, Albuquerque, Los Alamos, and other surrounding communities. The Department of Energy (DOE) has identified over 2,100 unlined dump sites at LANL containing harmful toxins including PCBs, hexavalent chromium, PFAS, 1-4 dioxane, heavy metals, and radionuclides.

These toxins readily bind to soil, and each time there is a rainstorm or snowstorm, they are washed into the many canyon streams on LANL property. From the canyon streams, the toxins flow into wetlands, groundwater, and the Rio Grande. When disturbed by stormwater, forest fires, or human activity, toxins are also released into the air and enter the water of downwind and downstream communities. These communities, living on the sacred lands of Tewa Peoples, depend on clean water for drinking, sacred ceremony, reproduction, growing food, raising animals, recreating, and overall well-being.

[Read the more detailed story on River Network's website.](#)

Photo courtesy Amigos Bravos.

## Save Bloody Run Creek (Northeast Iowa)

Steve Veysey and Larry Stone

Amidst the beauty of deep-cut limestone valleys, towering cliffs, subterranean caves, sinkholes, and cold-water springs, the karst region of northeastern Iowa, southeastern Minnesota, and southwestern Wisconsin is known far and wide as the Driftless Area. Bloody Run Creek, an Outstanding Iowa Water, runs into the Mississippi River at Marquette, Iowa, population 448. Sinkholes, often leading to underground caves and springs, form in the fractured and soluble limestone underneath shallow layers of till and are direct conduits for pollution to enter the aquifer within minutes.

The “[Committee to Save Bloody Run](#),” local community groups, and the Iowa Chapters of the Sierra Club and Trout Unlimited, are working together to protect this unique ecosystem from a new, 12,000-head cattle feedlot built in Bloody Run Creek’s headwaters.

### THE PROBLEM

In 2017, Walz Energy (now Supreme Beef LLC), began construction of a concentrated animal feeding operation (CAFO). Six massive cattle barns have been built adjacent to five sinkholes. A lagoon, located in the middle of a FEMA floodway, was approved for the industrial effluent associated with a planned methane digester. When the

digester plan was scrapped, however, the lagoon site became a 39-million gallon earthen manure basin. Under Iowa law, earthen manure basins are prohibited in karst terrain unless there is 25 feet of separation to the bedrock, yet, bedrock is less than 10 feet below the bottom of this basin. The “nutrient management plan” required for the operation projected spreading 30 million gallons of liquid manure per year in the watersheds of Bloody Run Creek and nearby streams where hundreds of additional sinkholes are scattered.



The Clean Water Act (CWA) regulates point source pollution, yet in Iowa, most pollution is agricultural non-point source pollution which creates more hurdles in legally challenging water quality issues. Therefore, it is even more important that the CWA programs that apply to waters in agricultural areas such as those relevant in Bloody Run Creek—water quality standards, antidegradation, CAFO NPDES permits, water quality restoration plans (TMDLs), and construction stormwater permits—be properly implemented.

[Read the more detailed story on River Network’s website.](#)

Photo by David Thorenson.

## Spokane Tribe of Indians (Pacific Northwest)

Ted Knight and Brian Crossley

The [Spokane Tribe of Indians](#) is a federally recognized Indian Tribe. The Tribe’s Reservation was established by Executive Order on August 18, 1877 after the Tribe was forced from parts of its homeland by the United States government. The Tribe’s ancestral lands encompassing an area of almost 3 million acres include the entirety of the Spokane River as it flows through what is now Washington State and portions of the Columbia River. The Tribe has a legally defensible right to water of a quality that can sustain fish and other aquatic life, and the Tribe retains ownership of the original beds and banks of its Reservations’ boundary waters which are the Spokane River, the Columbia River, and Tshimakain Creek.

Spokane ancestors were, and the Tribe continues to be, a river people. Eighty percent of their diet before the arrival of settlers consisted of what was taken from the waterways in the form of salmon, steelhead, lamprey, and shellfish. This continued until the construction of Little Falls and Grand Coulee Dams, which blocked anadromous fish from making their return to the Tribe’s lands and waters.

### THE PROBLEM

Sections of the Spokane River have been on Washington State’s Impaired Waters List for decades due to dangerous levels of polychlorinated byphenyls (PCBs) in fish tissue.

The Tribe adopted new standards in 2010 based on a fish consumption rate of 865 grams of fish per day to recognize a subsistence quantity of fish consumption and 4 liters per day of water intake. These assumptions resulted in a PCB surface water quality standard of 1.3 pg/L for total PCBs, contrasted with Washington’s much higher PCB water quality standard (as of October 2022) of 170 pg/L. The new Tribal standards were approved by EPA in December of 2013.

Five upstream pollution discharge permits were updated in 2022 after being administratively extended—meaning they were not updated—for seven years. The CWA requires that these permits limit their pollution discharge to protect the downstream uses in the Spokane Indian reservation. To do that, the permits would need to ensure the PCB standard of 1.5 pg/L is met downstream. Unfortunately, the recently-renewed permits are only required to control their discharge of PCBs to meet the water quality criterion of 170 pg/L, based on Washington State’s current water quality standards.



[Read the more detailed story on River Network’s website.](#)

Photo courtesy Spokane Tribe of Indians.



# OBJECTIVE, GOALS, AND APPLICATION OF THE ACT

Clean water is everyone's business. Everyone needs it. Almost all Americans say they're willing to change habits and pay more, if necessary, to get it. An overwhelming majority<sup>16</sup> of us support the Clean Water Act (CWA) as strongly as any law. Increasing numbers of community members are interested in making more effective use of it, in conjunction with other practical tools, in their efforts to protect their local waters.

You don't need to be an expert on the CWA to make good use of it. Keeping in mind a few basic ideas, understanding a few key principles, and remembering a few important facts is enough.

## Evolution of the Clean Water Act

1899

**Rivers and Harbors Act of 1899 (a.k.a., Refuse Act)** – prohibit dumping into navigable waters, control-at-the-source

1948

**Federal Water Pollution Control Act** – waste disposal was fundamental use of water; primary responsibility with states; narrower jurisdiction—only interstate waters (broadly applied but narrower than all navigable); abatement lawsuits only when danger to health or welfare of persons in a different state from the discharge; state could veto federal lawsuits

1956

**Act of July 9, 1956** – definition of interstate waters narrowed; more delay added to administrative process

1961

**Federal Water Pollution Control Amendments of 1961** – interstate waters again broadened to 1948 definition; federal authority expanded to address pollution affecting those within same state as the discharge; still no effective federal enforcement mechanism

1965

**Water Quality Act of 1965** – water quality standards introduced; protection no longer tied only to public health and welfare

1966

**Clean Water Restoration Act of 1966** – mandatory reporting requirements for discharges; civil penalties for noncompliance

1970

**1970 Water Quality Improvement Act** – nationally uniform control strategy; oil pollution included with national spill contingency plan and revolving fund; civil and criminal penalties for past acts of pollution; control of hazardous substances; federal licensing for discharges required compliance with water quality standards

1972

**Federal Water Pollution Control Act Amendments of 1972 (a.k.a., Clean Water Act)** – established basic structure for regulating pollutant discharges; gave EPA authority to implement pollution control programs; reinforced water quality standards requirements; funded sewage treatment plant construction; addressed nonpoint source pollution

1977

**Clean Water Act Amendments of 1977** – “midcourse corrections”; increase emphasis on control of toxic pollutants

1987

**Water Quality Act of 1987** – changed grants to state revolving loan programs; antibacksliding, nonpoint source production management, administrative penalties, and expanded judicial review

SOURCES:  
Fogarty, John P.C., “A Short History of Federal Water Pollution Control Law,” 1991 Clean Water Deskbook, The Environmental Law Reporter, 1991.

Liebesman, Lawrence R., and Laws, Elliot P., “The Water Quality Act of 1987: A Major Step in Assuring the Quality of the Nation’s Waters,” 1991 Clean Water Deskbook, The Environmental Law Reporter, 1991.

The Clean Water Act begins with an objective and a set of goals and policies that are the basis for the entire law. Referring to the objective and these goals and policies in your work to protect waters can be very powerful and influential.

### THE OVERARCHING OBJECTIVE OF THE CWA IS:

*To restore and maintain the chemical, physical, and biological integrity of the nation’s waters.<sup>17</sup>*

This is a powerful statement of the national policy that directs full protection of the nation’s waters against all forms of pollution. In order to get to that end result, Congress developed more specific goals and policies that the nation could strive toward first.

CWA programs have been developed at the federal, tribal, and state levels to meet these goals. These programs are implemented primarily at the tribal and state levels. The CWA requires federal, tribal, and state governments to allow, encourage, — and assist interested individuals to be involved in policy and program decisions. In general, the greater the public involvement, the better these decisions have been and will be.

### INTERIM GOALS:

- 1 Eliminate discharge of pollutants into the navigable waters by 1985.
- 2 Achieve water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water by July 1, 1983.

### POLICIES:

- 1 Prohibit the discharge of toxic pollutants in toxic amounts.
- 2 Provide financial assistance for public wastewater treatment.
- 3 Develop areawide waste treatment management plans.
- 4 Invest in technology sufficient to eliminate discharges.
- 5 Develop and implement programs for the control of nonpoint sources of pollution in an expeditious manner.<sup>18</sup>



## OBJECTIVE, GOALS, AND POLICY OF THE ACT

“The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this chapter –

1. it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;
2. it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;
3. it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
4. it is the national policy that Federal financial assistance be provided to construct publicly owned waste treatment works;
5. it is the national policy that areawide waste treatment management planning processes be developed and implemented to assure adequate control of sources of pollutants in each State;
6. it is the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and the oceans; and
7. it is the national policy that programs for the control of non-point sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this chapter to be met through the control of both point and nonpoint sources of pollution.”<sup>19</sup>



## LEVELS OF ENGAGEMENT

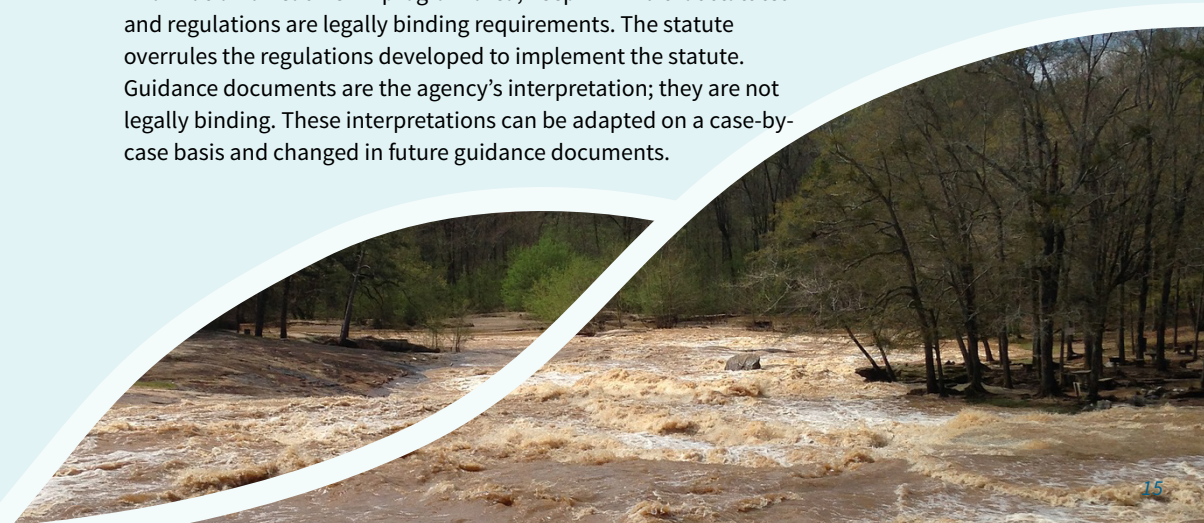
There are several ways that you can engage with the Clean Water Act and, depending on the issue, you will need to decide which is the most productive and worth your time. It is not possible to engage at every level.

- **Federal statute** – the Clean Water Act words themselves
- **Federal regulations** – the detailed ways that the CWA must be implemented
- **State and tribal regulations** – the specifics about how your state or tribe will implement the CWA
- **State permits, sometimes Pollution Management Plans** – the tools that are developed to assign controls and responsibilities to pollution sources
- **Local ordinances** – locally specific details
- **Controls in place, Best Management Practices (BMPs)** – specific practices that are allowed or required
- **Monitoring and inspection** – how compliance is measured
- **Enforcement** – what is done if pollution sources are not complying



## STATUTE? REGULATION? GUIDANCE?

When in doubt about how to interpret apparently contradictory information on each CWA program area, keep in mind that statutes and regulations are legally binding requirements. The statute overrules the regulations developed to implement the statute. Guidance documents are the agency’s interpretation; they are not legally binding. These interpretations can be adapted on a case-by-case basis and changed in future guidance documents.



# WATERS OF THE UNITED STATES, TRIBAL LANDS, AND STATES

## What waters are protected by the Clean Water Act?

As is stated above, “the Nation’s waters,” or [Waters of the United States \(WOTUS\)](#), are legally required to be restored and protected by the CWA. The process for determining which waters meet the definition of [WOTUS](#) was relatively stable until 2001. A U.S. Supreme Court decision that year (known as [SWANCC](#)<sup>20</sup>) and a subsequent decision in 2006 (known as [Rapanos](#)<sup>21</sup>) resulted in inconsistent application of CWA requirements and confusion among federal and state agencies about which waters were covered by the Act. Efforts to clarify the rulings through legislation and rulemaking resulted in a dramatic politicization and polarization of the concept, with clean water interests advocating for the broadest application and some development, industrial, and agricultural interests wanting a very narrow definition. The EPA, in a rulemaking process in 2015, leaned toward the broader protections, but excluded some critical protections that existed beforehand. Subsequently, in 2020, the regulatory definition was dramatically scaled back and left large numbers of waters across the country unprotected. However, that definition was vacated by two federal district courts in 2021. This resulted in restoration of the definition in place prior to 2015 (the 1986/88 WOTUS Definition). In 2022, EPA and the Army Corps proposed yet another definition that is more protective than the 2020 definition, but it still leaves many historically protected waters without CWA protections.

**Continued changes to the WOTUS definition are expected**—visit [River Network’s WOTUS webpage](#) to find up-to-date information on the current WOTUS definition.

## What does this mean for waters I care about?

In order to understand whether the CWA tools—its water pollution permits, water quality standards, required assessments, restoration plans, infrastructure funding, nonpoint source pollution requirements, and many other provisions—apply to the waters you care about most, you first need to determine whether those waters fit the [current](#) definition of WOTUS or the definitions of state waters. Some states or tribes have a broad definition of jurisdictional waters.<sup>22</sup> A state or tribal definition can provide broader protections under the CWA programs that are implemented at the state level or delegated to the state or tribe. Some CWA programs are generally implemented by a federal agency such as **Section 404 Discharge of Dredge and Fill Material (p. 112)** and will most often depend on the federal WOTUS definition. This is true even in some waters within states that have assumed substantial authority of that program (e.g., New Jersey, Michigan, and Florida).

In jurisdictions that do not have the authority to implement their own pollution discharge permit program<sup>23</sup> (**NPDES, p. 75**), all the NPDES programs are affected by the changes to the WOTUS definition.

## How does this apply to tribal waters?

Waters within tribal reservation areas, waters considered tribally significant, waters within ceded lands, waters supporting cultural and ceremonial activities, and waters supporting traditional hunting, gathering, or fishing may all be considered tribal waters. Under the CWA, however, there is not a separate definition or method to determine such tribal waters for the purposes of CWA programs either implemented by tribes or by EPA. Several water quality standards developed by Tribes have included a “waters



of the Tribe” or “waters of the Reservation” definition. However, since EPA administers the NPDES program on all tribal lands except in Maine, and the U.S. Army Corps of Engineers (Corps) administers the Section 404 program on tribal lands, any changes to the definition of WOTUS significantly impacts permitting on tribal lands.<sup>24</sup>

## How do I find out whether waters I care about fit into the current definitions?

Applying the current definition may be straightforward for some waters that clearly fit into categories that are jurisdictional. If you are interested in activities going on in or around waters that are not as clearly included, it may be necessary to request a “jurisdictional determination” (JD) from the Corps or EPA. You can access JDs approved by the Corps or EPA since 2015 from this [website](#) or going back to 2013 by Corps District from the Corps [website](#).





# CLEAN WATER ACT PROGRAMS

As you jump into the details of CWA programs, it is worth understanding a little bit about each one and how they relate to each other.

From the objectives, goals, and policies, the **Water Quality Standards** (p. 47) establish the processes for identifying the uses in waters and the protective criteria necessary to fully support those uses. The antidegradation policy, part of water quality standards, connects to the “maintain the integrity of the Nation’s waters” part of the overarching CWA objective. The CWA gives states and eligible tribes the privilege of reviewing and certifying all federal permits and licenses to make sure they are not violating their water quality standards or other state laws in **Section 401** (water quality certification, p. 119).

**The National Pollutant Discharge Elimination System (NPDES) program** (p. 75) (a) establishes technology-based municipal and industrial standards for pollution control and permit limits and (b) translates the water quality standards into permit limits where those technology-based standards are not strong enough to protect the applicable water quality standards. The states and the Virgin Islands are generally in charge of this program, with a few exceptions. EPA administers the program in NH, MA, NM, almost all tribal lands, District of Columbia, Puerto Rico, and all other U.S. territories. **Section 401** applies to NPDES permits written by EPA.

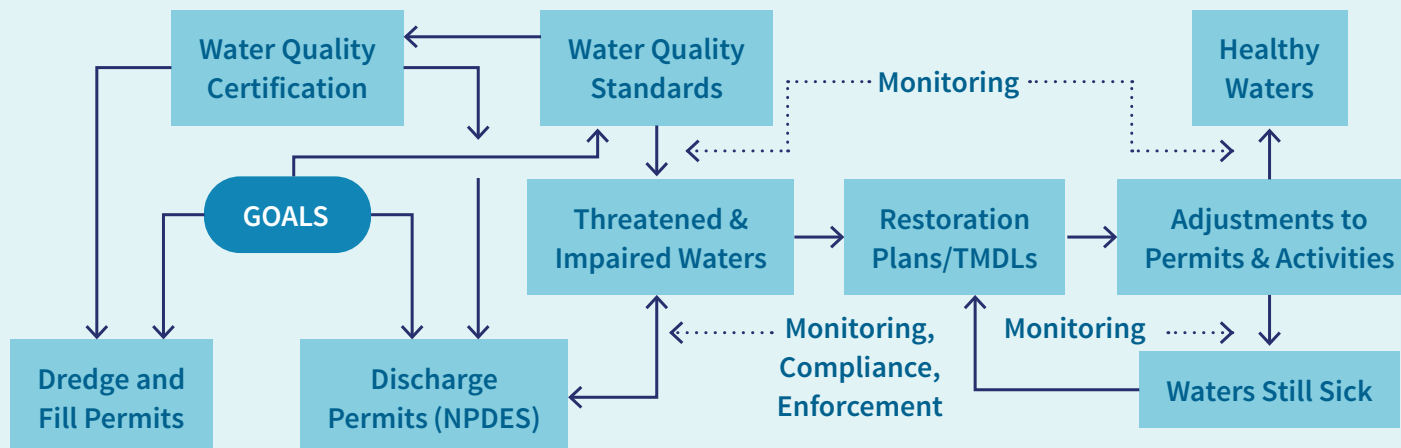
**The Dredge and Fill Permit (Section 404) program** (p. 112) requires permits to control earth-moving activities, including instream activities, that may result in point source discharges into the WOTUS. The Army Corps of Engineers (Corps) is generally in charge of this program with some exceptions, and with EPA oversight. **Section 401** applies to Section 404 permits written by the Corps.

All states must assess their waters and develop a biennial Threatened and Impaired Waters List (Section 303(d), p. 124). Tribes are eligible, but not required, to do so as well. This list is based on evaluation of water quality data for each water body and whether it meets standards. **Total Maximum Daily Loads (TMDLs)** (p. 129) are the restoration plans and the calculation of pollutant loads that must be developed to bring each water on the Threatened and Impaired Waters List back into compliance.

As a snapshot, these programs fit together with many others to provide the scaffolding for the CWA. In the pages that follow, more detail will help all readers to better understand the opportunities to influence, challenge, appeal, and enforce the various provisions of the CWA.

***This is your Owner’s Manual. You know your waters better than any local, state, or federal agency ever will. It is up to you, the affected public, to make sure that the law is working as it was intended.***

## HOW THE PROGRAMS FIT TOGETHER





We often refer to a particular section of the 1972 Clean Water Act yet, once the Act was incorporated into federal law, the reference numbers changed. Here is a table to explain the relationship between what we say and correct legal reference.

TITLE	SECTION	DESCRIPTION	33 U.S.CODE	TITLE	SECTION	DESCRIPTION	33 U.S.CODE
<b>I</b>		<b>Research and Related Programs</b>		<b>IV</b>		<b>Permits and Licenses</b>	
	101	Congressional Declaration of Goals and Policy	1251		401	State/Tribal Water Quality Certification	1341
	102	Comprehensive Programs for Water Pollution Control	1252		402	National Pollutant Discharge Elimination System	1342
	106	Grants for Pollution Control Programs	1256		403	Ocean Discharge Criteria	1343
<b>II</b>		<b>Grants for Construction of Treatment Works</b>			404	Permits for Dredged or Fill Material	1344
	201	Purpose	1281		405	Disposal of Sewage Sludge	1345
	208	Areawide Waste Treatment Management	1288	<b>V</b>		<b>General Provisions</b>	
	209	Basin Planning	1289		502	General Definitions	1362
<b>III</b>		<b>Standards and Enforcement</b>			505	Citizen Suits	1365
	301	Effluent Limitations	1311		509	Administrative Procedure and Judicial Review	1369
	302	Water Quality Related Effluent Limitations	1312		518	Indian Tribes	1377
	303	Water Quality Standards and Implementation Plans	1313	<b>VI</b>		<b>State Water Pollution Control Revolving Funds</b>	
	304	Information and Guidelines	1314		601	Grants to States for Establishment of Revolving Funds	1381
	305	Water Quality Inventory	1315		603	Water Pollution Control Revolving Loan Funds	1383
	307	Toxic and Pretreatment Effluent Standards	1317		606	Audits, Reports and Fiscal Controls: Intended Use Plan	1386
	309	Federal Enforcement	1319				
	311	Oil and Hazardous Substance Liability	1321				
	312	Marine Sanitation Devices	1322				
	313	Federal Facilities Pollution Control	1323				
	314	Clean Lakes	1324				
	316	Thermal Discharges	1326				
	319	Nonpoint Source Management Program	1329				

1 Politico, *Mississippi Confronts a Crisis*, 9/1/22

2 David M Konisky, Christopher Reenock, and Shannon Conley, "Environmental injustice in Clean Water Act enforcement: racial and income disparities in inspection time," Environmental Research Letters, July 26, 2021, online at <https://iopscience.iop.org/article/10.1088/1748-9326/ac1225>.

3 A polluter is in significant noncompliance when serious violations of its discharge limits continue unabated for a period of at least six months.

4 <https://www.epa.gov/enforcement/national-compliance-initiative-reducing-significant-non-compliance-national-pollutant>

5 Konisky, et. al.

6 Becky Hammer, "Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color – and How to Solve it," Natural Resources Defense Council, October 2018, online at <https://www.nrdc.org/experts/becky-hammer/report-water-infrastructure-solutions-health-justice>

7 Renee Cho, "Why Climate Change is an Environmental Justice Issue," Columbia Climate School, Sept. 22, 2020, online at <https://news.climate.columbia.edu/2020/09/22/climate-change-environmental-justice/>

8 Oliver E J Wing et al., "Estimates of present and future flood risk in the conterminous United States," Environ. Res. Letters, February 28, 2019, online at: <https://iopscience.iop.org/article/10.1088/1748-9326/aaac65>

9 University of California Berkeley, Toxic Tides Project, "Sea Level Rise, Hazardous Sites, and Environmental Justice in California," online at <https://sites.google.com/berkeley.edu/toxic/tides>.

10 CWA Section 101(e)

11 <https://healthygulf.org/2021/09/28/iron-ton/>

12 *Grand Bayou Village*

13 Petroleum coke, or petcoke, is a byproduct produced by the refining of oil.

14 These flights were performed primarily by *Healthy Gulf, SouthWings*, and the *Louisiana Environmental Action Network* (LEAN).

15 CCW member organizations include *Tewa Women United, Honor Our Pueblo Existence, Partnership for Earth Spirituality, Concerned Citizens for Nuclear Safety (CCNS), Amigos Bravos*, and the *New Mexico Acequia Association*.

16 <https://www.prnewswire.com/news-releases/new-poll-shows-americans-strongly-support-clean-water-act-on-50th-anniversary-301627711.html>

17 CWA Section 101(a)

18 CWA Section 101(a)(1)-(7)

19 CWA Section 101(a)(1)-(7)

20 Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)

21 *Rapanos v. United States*, 547 U.S. 715 (2006)

22 River Network's State Policy Hub, "[Bolstering CWA Protections](#)"

23 New Hampshire, Massachusetts, New Mexico, District of Columbia, all tribal lands except in Maine, Puerto Rico, American Samoa, Guam, Johnston Atoll, Midway/Wake Islands, the Northern Mariana Islands, federal facilities in Delaware, Colorado, Washington, and Vermont, and designated activities in specific states (e.g., oil and gas activities in Oklahoma).

24 Dec2021 WOTUS Tribal Consultation Summary

# PROBLEMS AND STRATEGIES FOR ACTION



**In the following pages, we have highlighted several ubiquitous problems facing the waters across the U.S. and in tribal communities. These are by no means the only problems facing our waters, however, they will be familiar to many readers and communities.**

## There are five parts to each problem area:

- 1 Short description of the problem
- 2 Links for more information on the problem
- 3 Commonly-used Clean Water Act program areas with links to relevant sections
- 4 Priority laws that should be coordinated with Clean Water Act programs
- 5 Agencies/organizations to know

These summaries are not comprehensive, but they will provide a solid start for you, your organization, and your community.



## 1 CONTAMINATION OF DRINKING WATER SOURCES

Your drinking water may come from a flowing river, a reservoir, or from groundwater—often referred to as “source waters.” Local jurisdictions are confident in their ability to treat source waters to make them safe to drink. And yet, source water pollution remains a long-lasting, permanent, and costly problem in many areas, and is often the result of inadequate treatment.

Common threats to source waters include PFAS (a group of persistent chemicals used to make coatings that are showing up in most water bodies, fish, wildlife, and humans), leaky underground storage tanks, excessive pesticide and fertilizer application, bacteria and pathogens, sediment or road salt that can clog filtration systems, urban stormwater pollution (metals, grease, oil, and petroleum byproducts), and many emerging contaminants.

Low-income, tribal, and communities of color are most likely to be at risk of source water contamination given historic patterns of siting pollution sources upstream, nearby, and downstream. In its [Tap Water Database](#), the Environmental Working Group found low-income communities are more likely to be exposed to greater concentrations of toxic contaminants, including PFAS, in their drinking water. Some of those contaminants are making their way past treatment systems. The often-underfunded smaller drinking water systems that tend to serve lower-income areas report higher levels of contaminants and possess fewer resources to deal with them.

Climate change also impacts source water quality. As extreme precipitation events become more frequent, the amount of pollution reaching source waters via contaminated runoff and sediment is increasing. Due



[River Network Drinking Water Guide](#)

[Clean Water Action](#)

[EPA – controlling PFAS with NPDES](#)

[Sourcewater Collaborative CWA Toolkit](#)

# 1 CONTAMINATION OF DRINKING WATER SOURCES

## Most commonly-used Clean Water Act programs that may protect source water quality

- **Clean Water State Revolving Fund (CWSRF)** – Include source water protection benefits in any application for CWSRF dollars.
- **Discharge Permits (NPDES)** – Identify risks from municipal and industrial wastewater, CAFOs, mixing zones upstream or near drinking water intakes. See EPA memo on controlling PFAS with NPDES, [p. 21](#).
- **Water Quality Standards (WQS)** – Ensure public water supply uses are in standards. Identify appropriate criteria for pollutants that are not removed in treatment process (e.g., PFAS, emerging contaminants, persistent bioaccumulative contaminants, pesticides, petroleum by-products), and pollutants that cause problems for the treatment process (e.g., sediment, nitrogen, and phosphorus causing harmful algal blooms). Consider application of antidegradation to protect source waters.
- **Impaired waters (Section 303(d))/Restoration Plans (TMDLs)** – Assess and identify impairments of source waters. Ensure that source water protection is included in any TMDLs upstream of source waters.
- **Nonpoint Source Management (Section 319)** – Include source water protection areas in required state Nonpoint Source Management Plans. Source water protection benefits may improve Section 319 grant applications.

## Priority laws for coordination with CWA

- **Safe Drinking Water Act** and state-specific implementation of the law, including underground injection of wastes and Drinking Water State Revolving Fund
- **Resource Conservation and Recovery Act** and additional state requirements for managing non-hazardous and hazardous waste including leaky underground storage tanks
- **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, Superfund)** – identify hazardous waste sites near source waters
- **Farm Bill** conservation programs and subsidies to reduce nutrients and impacts of row cropping on source waters
- **National Forest Management Act** and regional or state forest practices acts or plans; how they include source water protection
- **Local ordinances and plans** – source water protection plans, groundwater protection ordinances, wellhead protection plans

## Agencies/organizations to know

- Environmental Protection Agency
  - [Office of Ground Water and Drinking Water](#)
  - [Office of Resource Conservation and Recovery](#)
  - [Office of Land and Emergency Management](#) – brownfields, federal facilities, Superfund, underground storage tanks
- Department of Agriculture – [Farm Service Agency](#)
- Bureau of Land Management – [grazing, forests and woodlands](#)
- Local and state public health departments



## 2 RAW SEWAGE PROBLEMS – CSOs AND SSOs

Some municipal sewer systems collect stormwater along with raw sewage. Known as combined sewer systems, they were designed to overflow into water bodies during periods of heavy rain and runoff. The overflows often discharge raw sewage into water bodies because the infrastructure was not designed to handle the vast amounts of water flowing into them. The excess water comes from heavily developed areas which have paved over and eliminated natural channels that formerly allowed water to gently percolate into the ground to aquifers and rivers. As the intensity and frequency of storms increases with climate change, the volume of water entering the systems increases. These **combined sewer overflows** (CSOs) carry not only raw sewage, but also industrial wastewater and pollutants from roads and parking lots, creating problems for low lying communities in approximately 700 municipalities across the country.<sup>1</sup> Cities are investing in very expensive and long-term fixes to combined sewer overflows, including

separating the sewer and stormwater infrastructure and/or increasing the capacity of the whole system. This expense prevents many cities from pursuing effective solutions. When these investments are made, many cities are improving the use of natural infrastructure and better development practices.

In areas where stormwater drains were never connected with the sanitary sewer system, raw sewage overflows can result from substantial amounts of water leaking into poorly maintained old pipes, pipe blockages, pipe breaks, power failures, or insufficient capacity in the system due to a rapidly growing population. Such overflows are called **sanitary sewer overflows** (SSOs), and EPA estimates at least 23,000–75,000 SSOs occur every year in the U.S.<sup>2</sup> Sanitary sewer systems may also be designed to intentionally overflow at various points in the system, resulting in raw sewage and other municipal waste flowing into water bodies, onto streets, and into yards.



**EPA CSOs**

**EPA SSOs**

**EPA Green infrastructure CSO**

The problems of aging infrastructure and infiltration into the systems is common for both CSOs and SSOs. In many areas, **sewage backups** into yards and basements can also be tied to these problems. Unfortunately, lower income communities and communities of color are often disproportionately exposed to raw sewage during overflows, exacerbating their cumulative exposure to pollutants emanating from nearby industries or pollution sources.

**Raw sewage overflows often release methane**, a potent contributor to climate problems, resulting in heavier and more frequent storms that worsen the overflows.

For both CSOs and SSOs, replacing aging infrastructure, investing in natural infrastructure, and improving development practices are critical components of short- and long-term solutions.

## 2 RAW SEWAGE PROBLEMS – CSOs AND SSOs

### Most commonly-used Clean Water Act programs that may reduce raw sewage problems

- **Clean Water State Revolving Fund (CWSRF)** – Current increases in funding are in high demand. Help CSO and SSO communities tap into these funds, especially in lower income communities.
- **Discharge Permits (NPDES)** – CSO communities have a Long-Term Control Plan to eliminate flows. Understanding the commitments and timeline is important. SSOs are violations of existing wastewater permits. Has the city mapped the system, cross connections, and intentional overflow points?
- **Impaired waters (Section 303(d))/Restoration Plans (TMDLs)** – How are CSOs and SSOs causing or contributing to impaired waters? How many pollutants should be included in TMDLs for those pollutants?
- **Water Quality Standards (WQS)** – Identify uses and criteria downstream of overflow points.

### Priority laws for coordination with CWA

- **Safe Drinking Water Act** – Examine DWSRF options to invest in green stormwater infrastructure projects upstream from overflows.

### Agencies/organizations to know

- [EPA – Office of Wastewater Management](#)
- State Water Quality Agency
- Local wastewater utility or bureau



### 3 POOR STORMWATER MANAGEMENT

One of the greatest problems we must address in our watersheds is stormwater pollution. Urban stormwater pollution carries sediment, oils, grease, petroleum byproducts, asphalt, metals, materials that wear off brakes and tires, pesticides and fertilizers from park and lawn management, toxic contaminants from industrial facilities, and road salt where it is applied in winter months. Much of this pollution eventually ends up in the nearest water body.

Stormwater pollution is not only an urban problem. Residential and commercial development has led to polluted runoff problems in the suburbs. Even in rural areas, stormwater carries sediment from dirt roads; road salt from smaller local roads; pesticides and fertilizers from lawns, parks, and agricultural land; and fluids and solvents from poorly maintained vehicles and machinery.

Pollutants carried into water bodies by stormwater have negative effects on many uses of our waters including aquatic life, recreation, and public water supplies. Sediment is known to be one of the pollutants causing the most damage in aquatic environments. Not only does sediment clog spawning and feeding areas and cause damage to fish gills, but it also carries chemical substances bound to the sediment into the water.

There is a high correlation between the amount of impervious surface in a watershed and the adverse impacts on receiving waters. The more asphalt you have, the more pollution and the greater the volume of water discharged into the stream.

Unnatural high flows, caused by runoff over increasing amounts of impervious surface, result in significant changes to hydrology and stream



[EPA Stormwater Documents](#)

[EPA National Menu of Best Practices](#)

[EPA Green Infrastructure Permitting and Enforcement Stormwater](#)

channels. These high flows scour the stream banks, remove vegetation (which leads to increased temperatures), carry away large debris critical for fish survival, and reduce the opportunity for groundwater recharge. The impacts of more frequent and intense storms resulting from climate change exacerbate the problems caused by the loss of natural drainage from too much imperviousness.

Unfortunately, poor stormwater management can exacerbate environmental justice concerns. There are correlations between **high imperviousness** and **less natural infrastructure** and lower income areas. Too much asphalt and too little green infrastructure worsens both intense heat events and unnatural high flows that can lead to flooding.



# 3 POOR STORMWATER MANAGEMENT

## Most commonly-used Clean Water Act programs that may reduce stormwater pollution

- **Discharge Permits (NPDES)** – The types of stormwater pollution addressed by the NPDES program are municipal (across urbanized areas), construction sites (typically limited term), and industrial (transporting the variety of pollutants coming from the spectrum of industrial sources). When stormwater pollution doesn't fit into one of those permit programs, CWA allows for development of a new category (see [Residual Designation Authority, p. 94](#)).
- **Water Quality Standards (WQS)** – Consider all pollutants that can be carried into local waters by stormwater and ways that stormwater may increase temperatures in receiving waters. Adequate limits must be set in permits to protect uses.
- **Impaired Waters (Section 303d)/Restoration Plans (TMDLs)** – Examine waters impaired due to stormwater pollution. Are all sources and pollutants identified and involved in TMDL development?
- **Clean Water State Revolving Fund (CWSRF)** – Use CWSRF funds to improve grey infrastructure (aging pipes) and green infrastructure (natural features) to manage stormwater and stormwater pollution.
- **Water Quality Certification (Section 401)** – Where NPDES is administered by EPA, state and tribal authorities must certify that stormwater permits meet state or tribal standards and laws.

## Priority laws for coordination with CWA

- **Local ordinances and plans** – impervious cover limitations
- **Safe Drinking Water Act** and state-specific implementation of the law—stormwater should be considered in source water protection plans and investments
- **Resource Conservation and Recovery Act** and additional state requirements for managing non-hazardous and hazardous waste including landfills
- **Oil Spill Prevention** – risks associated with [above ground storage tanks](#)/bulk containers
- **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, Superfund)** – awareness of stormwater pollution from Superfund sites

## Agencies/organizations to know

- [Center for Watershed Protection](#)
- [UNH Stormwater Center](#)
- [Chesapeake Stormwater Network](#)



## 4 CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs)

Animal feeding operations are agricultural facilities that keep large numbers of animals together for feeding, resulting in a large amount of manure discharged to a relatively small space, usually indoors. When the “animal units” hit a particular amount—different for each animal category—they are deemed to be Concentrated Animal Feeding Operations (CAFOs) and then legally considered a point source of pollution. Animal waste, if not managed properly, can run off facilities and pollute nearby water bodies. Runoff from these facilities, rich in nutrients like nitrogen and phosphorus, can cause serious pollution problems. Much of the manure is taken to nearby farms to be applied to land as fertilizer on crops. There may be far more manure than farm fields can handle in some locations,<sup>3</sup> and restrictions on land application when the ground is frozen or before anticipated rainfall is limited at best.

Runoff from CAFOs has been linked to problems with dangerous microorganisms. The drinking water system for Milwaukee, Wisconsin, was contaminated in 1993 by cryptosporidium (bacteria). This outbreak, most likely caused by dairy cattle waste, killed over

100 people and made more than 400,000 people ill. Another CAFO-related microorganism, *Pfiesteria piscicida*, is widely believed to be responsible for fish kills in Maryland, North Carolina, and Virginia, and poses risks to human health.

The impacts of climate change worsen these problems. With more frequent extreme storms, manure management lagoons are more likely to fail and land applied manure is more likely to run off, polluting nearby rivers and communities. In addition, a 2021 Global Methane Assessment estimated that methane emitted from cows and manure contributes 32% of the methane load to the atmosphere.<sup>4</sup>

Concentrated animal feeding operations tend to be sited in lower income areas, near residents who historically have lacked connections to decision makers and who may not even be aware such facilities are planned. Their exposure to air and water pollution stemming from CAFOs has been documented in systemic illnesses.



[EPA – CAFOs Permitting](#)

[Sierra Club – Why CAFOs are bad](#)

Environmental Working Group – [Western Lake Erie](#)

## 4 CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs)

### Most commonly-used Clean Water Act programs to control pollution associated with CAFO facilities

- **Discharge Permits (NPDES)** – Many states have developed “non discharge” general NPDES permits for CAFO facilities, and AFOs remain unregulated. Most CAFO permits do not contain numeric limits or monitoring requirements.
- **Water Quality Standards (WQS)** – Adequate bacteria and pathogen criteria need to be included in NPDES permits to protect designated uses.
- **Impaired waters (Section 303(d)/Restoration Plans (TMDLs))** – Impairments associated with pollutants coming from animal feeding operations need to be included on Section 303(d) lists and scheduled for TMDLs.

### Priority laws for coordination with CWA

- **Farm Bill** – Remove subsidies to factory farms.
- **Safe Drinking Water Act** – Source water protection plans need to identify and address upstream animal feeding operation sources.

### Agencies/organizations to know

- **[Environmental Working Group](#)** – manure impact on water resources
- **[Sierra Club](#)** – CAFOs
- **[National Sustainable Agriculture Coalition](#)** – Farm Bill and Climate Change



## 5 POOR CROPLAND PRACTICES

Cropland practices can result in significant impacts to lakes, streams, surrounding wetlands, and groundwater. Water flowing over agricultural land, whether from rain, irrigation, or flooding, carries pollutants to the nearest water body directly or through drainage infrastructure. This water can also seep into the ground, leaching pollutants into groundwater. Sometimes the ground filters pollutants from the water as it seeps through. Unfortunately, many of the pollutants eventually will reach a surface water body. Agricultural pollutants that are carried to the water via runoff can include sediment, pesticides, fertilizers, bacteria, oils, grease, solvents, and more. The result can be elevated levels of suspended solids (carrying pollutants and clogging valuable gravel habitat), nitrogen and phosphorus (resulting in harmful algal outbreaks), synthetic organic chemicals (often toxic and bioaccumulative), and heavy metals

in the receiving waters. This pollution can impact drinking water, aquatic life, and recreational uses in downstream communities.

Practices that can exacerbate the impairment of water bodies include removal of protective vegetative riparian buffers, excessive or detrimental application of pesticides and fertilizers, lack of soil conservation, wetland destruction through draining, excessive or wasteful irrigation, and poor maintenance of farm equipment.

Climate change has led to more frequent storms and greater volumes of precipitation eroding more soil and carrying more pollutants into water bodies. Excessive and prolonged heat events combined with excessive nutrients result in more algal outbreaks.



***Ditch drainage lawsuit*** – MN Supreme Court – Limbo Creek

# 5 POOR CROPLAND PRACTICES

## Most commonly-used Clean Water Act programs to improve practices on cropland

- **Water Quality Standards (WQS)** – Strong nutrient and pesticide standards are key to determining agricultural sources of problems.
- **Impaired Waters (Section 303d)/Restoration Plans (TMDLs)** – Identify nutrient impairments and identify sources, [\*Chesapeake Bay model\*](#).
- **Dredge and Fill Permits (Section 404)** – Consider ditch drainage permitting and [\*exemptions\*](#). Examine Nationwide Permit (NWP) 40.
- **Nonpoint Source Management (Section 319)** – Pursue funding to improve agricultural practices.

## Priority laws for coordination with CWA

- **Safe Drinking Water Act** – Protect source water from agricultural chemicals and nutrients.
- **Farm Bill Conservation programs** – Examine funding to improve agricultural practices.
- [\*States' Right to Farm laws\*](#)

## Agencies/organizations to know

- [\*National Sustainable Agriculture Coalition\*](#)



## 6 DESTRUCTION OF WETLANDS

Wetlands of all types serve critical functions for ecosystems that also affect human communities. They filter pollution; protect against shoreline erosion; offer aesthetic and recreational enjoyment; provide habitat and refuge for countless species of waterfowl, migratory birds, and wildlife; and provide natural flood protection by slowing, absorbing, and holding high waters, which are then released to rivers and streams during low water.

More than 220 million acres of wetlands existed in what is now the lower 48 states during the 17th century. Substantial wetland loss occurred between the mid-1950s and the mid-1970s.<sup>5</sup> Wetlands were drained and converted to other uses such as farming or development (industrial, commercial, and residential). Along major river floodplains, wetlands hydrology was channelized for a growing shipping industry, and drainage was encouraged near flood control projects. By the mid-1970s, more than half of the pre-European wetland acres had been destroyed.<sup>6</sup>

Wetland functions have also been negatively impacted by many types of pollution including chemicals, excess nutrients, and sedimentation. Filling of wetlands for housing, roads, and commercial development poses one of the greatest threats to wetlands today. We also see losses associated with industrial development, such as by the gas and oil industries, related to siting of pipelines, terminals, and related infrastructure. Protecting wetlands is a major challenge because, although they provide many public services, the majority of them are on private property.

Extreme storm events and flooding caused by climate change impact vulnerable communities and species. This highlights the need to protect the natural infrastructure that mitigates these impacts and which wetlands provide. Loss of coastal wetlands puts a great number of densely populated areas at risk from storms and sea level rise.



*Status and Trends of Wetlands in the Conterminous United States, 2004–2009, USFWS*

*National Wetlands Inventory Wetland Status and Trends Reports Fact Sheet, USFWS, January 2020*

# 6 DESTRUCTION OF WETLANDS

## Most commonly-used Clean Water Act programs to prevent or reduce wetland destruction

- **Dredge and Fill Permits (Section 404)** – Focus on avoid, minimize, then mitigate; cumulative impacts and public need.
- **Water Quality Certification (Section 401)** – Eligible tribes and states have the responsibility to examine standards that may be violated by Section 404 permits, then certify, condition, or deny permit.
- **Water Quality Standards (WQS)** – Identify which uses and criteria apply to wetlands. Develop wetland uses and criteria. Develop understanding of impact of particular pollutants on wetlands. Designate wetlands as “ONRWs.”

## Priority laws for coordination with CWA

- **National Environmental Policy Act (NEPA)** – NEPA is triggered by 404. Examine state versions of NEPA.
- **Endangered Species Act** – Document wetland-specific species.
- **State wetland programs beyond federal Section 404** – Many states protect more wetlands than Section 404 does. States may include more waters for protection.
- **Local wetland laws land use laws** – Look for ordinances or overlays to protect wetlands from development .

## Agencies/organizations to know

- [USFWS National Wetlands Inventory](#)
- [National Association of Wetland Managers](#)



## 7 DAMS

Very few rivers in the lower 48 states are not regulated by dams, locks, or diversions. The river below a dam is not the same as the river above it.

Downstream, native aquatic species are affected by the changes to flow and water temperature, which can vary wildly, depending on where the water is released from the reservoir and whether the dam is operated for electricity generation, navigation, recreation, flood prevention, or water supply. Natural seasonal hydrology is altered by dams, and new flow patterns can cause significant changes in channel shape and habitat. The river downstream can be starved of natural sediment transport, suffer from an increase in algae and nutrients and some dissolved gasses, and decreases in dissolved oxygen. Decreased sediment loads can allow more light to pass through the water, further altering the biotic system.

Upstream from dams, reservoirs flood riverine habitats and displace some species. Over time, reservoirs fill with sediment and may cause new flooding problems. Temperatures in reservoirs can rise to levels that violate water quality criteria intended to protect aquatic species.

Communities upstream of, adjacent to, or downstream of dams may be exposed to pollutants or impacts of hydromodification discussed above. In addition, downstream communities face the potentially catastrophic risk of dam failure.

Increased frequency and intensity of storms, increased occurrence of drought, and increased and prolonged heat events can all exacerbate the problems caused by a dam.



*How Dams Damage Rivers*, American Rivers

*South Carolina residents rush to higher ground as 14 dams fail*, LA Times



## Most commonly-used Clean Water Act programs to improve dam operation

- **Dredge and Fill Permits (Section 404)** – Building a dam requires a Section 404 permit.
- **Water Quality Certification (Section 401)** – Section 404 permit and FERC licenses both trigger Section 401.
- **Water Quality Standards (WQS)** – Identify designated uses, criteria, and antidegradation both upstream *and* downstream from new or existing dams.
- **Impaired waters (Section 303(d))/Restoration Plans (TMDLs)** – when upstream or downstream conditions violate water quality standards, the waters must be listed and TMDLs should be developed; in addition, if TMDLs are developed for downstream reaches, the dam may need to be included as a source of impairment

## Priority laws for coordination with CWA

- **Electric Consumers Protection Act** – Most non-federal dams must be licensed by the Federal Energy Regulatory Commission (FERC). These licenses are for 30 to 50 years and must include CWA elements in any Environmental Assessment or Environmental Impact Statement.
- **National Environmental Policy Act** – NEPA is triggered by the issuance of the FERC license.
- **Endangered Species Act** – ESA is triggered by the issuance of the FERC license.

## Agencies/organizations to know

- [Federal Regulatory Energy Commission](#)



## 8 COAL ASH

Coal ash is the toxic waste from coal burning power plants. It contains heavy metals and other dangerous contaminants that have been linked to cancer and other health problems.<sup>7</sup> This waste is stored in large ponds (called impoundments) that are often unlined, unstable, and near water bodies or groundwater. A [2019 report](#) revealed that 91% of coal plants with monitoring data had contaminated groundwater. This same report also found that six of the ten most contaminated coal ash sites were in communities of color and/or low-income communities<sup>8</sup> (page 19 of [the report](#)) and management of the coal ash has often shifted the health burden from one community to another.<sup>9</sup>

In addition to contaminating groundwater with coal ash, many coal plants discharge their toxic wastewater into rivers and lakes, including drinking water sources. Until 2015, there were no federal standards to limit toxic wastewater discharges or to manage the coal ash waste from these plants. There are still no standards to

address legacy wastewater at inactive coal plants and this contaminated wastewater threatens water bodies across the country. Coal plants are also not required to control their discharges of bromide, which is a huge problem for [downstream drinking water systems](#). Bromide interacts with the drinking water treatment process to create carcinogenic disinfection byproducts. These disinfectant byproducts are difficult and costly for drinking water systems to remove.

Because coal ash ponds are often unlined and unstable, these waste dumps are vulnerable to extreme weather events such as flooding, which is exacerbated by climate change. When these ash ponds leak or break, they can contaminate nearby rivers with devastating consequences, such as in [Kingston, Tennessee](#) in 2008. Coal ash waste has also [contaminated groundwater sources](#) across the country, threatening our precious water supplies, which are already being stretched too thin from drought exacerbated by climate change.



[EPA Coal Ash Basics](#)

[Earthjustice - Coal Ash](#)

[Environmental Integrity Project - Coal's Poisonous Legacy](#)

[Ashtracker](#)

[Coal Combustion Residuals rulemakings](#)

### Most commonly-used Clean Water Act programs to improve pollution controls at coal ash facilities

- **Discharge Permits (NPDES)** – *Technology-based pollution limits* are set for coal-burning power plants and need to address all the problematic pollutants.
- **Water Quality Standards (WQS)** – Identify designated uses downstream. Examine water quality criteria for pollutants coming from coal ash ponds.
- **Impaired waters (Section 303(d))/Restoration Plans (TMDLs)** – Insist on assessments downstream. Community monitoring can play a role. Get waters on 303(d) list and including sources in TMDLs.

### Priority laws for coordination with CWA

- **Resource Conservation and Recovery Act (RCRA)** – Under RCRA, coal ash is treated as a non-hazardous waste even though it contains heavy metals and other toxic chemicals.
- **CERCLA (Superfund Law)** – Insist on thorough cleanup of toxic contamination .

### Agencies/organizations to know

- **EPA Office of Water** – CWA Coal Plant Effluent Limitation Guidelines
- **EPA Office of Land and Emergency Management (OLEM)** – RCRA, CERCLA



## 9 POOR MINING PRACTICES AND ABANDONED MINES

Many mining practices have similar impacts on nearby water bodies, including releases of dangerous chemicals carried to streams by industrial end-of-pipe discharges or through rain and flooding. Habitat adjacent to mining sites can be damaged by road building, mine site construction, and mine operation practices. Some impacts are specific to the following types of mining.

**AGGREGATE MINING** Perhaps the most ubiquitous form of mining is for sand, gravel, or other forms of aggregate used in construction or landscaping. The predominant impacts are on the nearby physical habitat, when fine sediment is discharged into nearby water bodies, smothering natural patterns of cobble needed by many aquatic species. This sediment can also carry pollutants from the extraction site or the transportation corridor, damaging the structure of a stream and creating a large impact on fish, wildlife, and downstream communities.

**HARD ROCK MINING** Active and abandoned hard rock mines contribute significantly to water quality problems in the United States. Chemicals used in the mining process, such as cyanide, leach into the groundwater. A more daunting problem occurs when acid-bearing waste rocks, or tailings, are exposed to air and water, creating acid mine drainage laden with heavy metals and other toxic pollutants. Acid mine runoff is nearly impossible to stop. In some cases, reclamation may require water treatment in perpetuity.

**COAL MINING** Active coal mining continues to threaten water quality, despite required discharge permits and federal reclamation law (RCRA, [p. 154](#)). Destructive methods of extracting coal include strip mining, long wall underground mining, and “mountaintop removal.” Mountaintop removal requires dynamite to blast away 800–1,000 feet of a mountaintop, which is then dumped into nearby valleys, burying streams.



[Western Mining Action Network](#)

[Appalachian Voices](#)

[General Mining Law of 1872](#)

[Earthworks](#)

[Initiative for Responsible Mining Assurance](#)

**ABANDONED MINES** In the U.S. there are more than half a million abandoned mines that continue to degrade the environment and pose health and safety risks, devastating some communities with illness, and contaminating surface and groundwater. The acid drainage from these abandoned mine lands is considered a “pre-existing discharge.”

Related to all three of these mining practices are the associated processing, storage, and transport problems such as cyanide leaching at hard rock mines, unstable waste rock piles, coal trains, [coal terminals](#),<sup>10</sup> and aggregate storage.

Extractive mining activities are fueling climate change. At the same time, mining-related impacts exacerbated by extreme weather events associated with climate change carry pollutants from mining locations, transportation routes, and facilities into nearby waters, damaging native habitat and harming aquatic and terrestrial species.

Unfortunately, the communities affected by these practices and facilities are more likely to be rural, low-income, and often Native American. Most untapped minerals slated for extraction to assist our transition away from fossil fuels are within 35 miles of Indigenous lands.<sup>11</sup> Consideration of the lifetime of impacts, including cultural impacts, that mining operations and their legacy pollutants cause is seldom built into permitting processes.

# 9 POOR MINING PRACTICES AND ABANDONED MINES

## Most commonly-used Clean Water Act programs to improve pollution controls at mining operations

- **Discharge Permits (NPDES)** – Active and abandoned mines are supposed to have an NPDES permit, but implementation is tied to state specifics and varies significantly. These permits may be for wastewater, stormwater, or both. They may be individual or general permits.
- **Water Quality Standards (WQS)** – Protection of designated uses, development of adequate criteria, and identification of high quality waters nearby and downstream from existing or new mining operations should include all chemicals that are leaching from the sites, substances moved for construction or extraction, and substances that are transported from the sites.
- **Dredge and Fill Permitting (Section 404)** – Movement of earth during the construction or extraction is most likely regulated under Section 404. Examine Nationwide Permits (NWP) 21, 44, and 50.
- **Water Quality Certification (Section 401)** – Impacts of a federal permit such as Section 404 permits or NPDES issued by EPA are subject to state and tribal water quality certification.
- **Nonpoint Source Management (Section 319)** – Some of the pollution may be exempt from point source permitting, however, it can and should be included in any state/tribal NPS management plans.
- **Impaired waters (Section 303(d)/Restoration Plans (TMDLs)** – Make sure that waters affected by active and abandoned mines are on the 303(d) list and scheduled for TMDL development.

## Priority laws for coordination with CWA

- **NEPA** – NEPA may be triggered by a federal permit for a mining operation
- **Endangered Species Act** – triggered by the issuance of the FERC license
- **CERCLA** – relevant if mine site is on the Superfund National Priority List
- **Surface Mining Control and Reclamation Act of 1977 and Amendments of 2006** (only applicable to coal)
- **Federal Mine Safety and Health Act**
- **Federal Land Policy Management Act**
- **Clean Air Act**

## Agencies/organizations to know

- [Office of Surface Mining Reclamation and Enforcement](#)
- [Mine Health and Safety Administration](#)
- [Environmental Protection Agency](#)
- [Bureau of Land Management \(administers the Federal Land Management Policy Act\)](#)



## 10 IMPACTS OF OIL AND GAS EXTRACTION AND TRANSPORT

With the development of hydraulic fracturing (fracking) technology and the dramatic increase in domestic oil and gas production in the last decade, the threats to and impacts on water bodies have also greatly increased. The oil and gas industries use fresh water and produce wastewater contaminated by chemicals that are naturally available at the drilling site and those injected during the exploration, extraction, or maintenance process. The wastewater and stormwater may be contaminated with naturally occurring substances such as salts, benzene, metals, and radioactive materials as well as chemical additives.<sup>12</sup>

Activities and facilities that threaten our waters include: exploration wells, extraction activities, reinjection and discharge of wastewater (also called **produced water**), refinement and processing, loading at terminals, and transport methods (pipelines, rail (oil)).

Neighboring and downstream communities are concerned about contaminated drinking water (groundwater and surface water), exposure to hazardous chemicals, transportation accidents, pipeline breaks, oil spills, and much more. Communities near fracking sites face particular risks from production, as many of the 1,000-plus chemicals used in fracking are harmful to human health or even carcinogenic. The Environmental Defense Fund published **research** in 2022 that found disproportionately large numbers of communities of color, individuals living below the poverty line, older individuals, and young children living within one mile of active drilling sites across the U.S.<sup>13</sup>

The extraction and burning of fossil fuels obviously contributes to climate change. In addition, increased precipitation from more frequent and intense storms may carry greater amounts of the chemicals related to the oil and gas extraction processes to nearby water bodies. The impacts of severe and prolonged drought on groundwater resources may worsen the problems associated with injection of the wastes into the ground.



Clean Water Action, [CWA Regulation of Oil and Gas Wastewater Discharges](#), Jan 2020

EPA, [Final Report: Oil and Gas Extraction Wastewater Management](#)

# 10 IMPACTS OF OIL AND GAS EXTRACTION AND TRANSPORT

## Most commonly-used Clean Water Act programs to improve pollution controls associated with oil and gas industry activities

- **Discharge Permits (NPDES)** – *Effluent guidelines for oil and gas extraction* guide development of permits for wastewater discharges during exploration, drilling, production, well treatment, and well completion activities divided into offshore, onshore, coastal, agricultural and wildlife water use, and stripper wells. This effluent *may not be discharged to public sewage treatment facilities*. Oil and gas exploration, production, processing, treatment, and transmission facilities that discharge contaminated stormwater must also obtain industrial and/or construction *stormwater permits* with *exceptions*. Permits for *coal bed methane discharges* (exempted from guidelines above) are developed based on best professional judgment and vary greatly by state.
- **Dredge and Fill Permits (Section 404)** – Examine use of Nationwide Permit (NWP) 12 for oil or natural gas pipeline construction, maintenance, repair, and other activities.
- **Water Quality Standards (WQS)** – Pollutants of concern are those listed above as well as sediment from construction. Identify all impacted uses. Examine sufficiency of criteria and application of antidegradation policies.
- **Water Quality Certification (Section 401)** – Examine adequacy of state and tribal review of proposed activities.

## Priority laws for coordination with CWA

- **Safe Drinking Water Act (SDWA)** – underground injection control (UIC) of produced water
- **RCRA** – oil, gas, and drilling wastes excluded from hazardous in 1980s; when mixed with hazardous may all be considered non-hazardous
- **CERCLA** – management of hazardous wastes

## Agencies/organizations to know

- **EPA OGWDW** – lead agency on underground injection permitting and controls
- **FERC** – lead agency for all permits from EPA, Corps, USFWS, EIS
- **U.S. Army Corps of Engineers (Corps)**
- **Earthworks**



## 11 POOR FORESTRY PRACTICES

Poor forestry practices can cause significant water quality problems and harm aquatic life by limiting sources of food, shade, and shelter. Clearcutting leads to erosion of soil into rivers. Forest roads and clearcuts can cause landslides that bury streams below. Overgrazing and tree removal beside a stream can elevate water temperatures and destabilize banks. Pesticides applied to a stand of trees can leach to a nearby waterway through groundwater or be carried with the soil by stormwater. Different laws apply across the country for national, state, local, and private forests.

Climate change is impacting forests in several ways—by increasing wildfires, drought, flooding, and extreme heat among others. We are seeing unprecedented large-scale forest fires that are caused by a combination of a warming climate and long-term fire suppression that has created large dense homogeneous landscapes where fires burn at high intensities over unusually large areas. When forests burn in these unnaturally large and intense wildfire events, watersheds

can be devastated by ash and debris runoff. Post-fire runoff is high in organic matter and nutrients, which can lower dissolved oxygen levels and increase levels of pH, ammonium, nitrate, phosphate, and potassium, all of which harm aquatic ecosystems. These soils also may inhibit percolation of water to groundwater and critically important aquifers. Chemical changes can lead to greater post-fire flooding in all regions and dangerously limit freshwater in arid regions.

To address excessive carbon in the atmosphere, maintaining stands of *old trees* is proven to be more effective than planting *new trees*, however, both practices will result in carbon sequestration.

Many communities depend on healthy forests for clean drinking water, fuelwood gathering, subsistence fishing, and healthy flows essential for agriculture and recreation-based economies. These communities are impacted by poor forestry practices that are out of their control.



# 11 POOR FORESTRY PRACTICES

## Most commonly-used Clean Water Act programs to improve practices on forest lands

- **Dredge and Fill Permits (Section 404)** – Timber operations need to obtain Section 404 permits when moving land that might end up in water bodies. Understand [exemptions](#).
- **Water Quality Standards (WQS)** – Adequate sediment and temperature criteria, as well as any criteria related to pollutants that could run off during or after logging/management, need to be included in NPDES permits to protect designated uses.
- **Water Quality Certification (Section 401)** – Section 401 is required by Section 404 permit to ensure standards will be met with any proposed activities.
- **Discharge Permits (NPDES)** – A permit (usually a general permit) is required to apply pesticides near waterbodies. Water quality certification is also required if EPA is the permitting authority.
- **Impaired waters (Section 303(d)/Restoration Plans (TMDLs))** – Identify and include on Section 303(d) list any waters that are impaired around and downstream of managed forests, especially those threatened by proposed operations. TMDLs should be scheduled for all impaired waters near managed forests.
- **Nonpoint Pollution Management (Section 319)** – Provide resources for watershed-based planning and restoration projects, including in forested headwaters and riparian areas .

## Priority laws for coordination with CWA

- **National Forest Management Act**
- **Coastal Zone Act Reauthorization Amendments** – requirements for nonpoint source pollution in the coastal zone including runoff associated with forest practices
- **State and local forest laws and regulations**

## Agencies/organizations to know

- [USFS](#)
- [BLM](#)
- [NPS](#)



## 12 LOSS OF NATURAL HYDROLOGY

Water quality and water quantity are inextricably linked, and the impact of pollution is relative to the amount of water flowing. While the solution to pollution is NOT dilution, it is a vital component of the calculations in NPDES permits to determine how much point source pollution a water body can handle. These calculations are based on decades of historic data. Thanks to climate change, historic precipitation and streamflow data are no longer good predictors of future streamflows due to increased intensity and frequency of storms and prolonged drought conditions that are now evident across the country. If the permit calculations are wrong, and levels of pollution discharge are permitted that will cause standards to be violated and uses to be harmed, the communities downstream will suffer the most, whether by eating contaminated fish, swimming in contaminated water, or drinking water that cannot be sufficiently treated.

Replacing natural vegetation with buildings, roads, and lawns creates conditions that result in higher stormwater flows. These flows can destroy aquatic habitats by undercutting banks, removing woody debris from streams, and burying stream bottoms with sediment. They can also carry pollutants from lawns, roads, farms, and industrial areas into water bodies. These excessive streamflows are exacerbated by the increased intensity and frequency of storms resulting from climate change.

In some states, many water bodies and their tributaries have been “over-appropriated”—meaning that legal water withdrawals have exceeded the amount of water in the river. Usually, that means there is not enough water to sustain an adequate ecosystem-based flow. In the West, several states have adopted programs that require landowners to leave water in streams for fish, wildlife, ecosystem protection, recreation, aesthetics, water quality, navigation, hydropower, and other uses. In these cases, water is unavailable for consumptive uses if flows drop below a specified level.

Although the Clean Water Act does not directly address flow and cannot supersede state water quantity decisions,<sup>14</sup> effective use of basic CWA tools requires up-to-date information about streamflow levels, likely impacts of permitted activities on streamflows, and coordination with local and state water quantity decisions.



EPA [\*National Management Measures to Control NPS Pollution from Hydromodification\*](#), July 2007

[\*River Network, Environmental Flows and Water Security\*](#)

## 12 LOSS OF NATURAL HYDROLOGY

### Most commonly-used Clean Water Act programs to protect natural streamflows

- **Discharge Permits (NPDES)** – Urge your state or tribe to use current precipitation and streamflow data to develop permit limits. Examine flow levels assumed in permits in your watershed—they may be carried over from old permits.
- **Water Quality Standards (WQS)** – Consider proposing a flow criterion to protect uses dependent on seasonal flows. Ask for inclusion of a definition of critical low flow in your water quality standards to ensure development of protective seasonal criteria and to guard against variances and mixing zones when flows are too low. Examine accuracy of timing of seasonal criteria that relate to flows.
- **Impaired waters (Section 303(d)/Restoration Plans (TMDLs))** – Waters can be impaired for alteration of natural flows (low or high), but TMDLs are not developed for these waters ([sidebar, p. 130](#)). Identify which other criteria are exceeded due to reduced flows (e.g., temperature, dissolved oxygen) or excessive flows (e.g., bacteria, sediment). TMDLs are required to take into account seasonal fluctuations.

### Priority laws for coordination with CWA

- **Wild and Scenic Rivers Act**
- **Endangered Species Act**
- **State instream flow requirements**
- **State drought response plans**

### Agencies/organizations to know

- [WSRA managers](#) – BLM, USFWS, NPS, USFS
- [National Parks Conservation Association](#)
- [Instream Flow Council](#)



## 13 LOSS OF SPECIES AND ECOLOGICAL INTEGRITY

Pollution, development, logging, mining, poor agricultural practices, dams, and invasive species damage water quality, increase water temperatures, and alter hydrology. These effects are causing extinctions, reducing biodiversity, and damaging habitats in every part of the country. The loss of biodiversity has been dramatic in our urban areas, where waterways have been channelized and polluted for many years. In some cases these impacts to the aquatic ecosystems and the lands immediately adjacent to our waterways occurred long before the passage of the Clean Water Act.

The Southeast, home to an unparalleled aquatic species diversity, including the majority of all fish and mussel species in the entire country, has already suffered innumerable extinctions.<sup>15</sup> Damage to unique ecosystems in every part of the country is posing risks to vulnerable species like the Atlantic Sturgeon, the Ozark Hellbender, the Spikedace, the Topeka shiner, and the Lost River Sucker.

Healthy freshwater ecosystems provide valuable habitat and natural services—such as water purification, plant and animal foods, nutrient cycling, and biodiversity maintenance—that are critical for overall ecological integrity.

Climate change has resulted in changes to precipitation patterns, timing of vegetation, species migration, and pest migration<sup>16</sup> and is forcing many species to adjust to their changing environment. For example, reduced snowpacks decrease the supply of cold water needed by aquatic species like salmon. Climate change has been linked to the collapse of bee colonies.<sup>17</sup> Pollinators are finding that plants are now blooming a month earlier than forty-five years ago. Invasive species are taking advantage of changes that are devastating native communities. For example, in many streams, the non-native brown trout, which can tolerate higher temperatures, is gaining a competitive advantage over native brook trout.<sup>18</sup>



Center for Biological Diversity, *Southeast Freshwater Extinction Crisis*

# 13 LOSS OF SPECIES AND ECOLOGICAL INTEGRITY

## Most commonly-used Clean Water Act programs to stem species loss and protect ecological integrity

- **Water Quality Standards (WQS)** – Ensure threatened and endangered species and habitat are included in designated uses and development of criteria to protect them. Insist on adequate implementation of the antidegradation policy to protect existing water quality and ecologically significant areas.
- **Discharge Permits (NPDES)** – Wastewater and stormwater pollution limits must not cause or contribute to a violation of standards that should fully protect all existing aquatic species.
- **Impaired waters (Section 303(d))/Restoration Plans (TMDLs)** – Assessments should examine impacts to threatened and endangered aquatic species, include them as impairments, and target their health and reproduction in TMDL development.
- **Nonpoint Source Management (Section 319)** – NPS management plans should consider impacts to habitat of listed species. Grants should consider projects that protect or improve habitat of listed species.

## Priority laws for coordination with CWA

- **Endangered Species Act**
- **Wild and Scenic Rivers**

## Agencies/organizations to know

- [USFWS – Endangered species](#)
- [NOAA Fisheries – Endangered species conservation](#)

1 <https://www.epa.gov/npdes/combined-sewer-overflows-csos>

2 <https://www.epa.gov/npdes/sanitary-sewer-overflows-ssos>

3 Environmental Working Group, *Western Lake Erie Basin animal feeding operation analysis*, July 2022.

4 Climate and Clean Air Coalition and United Nations Environment Programme, *Global Methane Assessment*, May 2021.

5 [EPA, America's Wetlands](#)

6 Dahl and Allard, 1996

7 Arsenic, cadmium, lead, vanadium, chromium, as well as radioactive uranium and radon.

8 [Coal's Poisonous Legacy](#), p. 19.

9 Engelman-Lado, M, et. al, *Environmental Injustice in Uniontown, Alabama, Decades after the Civil Rights Act of 1964: It's Time For Action*, 5/21/21

10 See [Gulf South](#) community story.

11 Block, Samuel, *Mining Energy-Transition Metals: National Aims, Local Conflicts*, ESG Research, June 3, 2021.

12 Clean Water Action, *CWA Regulation of Oil and Gas Wastewater Discharges*, Jan 2020.

13 Proville, J., Roberts, K.A., Peltz, A. et al. *The demographic characteristics of populations living near oil and gas wells in the USA*. *Popul Environ* (2022).

14 CWA Section 101(g)

15 Center for Biological Diversity, *Southeast Freshwater Extinction Crisis*.

16 <https://www.nationalgeographic.com/science/article/climate-change-species-migration-disease>

17 Leah Duran, "The buzz on climate change: It's bad for bees." *Conservation International*, Aug. 17, 2017, online at <https://www.conservation.org/blog/the-buzz-on-climate-change-its-bad-for-bees>

18 Nathaniel P. Hitt, Erin L. Snook, and Danielle L. Massie, "Brook trout use of thermal refugia and foraging habitat influenced by brown trout," *Canadian Journal of Fisheries and Aquatic Sciences*, Sept. 29, 2016, online at <https://cdnsiencepub.com/doi/abs/10.1139/cjfas-2016-0255>

# CLEAN WATER ACT PROGRAMS



The programs that have been developed to meet the objective, goals, and policies of the CWA are implemented primarily at the tribal and state levels. The CWA requires federal, tribal, and state governments to allow, encourage, and assist interested individuals to be involved in policy and program decisions. In general, the greater the public involvement, the better these decisions have been and will be.

### WHAT FOLLOWS ARE EXPLANATIONS OF:

- [Water Quality Standards](#)
- [National Pollutant Discharge Elimination System Permits](#)
- [Dredge and Fill Permits](#)
- [Water Quality Certification](#)
- [Threatened and Impaired Waters](#)
- [Total Maximum Daily Loads \(TMDLs\)](#)
- [Public Enforcement of CWA](#)
- [Nonpoint Source Pollution Control and Grants](#)
- [Clean Water State Revolving Fund](#)

# WATER QUALITY STANDARDS: SETTING WATER BODY GOALS

Under the Clean Water Act, states<sup>1</sup> are required to establish water quality standards that define the goals for all waters of the U.S. (p. 14). Most states and tribes do so for more waters within their jurisdictions than would fit within that changing definition. Water quality standards give the Act much of its meaning and its force because discharge permits, the backbone of the CWA, cannot allow pollution that will cause or contribute to violations of water quality standards.<sup>2</sup> When water quality standards are not met, they prevent additional pollution, determine which waters are impaired and must be restored, and serve as goals for that restoration. Standards also create the framework for identifying where existing water quality must be maintained (wherever standards are met) and which waters must be protected for their ecological, recreational, or other significance. Standards alone do not implement the Clean Water Act, however. They are applied through all other programs of the CWA, such as the discharge permit system. Understanding water quality standards will help you to engage in those other programs effectively and set a course for protecting and restoring waters you care about.

In states where water quality standards are strong, they act as a powerful force to prevent pollution and improve water quality. In states where water quality standards do not sufficiently protect existing and designated uses, they likely give a false sense of security that waters are healthy when they only meet weak standards.

At first glance, water quality standards may seem to be of interest only to scientists, bureaucrats, and policy analysts, but water quality standards can be a matter of life or death for every water body, and the communities and aquatic life that depend on them.

## What are the major components of water quality standards?

In developing water quality standards, states and tribes must do the following:

- 1 designate uses (such as swimming or fishing);
- 2 establish water quality criteria (such as the maximum levels of bacteria allowed); and
- 3 develop and implement antidegradation policies and procedures.



## PURPOSE OF WATER QUALITY STANDARDS

“A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses. States adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act...[which]... means that water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation.”<sup>3</sup>

DESIGNATED USES	WATER QUALITY CRITERIA	ANTIDEGRADATION POLICY
DESIGNATED USES are human uses and ecological conditions that are officially recognized and protected. States must designate one or more uses for each water body or water body segment.	WATER QUALITY CRITERIA are descriptions of the conditions considered necessary to protect each designated use.	ANTIDEGRADATION POLICY is a required process for protecting all existing uses, keeping healthy waters healthy, and giving strict protection to outstanding waters.



## SOUTHWEST PHILADELPHIA

Bartram's Garden Public Boating Program highlighted inconsistencies and confusion in how Pennsylvania Department of Environmental Protection and Delaware River Basin Commission water quality standards apply to the tidal Schuylkill River. [Link to story.](#)



## Who is responsible for water quality standards?

All fifty states, the District of Columbia, the U.S. territories, and a growing number of Native American tribes have been authorized to administer water quality standards programs. Here and throughout the Manual, the term “states” will be used as shorthand to refer to states, the District of Columbia, and the U.S. territories. Tribes can gain federal authority to administer water quality standards by applying to EPA to be treated in a similar manner as a state ([see sidebar, p. 49](#)). This process is not just for the Clean Water Act, however. It can also be used to convey authority under the Clean Air Act, the Safe Drinking Water Act, and the Toxic Substances Control Act.

There are also regional water quality standards that have been developed by interstate commissions authorized under the CWA such as Delaware River Basin Commission ([DRBC](#)) and the Ohio River Valley Water Sanitation Commission ([ORSANCO](#)). The Great Lakes Initiative ([GLI](#)) is a guidance that EPA developed, based on the Great Lakes Water Quality Agreement with Canada to establish consistent and sometimes more stringent standards for the waters of the Great Lakes basin. In each of these examples, the states (and tribes in the case of GLI) within each region are charged with implementation of the standards developed in the context of the regional water body.

The CWA and implementing regulations have set the basic uses, and EPA has developed guidance and national recommendations for setting water quality criteria. If a state does not develop its water quality standards properly or in a timely manner, EPA can step in and propose and promulgate water quality standards as well.

While all water quality standards are developed through a similar science-based process, states and tribes use different processes for adopting water quality standards.

State and tribal implementation and enforcement of these three interrelated components of the Clean Water Act are fundamental to the nation's clean water system. States and tribes also develop, and EPA must approve, water quality policies and rules to implement the standards (“general policies”).<sup>4</sup> Two examples—variances and mixing zone rules—are addressed later in this section and on [p. 61](#). It is important to understand how your state approaches variances and mixing zones, dilution, and low flows because these rules, if not written properly, can lessen water quality protection.

These three fundamental components of the standards are water body-specific. In other words, different uses, criteria, and antidegradation protections are assigned to different water bodies or segments of water bodies depending on how those water bodies are used, or could be used, and on the level of water quality that is necessary to support those uses.

For example, a stream might be capable of supporting swimming, a trout fishery, and a public water supply. If the state has protected those uses in its water quality standards, the discharge permits they issue (discussed on [p. 75](#)) must have limits that prevent pathogens from entering the water, control pollutants that will harm trout, and ensure that chemicals discharged are at low enough levels to meet drinking water criteria after treatment.

If your state water quality agency doesn't properly designate the potential uses for your river, stream, lake, wetland, or estuary, and adopt criteria that protect those uses, your work to protect or restore it will be harder than necessary. In water bodies where the criteria do not protect all uses, harmful activities may be perfectly legal. This is why it's important to address weak standards in your watershed before specific harmful activities are proposed.



In some states, water quality standards must be approved by the legislature and signed into law by the governor. In other states, standards are adopted through the water quality agency's rulemaking procedures. For tribes and pueblos, the governing authority is responsible for adopting water quality standards. All adopted standards must be approved by EPA in order to receive federal authority to implement them.

The Clean Water Act requires regional EPA offices to approve or disapprove state water quality standards based on the adequacy of the adopted standards and procedures related to [several factors](#) explained in 40 C.F.R. § 131.5(a). Regional EPA offices, with oversight from EPA headquarters, must disapprove (and may promulgate other) standards if they do not meet these factors.<sup>5</sup> All EPA-promulgated state standards can be found at [40 C.F.R. § 131 subpart D](#).

### How are changes to standards adopted?

Before any changes to a state's water quality standards can take effect, the EPA must approve them ([see sidebar, p. 50](#)). When a state submits proposed changes to the EPA for review (which must be within 30 days of state adoption), the EPA has 60 days to approve them and 90 days to disapprove them. If the EPA disapproves some or all of the standards submitted, it must specify changes necessary to meet the requirements of the Act. And if the state does not make those changes (within 90 days), the EPA must develop and promulgate adequate standards for the state.<sup>6</sup>



## REQUIRED FOR EPA APPROVAL OF WATER QUALITY STANDARDS

After the state has adopted new water quality standards, the following elements must be included in its submission to the EPA for approval:

- “(a) use designations consistent with the provisions of Sections 101(a)(2) [fishable/swimmable] and 303(c)(2)[public water supplies, propagation of fish and wildlife, recreational purposes, agricultural, industrial, navigation and other] of the Act;
- (b) methods used and analyses conducted to support water quality standards revisions;
- (c) water quality criteria sufficient to protect the designated uses;
- (d) an antidegradation policy consistent with the federal policy found at 40 C.F.R. § 131.12;
- (e) certification by the state Attorney General or other appropriate legal authority that the water quality standards were duly adopted pursuant to state law; and
- (f) general information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include the uses specified in section 101(a)(2) [fishable/swimmable] of the Act as well as information on general policies applicable to State standards which may affect their application and implementation.”<sup>7</sup>



## TRIBAL WATER QUALITY STANDARDS

To develop and administer a tribal water quality standards program, tribes must first demonstrate the following factors to attain treatment similar to that of a state (TAS).

- (1) “The Indian Tribe is recognized by the Secretary of the Interior and meets definitions for Indian Reservation and Indian Tribe;
- (2) The Indian Tribe has a governing body carrying out substantial governmental duties and powers;
- (3) The water quality standards program pertains to the management and protection of the water resources which are within the borders of the Indian reservation and held by the Indian Tribe, within the borders of the Indian reservation and held by the United States in trust for Indians, within the borders of the Indian reservation and held by a member of the Indian Tribe if such property interest is subject to a trust restriction on alienation, or otherwise within the borders of the Indian reservation; and

The Indian Tribe is reasonably expected to be capable...of carrying out the functions of an effective water quality standards program in a manner consistent with the terms and purposes of the Act and applicable regulations.”<sup>8</sup>

Dozens of tribes have developed and adopted water quality standards that apply on their lands. You can view the [status](#) of all the TAS approvals for water quality standards as well as all approved tribal water quality standards. In 2016, EPA developed a [rule](#) that reinterpreted Section 518 of the CWA to highlight Congress' delegation of authority to tribes to administer regulatory programs. This rule is intended to reduce burdens on tribes related to the third factor above.

## Can the public play a role?

The public **MUST** play a role!

The Clean Water Act allows individuals to play a significant role in getting standards right by requiring states to provide regular opportunities for public review and comment to proposals and changes. Interested individuals have the right and responsibility to weigh in regularly on water quality standards issues in their state or in their tribal waters. The ability to engage in the review of existing standards and development of new standards is provided by the state- or tribal- or interstate commission-led Triennial Review Process that is required under the CWA.<sup>9</sup> Steps for engaging in development and approval of water quality standards including through the triennial review are featured on [page 70](#).

Just allowing public review and comment is not sufficient, however. When changes are likely to affect particular communities or populations (e.g., changes to stream reaches or changes to assumptions about fish consumption), it is the responsibility of the entity making the changes to the standards—state, tribal government, interstate commission, or EPA—to reach out to that community to inform them of the potential impact.

The CWA requires the EPA to oversee each state's public involvement processes, in addition to their water quality standards decisions as mentioned earlier. The EPA must step in if states fail to involve the public in all the necessary ways. One of the key ways people can help assure proper water quality standards is to inform the state or tribal authority and/or EPA about existing and emerging water quality issues as well as concerns about the public process.

## DESIGNATED USES

### What are “designated uses?”

After Congress passed the Clean Water Act, states were required and tribes were authorized to designate uses for each water body. The designated uses for each state may be general, such as recreation and aquatic life, or they can be more specific, such as swimming and cold water aquatic life. Designated uses are the current and aspirational human uses and ecological conditions that states recognize officially in their water quality standards.

A water body's designated uses must fully represent existing and potential uses. Not every existing use of a water must be individually designated, but the designated uses must be broad enough and require strong enough protections to support all existing uses.

Every water body is expected to be designated for recreation and aquatic life (the fundamental uses called out in the CWA), and if one is not, the state or tribe must document the reasons why it is not.<sup>10</sup> States may also designate other human uses such as fish consumption, shellfish harvesting, drinking water supply, aesthetic uses, cultural uses, or ceremonial uses. Tribal water quality standards most commonly include cultural and/or ceremonial uses, but they may also be designated by states for activities such as in-river baptisms. The majority of tribes within U.S. borders do not currently have authority to administer their own water quality standards. States may wish to work with tribes to ensure protection of tribal and cultural uses, especially in downstream waters.



### BASELINE TRIBAL WATER QUALITY STANDARDS AND PROTECTING RESERVED RIGHTS

EPA is currently working on two rulemakings that could apply to many federally-recognized tribes if they are adopted.

***Baseline Tribal Water Quality Standards*** that would provide a starting point or backstop for tribes who wish to administer their own water quality standards, but for whom the process of TAS or developing water quality standards is not yet completed or too onerous.

***Protecting Reserved Rights*** in this context are the rights that were articulated in treaties and equivalent agreements with the U.S. government. EPA is working on regulations that would help states incorporate these rights into water quality standards.



### EPA MUST APPROVE WATER QUALITY STANDARDS

Thanks to a 1997 federal court decision regarding Alaska water quality standards,<sup>11</sup> any changes to water quality standards adopted by any state or tribe after May 30, 2000, must be officially approved by EPA before they are considered valid. This decision is called the ***“Alaska Rule.”***



### NORTHERN NEW MEXICO

Communities for Clean Water in New Mexico fights water quality standard shenanigans by Los Alamos National Lab involving segment manipulation that puts waters at risk as the climate changes. [Link to story.](#)

## Are uses designated throughout entire water bodies?

In most states, larger water bodies are divided into discrete segments, and each is assigned its own designated uses and water quality criteria. Theoretically, these segments can be of any length or size but, ideally, they should reflect shifts in use and necessary levels of protection. For example, segments are commonly defined by tributaries, significant bends or constrictions in the water body, or changes in human uses (agriculture to suburban development).

States often break water bodies up into segments to distinguish among designated uses. Some states create classifications to assign bundles of designated uses to water body segments. For example, classification A might assign public water supply, cold water fishery, and swimming to one segment.

### What is the difference between an “existing” and a “designated” use?

The Clean Water Act makes an important distinction between “existing” and “designated” uses.

Existing uses are 1) those which have occurred at any time since 1975, when the CWA regulations regarding use designation were established, regardless of whether they have been designated,<sup>12</sup> and 2) those for which the necessary water quality has been attained, whether or not the use is being made.<sup>13</sup> For example, if a river’s water quality is good enough for swimming, and swimming has occurred at some point since 1975, then swimming is an existing use even if people do not currently swim there.

Designated uses are uses that have been officially recognized by the state or tribes in water quality standards, whether or not they are being attained.<sup>14</sup> Not every existing use needs to be listed as a

designated use, but all existing uses must be protected by the designated uses. For example, if people swim and boat in a water body, designating that water body for swimming may be sufficient to protect the water quality for both existing uses. If water bodies are being used for purposes that require better water quality than the current designated uses require, then “the state shall revise its standards to reflect the uses actually being attained.”<sup>15</sup>

### What does it mean to “attain” a use?

The word “attained” has created confusion. EPA guidance and updates to the Water Quality Standards Handbook lean toward the requirement that the use has occurred/is occurring AND the water quality for the use is sufficient, but others interpret the statute differently. There are caveats in the guidance, however, that suggest where data are unavailable or inconclusive the state or tribe has the discretion to use their best professional judgment to determine whether a use is an existing use.

### Does the designation of one use prohibit another?

Water bodies are often designated for several uses. Uses that don’t require high water quality (such as navigation) and uses that have water quality impacts (such as industry or agriculture) may be designated. Under the Clean Water Act, however, a stream cannot be designated to receive and carry away pollutants because the Act was specifically drafted to control such activities, not protect them<sup>16</sup> ([see sidebar, p. 52](#)).

In other words, the designation of a use does not imply a license to degrade water quality. In water bodies with several uses, the level of quality necessary to support the most sensitive designated and existing uses must be maintained.



### TYPICAL DESIGNATED USES

- Public water supplies
- Protection and propagation of fish, shellfish, and wildlife
- Recreation
- Agriculture
- Industry
- Navigation
- Other: coral reef preservation, marinas, groundwater recharge, aquifer protection, hydroelectric power<sup>17</sup>

In addition, states and tribes have designated aesthetic, cultural, and ceremonial uses as well as several subcategories of the above uses such as cold and warm water fisheries, swimming, or aquaculture.



### RECOGNIZING AND PROTECTING TRIBAL USES

Many tribal water quality standards include cultural, traditional, and/or ceremonial uses. The majority of federally-recognized tribes do not have authority to implement water quality standards over their waters, however.

### MOST SENSITIVE USES (by pollutant)

	Bacteria	Temperature	Sediment	Cryptosporidium*
Swimming	X			
Aquatic Life		X	X	
Drinking				X

\*not all water treatment systems are capable of removing this pathogen

### Which use is the most sensitive to pollution?

The sensitivity of every use depends on the pollutant in question. Some uses require greater protection from certain pollutants, but not from others. For example, fish and macroinvertebrates are likely to be more sensitive to high water temperatures than are swimmers. When a water body is designated for more than one use, protective levels for each pollutant and water body condition are to be set based on the use that is most sensitive to the pollutant or condition.

### What exactly is meant by “fishable/swimmable” water quality?

“Fishable” is shorthand for the quality necessary to support the protection and propagation of fish, shellfish, and wildlife. “Swimmable” is shorthand for the quality necessary to support safe recreation in and on the water—and includes all types of water-based recreation. This language comes from one of the interim goals of the CWA.<sup>18</sup> Although the term “fishable” sounds like it only describes waters clean enough to support fish for us to catch, it refers more broadly to water quality that is good enough for a healthy and balanced population of native aquatic life.

The EPA says that “to be consistent with the...interim goal of the Act, states must provide water quality for the protection and propagation of fish, shellfish, and wildlife and provide for recreation in and on the water where attainable.”<sup>19</sup>

If either “aquatic life” or “recreation” uses are not designated for a water body, the CWA requires the state to formally reexamine the attainability of these uses at least once every three years.<sup>20</sup> From a legal perspective, states cannot simply omit the designation of these basic uses and abandon polluted water bodies. Unfortunately, this provision has not been enforced. Many of the nation’s waters that remain “un-fishable” or “un-swimmable” have never been subjected to a formal scientific analysis and, therefore, have never been afforded the required protection under the CWA.



### EXISTING AND DESIGNATED USES

“Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.”

“Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained.”<sup>21</sup>

November 28, 1975, is the day that EPA adopted the first regulations detailing how to implement the Clean Water Act.



### PROTECTION OF EXISTING USES

CWA regulations at 40 C.F.R. § 131.10(h) state “States may not remove designated uses if...they are existing uses, as defined in Section 131.3, unless a use requiring more stringent criteria is added.”

In addition, the antidegradation policy states that “[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.”<sup>22</sup>



### IS DILUTION OF POLLUTION A PROTECTED USE?

No. CWA regulations state that “[i]n no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.”<sup>23</sup>



### SUPPORTING THE SENSITIVE USES

The regulations require that designated uses must protect the most sensitive uses in the water. Many people assume that “swimming” is a more protective designation than “aquatic life” and that “drinking water” is more protective than “swimming.” Thus, they assume that if their water body is designated as “drinking water,” it is receiving the strongest possible protection.

But the relative stringency of designations can only be judged on a pollutant-by-pollutant and use-by-use basis. For example, increased salinity does not harm a swimming use (after all, people do swim in the ocean), but it could be disastrous for some freshwater fish and many of their food sources. Moreover, increased bacteria in a water body may not create an immediate hazard for people in cities that use it as a drinking water source (because bacteria, up to a point, can be treated in a drinking water treatment plant), but it could put people who swim in the water body at immediate risk. It is important to note that in protecting drinking water as a use, the Clean Water Act assumes at least the basic required treatment will occur.

So, a “drinking water” designation is not necessarily more protective than a “swimming” designation, and a “swimming” designation is not necessarily more protective than an “aquatic life” designation. This is why multiple designated uses are often necessary to protect all existing uses.

## If a segment is designated for “swimming,” is it safe to swim there?

Waters designated for “swimming” are not always safe for swimming. Neither are waters with a “fishing” designation necessarily safe for fish, other aquatic organisms, or for catching and eating fish.

A water quality designation recognizes current and potential uses and sets the conditions necessary to support them. It does not necessarily make any statement about current water quality conditions.

Agencies are often reluctant to upgrade a water body’s use designation to include current or potential uses if satisfactory water quality conditions to support the proposed designations don’t already consistently exist. Yet, waters should be classified to protect all uses that are occurring, even if water quality is not yet consistently good enough to support that use. For example, if people are actually swimming in the water, the water should be classified for swimming to protect against harmful pollution, even if current water quality is sometimes unsafe for swimming.

## What if a use is desirable, but is not occurring now?

States may designate uses that are anticipated or desired. For instance, a state may choose to classify a water body for a “drinking water” use, even though no one is currently using it as a drinking water source. The drinking water designation would help the state set official protection or clean up goals. It would also help prevent new polluting activities that could make it harder to maintain or achieve the desired level of quality suitable for public water supply.

## Why is it important to designate the right uses?

Designation of the right uses will lead to the development of sufficiently protective criteria ([see next section, p. 56](#)). The criteria set the level of water quality that must be maintained or achieved in the water body and, in turn, the level of control required for any proposed or existing pollutant sources.

If you want to make sure that the Clean Water Act works properly in your watershed, you must begin by making sure that the right uses are designated.

## Do agriculture, industry, and navigation uses need to be “protected?”

Some states list agriculture, industry, and navigation among their designated uses. These are, in fact, three of the uses that the Clean Water Act directs states to protect.

Sometimes specific agricultural or industrial uses require stringent criteria or conditions (e.g., sensitive crops or chip manufacturing), but these uses do not usually require high levels of water quality. While designating these uses does no harm (unless they are the only designated uses), it may do little or nothing to protect or improve water quality.

Only the designation of the most sensitive uses, accompanied by the most stringent criteria, can lead to the protection that water bodies need. “Fishable and swimmable” water quality will generally support agriculture, industry, and navigation. But the reverse is less likely to be true.



## IMPORTANT WORDS TO DEFINE IN YOUR WATER QUALITY STANDARDS

Most water quality standards include a definitions section. Given the ways that climate change is altering our waters, consider asking your state or tribe to include the following definitions and to apply them in your standards:

- climate change
- critical low flow
- baseflow
- ephemeral waters

For example, below a particular critical low flow, mixing zones ([pp. 84–85](#)) should not be allowed.

Perhaps you can think of others that are important to your watershed, state, or tribe.



## PROTECTING “AQUATIC LIFE”

The EPA gives special emphasis to protecting aquatic life in its Water Quality Standards Handbook (4.4.2) and its publication “Questions and Answers on Antidegradation” (p.3, #8):

“Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species... Any lowering of water quality below this full level of protection is not allowed. ... The fact that sport or commercial fish are not present does not mean that the water may not be supporting an aquatic life protection function. An existing aquatic community composed entirely of invertebrates and plants, such as may be found in a pristine alpine tributary stream, should still be protected whether or not such a stream supports a fishery.”



### Can designated uses be removed?

The removal of designated uses is discouraged and may occur only in specific, limited circumstances. Weakening or removing a designated use is called “downgrading.” Downgrading is prohibited if it would remove protection for any existing use. It is also prohibited if water quality to support the designated use could be attained through point source or nonpoint source controls (see [NPDES, p. 75](#) and [Section 319, p. 140](#)).<sup>24</sup> If the designated use is not an existing use, and if all regulatory controls and best management practices are in place, a scientific assessment of the chemical, physical, biological, and economic factors that determine whether the use can be achieved (called a Use Attainability Analysis) must be performed before a designated use can be weakened or removed.<sup>25</sup>

Across the country there is increasing pressure to downgrade and remove uses amidst claims that uses were improperly designated in the 1970s or that they simply cannot be met.

### How can I make sure that all the correct uses are designated for my watershed?

Watershed groups can play a significant role here. Put yourself in the driver’s seat by placing the issue of comprehensive use designation for your watershed’s streams on your state’s official agenda.

Gather information—pictures, newspaper articles, personal letters and the like—from many individuals and community perspectives to document the full range of existing uses all the way back to November of 1975 when the CWA regulations were finalized. Provide this information to your water quality agency, other public interest groups in the area, and the media. Establish a thorough record. Keep the EPA informed because they can pressure the state to make necessary changes.

Then make a formal proposal to the state to designate all the proper uses for all the rivers, streams, lakes, wetlands, and estuaries in your watershed. Continue to pursue the issue until all existing uses are included in the designated uses for your watershed.

The designation of a use is the essential first step toward protecting the ecological conditions necessary to support the use. The next step is the application of strong water quality criteria.



#### RESTRICTIONS ON REMOVAL OF USES

“States may not remove designated uses if: 1) they are existing uses, as defined in Section 131.3 [of the regulations], unless a use requiring more stringent criteria is added; or 2) such uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Act and by implementing cost-effective and reasonable best management practices for nonpoint control.”<sup>26</sup>



#### USE ATTAINABILITY ANALYSIS

“Use attainability analysis is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in 131.10g.”<sup>27</sup>

“A State must conduct a use attainability analysis as described in § 131.3(g), and paragraph (g) of this section, whenever:

- (1) The State designates for the first time, or has previously designated for a water body, uses that do not include the uses specified in section 101(a)(2) of the Act; or
- (2) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Act, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires criteria less stringent than previously applicable.”<sup>28</sup>



#### NORTHEAST IOWA

Advocates in Iowa won a lawsuit against the state agency to require Use Attainability Analyses for more than 80% of their perennial streams that had been wrongly designated as “general use” without protective criteria. [Link to story.](#)



## ACTION CHECKLIST DESIGNATED USES

- Get on the interested party list for your state water quality agency. Ask about the timing for the next triennial review ([p. 70](#)) of water quality standards.
- Are all communities affected by pollution informed about changes to water quality standards?
- Develop the list of existing uses in your watershed. Work with neighborhoods and community leaders to capture uses not reflected in water quality standards. For example, are people fishing for subsistence? What are the ways different cultures use the water bodies for rituals or ceremonies? Are uses in your watershed changing due to climate change? Are fish spawning and rearing in different locations? Are species migrating to different locations?
- Identify any waters whose existing uses may not be adequately protected by the uses that have been designated.
- Get a copy of your [state](#) or [tribe's](#) water quality standards.
- Examine which uses have been designated specifically for the rivers, lakes, streams, wetlands, and estuaries in your watershed. Compare them to your list of uses.
- Provide your water quality agency with information (pictures, newspaper articles, personal letters, notes from your interviews with river users, etc.) to demonstrate the full range of existing uses for each water body since November 28, 1975.
- Identify any waters without recreation or aquatic life designated uses. Ask for a “use attainability analysis” (scientific evaluation) for each.
- Watch for proposals to remove uses or “downgrade” uses in your watershed. Insist on “use attainability analyses” when they arise and defend against removal of any uses that are existing.
- Support or initiate the designation of any additional uses necessary through options explained in Getting Standards Right ([p. 70](#)).

# WATER QUALITY CRITERIA

## What are water quality criteria?

Water quality criteria are science-based narrative and numeric descriptions of the chemical, physical, and biological conditions necessary to achieve and protect designated uses. The criteria are adopted into the state or tribal water quality standards along with the designated uses and the antidegradation policy and methods [\(p. 63\)](#).

Water bodies are said to “support their uses” if water quality does not violate criteria. Waters are said to be “impaired” if the standards are not met, which means water quality violates criteria or, in some other way, designated uses are not supported.<sup>29</sup> If impaired, waters must be improved through pollution control, enforcement, and/or water quality restoration activities [\(Section 303\(d\)/TMDLs, p. 124\)](#). The connection between designated uses and the water quality criteria that describe the conditions necessary to support those uses is critical to the success of the Clean Water Act (see sidebar).

USE	SAMPLE CRITERIA TO PROTECT USE
Swimming →	Bacteria and toxic chemicals
Trout →	Temperature and DO
Public Water Supply →	PFAS and Sediment

The water quality criteria component of the standards should contain more than just limits for a few common pollutants. They should be varied and strong enough to define complete success in achieving the Clean Water Act’s goal of protecting uses and “chemical, physical, and biological integrity” for each water body in the state.

States and many tribes have established jurisdiction-wide criteria associated with each designated use. These criteria should be seen as starting points. Additional and more protective site-specific criteria can and should be developed for many waters. For example, the state’s acceptable pH range may be too broad, the minimum standard for dissolved oxygen may be too low, or the maximum temperature standard may be too high to protect the most sensitive organisms in your watershed.

It is common for uses and criteria to be assigned to the different water bodies, or different segments of the water bodies, throughout the state or tribal jurisdiction.

You should gather, develop, and evaluate as much information as possible about the site-specific ecological characteristics and human uses of waters in your watershed. Then you should provide this information to your water quality agency and encourage the agency to establish criteria that fully protect existing uses in all segments of your watershed.



## WATER QUALITY REQUIREMENTS

“States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.”<sup>30</sup>





## What are numeric criteria?

“Numeric criteria” are measurable water quality benchmarks. They are extremely important, because they serve as the basis for developing pollutant limits for discharge permits ([NPDES, p. 83](#)). They are also valuable in identifying water quality problems and establishing specific, measurable goals for water quality restoration plans ([303\(d\)/TMDLs, p. 124](#)).

For most pollutants, numeric criteria are expressed as maximum acceptable concentrations. For some other water quality measures, such as dissolved oxygen and temperature, they are expressed as a minimum or maximum acceptable level. For still others, such as pH, they are expressed as an acceptable range.

An example of a numeric criterion is “dissolved oxygen ≥ 5.0 mg/L.” In plain English, this means that the level of dissolved oxygen in the water body should always be at least five milligrams per liter.

Each criterion must express the **MAGNITUDE** (e.g., concentration), the **DURATION** (e.g., over what period the concentration will be examined, or averaging period), and the **FREQUENCY** (e.g., how often can an exceedance of the concentration occur without being a violation).<sup>31</sup> Using the dissolved oxygen example above, it would be necessary to know more about that criterion. For example, dissolved oxygen must be at least 5 mg/L as a daily average, and can never be exceeded, or only once a month, or once a year. When the frequency is not included, it is assumed to be never.

Numeric criteria related to **human health** (drinking water and eating fish or shellfish) and **aquatic life** conditions are developed to determine and protect against acute and chronic exposures from contaminated surface water. An acute exposure is usually high in magnitude, short in duration, and may result in grave consequences such as death after only one exposure. This could be after a toxic chemical spill, for example. A chronic exposure is lower in magnitude, longer in duration, and occurs frequently resulting in sub-lethal or lethal consequences. Long-term exposure to chemicals by eating contaminated shellfish could result in severe illness or death.<sup>32</sup>

## What are narrative criteria?

“Narrative criteria” are statements that establish water quality goals. Some narrative criteria describe a desirable biological condition, such as a balanced, healthy population of native aquatic life. Others express general statements about conditions that should or should not exist. For example, many states’ narrative standards say waters should be “free from substances that may cause adverse effects to aquatic life or human health.”

Since no state can ever set numeric criteria for all conceivable pollutants and water quality parameters, narrative criteria serve as an important backstop to numeric criteria. Narrative criteria are necessary to meet minimum legal requirements of the Act; all states include at least some narrative criteria in their standards today. One of the greatest challenges, however, is translating narrative criteria into discharge permit limits or into measurable goals for protecting and restoring water quality ([sidebar p. 61](#)). Narrative criteria should always supplement numeric criteria, but can never replace them.

## Why do we need chemical, physical, and biological criteria?

Most criteria adopted to date have focused on chemical measures of water quality. As important as these are, they will never be able to fully describe the conditions of a healthy water body. In other words, the basic criteria developed by most states to date are essential, but not sufficient.

Consider the example of pure water running down a concrete ditch. It might well pass every numeric, chemical test, but it certainly does not represent a healthy water body capable of supporting a wide range of human and ecological uses.



## DEVELOPMENT OF PFAS CRITERIA

EPA and many states are wrestling with the relatively recent discovery of ubiquitous PFAS chemicals in our surface water and groundwater. EPA has developed criteria for [PFOA](#) and [PFOS](#). Michigan has developed [water quality values](#) for PFBS and PFOA. Colorado uses its existing [narrative criteria](#) to address PFAS in surface waters.



## NARRATIVE CRITERIA FROM COLVILLE CONFEDERATED TRIBES INDIAN RESERVATION

“All waters within the Reservation, including those within mixing zones, shall be free from substances attributable to wastewater discharges or other pollutant sources that:

1. settle to form objectionable deposits;
2. float as debris, scum, oil, or other matter forming nuisances;
3. produce objectionable color, odor, taste, or turbidity;
4. cause injury to, or are toxic to, or produce adverse physiological responses in humans, animals, or plants; or
5. produce undesirable or nuisance aquatic life.”<sup>33</sup>

Narrative criteria such as these are often referred to informally as a state’s “free from” standards.



## GULF SOUTH

Narrative standards that were implemented in a permit were used to stop an illegal discharge into the Mississippi River. [Link to story.](#)

CRITERIA EXAMPLES

	NUMERIC (maximum, minimum, acceptable range)	NARRATIVE (watershed health goals)
<b>CHEMICAL</b> Metals, pesticides, toxic contaminants, pH	Zinc ≤ 120µ/L*      pH 6–9 Copper ≤ 13µ/L*      Dissolved Oxygen ≥ 6mg/L Dieldrin ≤ 0.24µ/L* * freshwater acute criteria	<ul style="list-style-type: none"> <li>• No toxic contaminants in toxic amounts.</li> <li>• No arsenic above natural levels.</li> </ul>
<b>PHYSICAL</b> Temperature, sediment, flow, habitat conditions	Temperature < 60 degrees      Cobble ≥ 25% TSS < 45 mg/L                      Width to depth ration Flow > Minimum flows often set by fish and wildlife agencies	<ul style="list-style-type: none"> <li>• No temperature fluctuations or sediment loading above “natural” conditions.</li> <li>• Flows must be sufficient to protect designated and existing uses.</li> <li>• Habitat must support designated uses.</li> </ul>
<b>BIOLOGICAL</b> Species abundance, richness, and diversity	Index of Biotic Integrity (IBI) Invertebrate Community Index (ICI) Number of each type of benthic macroinvertebrate found Number of types of benthic macroinvertebrates found	<ul style="list-style-type: none"> <li>• Unimpaired habitat for aquatic life.</li> <li>• Water quality shall be sufficient to sustain a diverse macroinvertebrate community of indigenous species.</li> <li>• Waters which currently support a high quality aquatic community shall be maintained at that high quality.</li> </ul>

**How are state water quality criteria developed?**

EPA must review and update national criteria guidelines that reflect the latest scientific knowledge.<sup>34</sup> States may do their own research and policy work to develop criteria; however, this can be a substantial technical and financial burden. Consequently, most states rely heavily on EPA guidance documents when dealing with common pollutants and some pollutants of special concern. Because these guidance documents are not regulations, they cannot impose requirements on EPA, states, authorized tribes or the regulated community.<sup>35</sup>

**States and tribes can**

- 1 incorporate EPA guidance on a criterion directly into their water quality standards,
- 2 tailor EPA guidance to fit local conditions, or
- 3 develop a state-specific criterion using scientifically defensible methods.

Only after criteria are adopted by states or tribes as part of their water quality standards do they become enforceable regulations.

There are many factors that go into the development of numeric criteria. EPA guidance provides a range of options for states and tribes to choose from in their development of state water quality standards. The choices made can result in huge differences in the pollutant levels considered acceptable. It is worth examining your state or tribe’s methods for establishing criteria to see what assumptions go into setting these limits.

In the case of human health criteria, for example, assumptions are made about fish consumption rates, body weight, drinking water intake, and “acceptable” cancer risk, among others (see table).

STANDARD ASSUMPTIONS IN A HUMAN HEALTH WATER QUALITY CRITERION	
FACTORS	ASSUMPTIONS
Fish/shellfish consumption rate	22g/day, (.049 lbs/day); 90th percentile for adults 21 and older; <b>recommends local or regional data to capture highly exposed populations</b>
Body weight	80 kg (176.37 lbs); mean body weight for adults 21 and older
Drinking water intake	2.4 L/day (0.634 gal/day); 90th percentile for adults 21 and older

Source: [Human Health Ambient Water Quality Criteria: 2015 Update, June 2015.](#)



## FISH CONSUMPTION RATES

Throughout the country, individuals and entire communities depend on fish and other aquatic life as a vital and sacred source of food. This includes Native American communities, immigrant populations, and people who live in rural, suburban, urban, and coastal areas—including the Gulf of Mexico, Chesapeake Bay, and the Pacific Northwest regions. For decades there has been pressure to identify and incorporate accurate fish consumption rates into calculations of water quality criteria for persistent pollutants such as mercury and PCBs.

A [fish consumption study](#) by four Tribes in the Pacific Northwest in the 1990s was one of the earlier efforts to identify and address this concern. Based on this study, Oregon increased their fish consumption rate to the highest level in the country (175g/day), however the process took until 2011. That increased rate resulted in [improved water quality criteria for fish consumption](#).

The report from a National Environmental Justice Advisory Council Meeting focused on [Fish Consumption and Environmental Justice](#) in December 2001, documented at that time that many state fish consumption rates remain at 6.5 g/day because it was the default EPA rate until 2000. EPA developed a target population subsistence fishers consumption rate of 142.4 g/day.<sup>36</sup> Alaska, a region that is home to more than 180,000 tribal members of 229 federally recognized tribes, plus numerous others that are not officially recognized, is one of those states with a 6.5g/day fish consumption rate that guides the development of human health water quality criteria.

Interviewers used salmon fillet replicas to help estimate portions.



## PACIFIC NORTHWEST

In 2010, the Spokane Tribe of Indians adopted a new PCB standard of 1.3 pg/L based on a fish consumption rate of 865 grams of fish per day to recognize a subsistence quantity of fish consumption. [Link to story.](#)

## What are “biocriteria?”

Healthy streams, lakes, and wetlands support healthy communities of aquatic life. Biological criteria (called “biocriteria” for short) are narrative descriptions and numeric values that define the Clean Water Act’s reference to biological integrity. They do so by describing the communities of fish, bottom-dwelling invertebrates (like insects, mollusks, crustaceans, and worms), algae, and aquatic plants that live (or would live) in a healthy water body.

To protect and restore biological integrity, we need to have an idea of what “natural conditions” (also known as reference conditions) are. Waters in every region that represent “least-impaired” systems need to be identified and protected. For some systems, such as lakes, evaluating the record stored in sediment profiles may provide a measure of less-disturbed conditions.

## Why use biocriteria?

Biocriteria can be used to document problems that would otherwise go undetected. Many intense but short-term pollution events have serious biological effects, but are impossible to document through conventional chemical stream monitoring alone, unless one happens to monitor at the time that the bolt of pollution occurs. When such an event occurs, a violation of biological criteria is often much easier to demonstrate than a violation of a chemical standard, since a biological effect is usually much longer-lasting than the pollution event itself.

For example, if there is a midnight pulse of pollution from a temporary bypass of an industrial discharge treatment facility, typical periodic monitoring methods that focus exclusively on chemical water quality might fail to document the problem. But an inexpensive assessment of the number, diversity, and balance of small, bottom-dwelling aquatic organisms conducted days or even weeks later might demonstrate a marked difference between stream health upstream and downstream of the offending facility.

Such inexpensive assessments can effectively detect many types of problems—including problems relating to land uses—that would otherwise be undocumented or even unsuspected. Once detected, problems can be addressed, and additional monitoring (that can be too expensive to conduct throughout the watershed on an ongoing basis) can be targeted for the site.

Most importantly, biocriteria can help us begin to grasp the most difficult problem of all—determining the cumulative effects of many watershed activities. It is virtually impossible to do this using chemical criteria alone.



## WETLAND WATER QUALITY STANDARDS EXAMPLE

Ohio created a wetland designated use, wetland-specific narrative criteria, criteria for discharges to wetlands, and a wetland antidegradation policy.

The narrative criteria read as follows: (A) The hydrology necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on any of the following:

1. Water currents, erosion or sedimentation patterns.
2. Natural water temperature variations.
3. Chemical, nutrient and dissolved oxygen regimes of the wetland.
4. The movement of aquatic fauna.
5. The pH of the wetland.
6. Water levels or elevations, including those resulting from ground water recharge and discharge.
7. The biological integrity of natural floral and faunal communities.

(B) Water quality necessary to support existing habitats, and the populations of wetland flora and fauna shall be protected to prevent significant adverse impacts on any of the following:

1. Food supplies for fish and wildlife.
2. Reproductive and nursery areas.
3. Dispersal corridors...
4. Biodiversity.
5. Maturity level of woody vegetation,
6. Water quality shall be protected to prevent conditions conducive to the establishment or proliferation of nuisance organisms, ....

(C) Conditions shall not occur that will have a significant adverse impact on the ability of the wetland to be used for wetland-dependent recreational opportunities in or on the water.<sup>38</sup>

Visit EPA's [website](#) for current information and guidance and templates for developing wetland uses and water quality criteria to protect the full range of wetland functions and ecological conditions.

## Are there any disadvantages of biocriteria?

It is harder and harder to find comparable reference sites that are relatively undisturbed. If a poor reference site is chosen, the target biocriteria will be too weak because it will not protect aquatic life that would be present in a better reference site.

Biocriteria cannot describe the health of water bodies on their own. Even when we are able to determine an impact on the biological community, we often can't pinpoint the source of the impact. To the extent that it is possible, chemical, physical, and biological criteria need to be employed collectively to determine the health and the trends of our watersheds.

## What about wetlands criteria?

Many states have adopted specific criteria for protecting wetland uses. Because wetlands have unique chemical, physical, and biological characteristics, this makes sense. Narrative criteria, especially narrative biological criteria, can be used to manage a broad range of activities (particularly physical and hydrologic modifications) that impact the functions and values of wetlands. Water quality criteria developed for the protection of freshwater and saltwater aquatic life by states, tribes, or EPA are generally applicable to most wetland types. Where wetland criteria do not exist, the general water quality criteria apply. However, certain criteria values such as dissolved oxygen, turbidity, color, and hydrogen sulfide, may be different for wetland systems.

## How does climate change affect established uses and criteria?

Changing precipitation patterns can require the reevaluation of applicable uses and their corresponding criteria. For example, where timing of heavy rains or drought change waters from ephemeral to intermittent to perennial, or vice versa, uses may change in temporary or permanent ways. In adopting water quality criteria, states, tribes, and EPA must take into account how "natural conditions" and reference streams may be changing.

## How do water quality criteria relate to permit limits?

Water quality criteria are developed to assess the ambient quality of each water body, not the quality of wastewater that is discharged into it. However, the pollution limits in each discharge permit must be calculated to ensure that all water quality standards for the receiving water body will be met ([NPDES, p. 83](#)).

For example, if a state finds that a discharger who is meeting only the minimum technology-based discharge standards would cause or contribute to a violation of water quality standards<sup>37</sup> for the "receiving water," the state must then require the discharger to apply as much additional treatment as necessary to avoid violating the water quality standards and to protect the water body.

## When are pollution dischargers allowed to violate existing water quality standards?

The CWA regulations allow states and tribes to develop procedures in their general policies that authorize violations of water quality standards under certain circumstances and certain timeframes. Two examples of these procedures are variances and mixing zones.

**Variances** are time-limited waivers of water quality standards intended to allow flexibility to discharges to make needed improvements in their technology over that time.<sup>39</sup> There must be

- a. regular accountability for progress—particularly to affected communities,
- b. adjustments when water body conditions or watershed-related sources change,
- c. commitment to maintaining the highest possible water quality while the variance is in effect, and
- d. commitment to ultimately attaining water quality standards.

**Mixing zones** are areas at the end of an industrial or municipal wastewater discharge—usually out of a pipe—where acute and chronic water quality standards are waived until the discharge is able to dilute in the receiving water. (*NPDES, p. 84*) These waivers are authorized in water quality standards, but implemented in pollution discharge permits. When developed, they should be as small as possible, and there are areas or times of the year where they should be prohibited such as upstream of swimming areas in the summer, drinking water intakes, habitat for sensitive aquatic populations and during spawning season.

## How do water quality criteria relate to water quality restoration plans?

Water quality criteria should be the targets or goals for water quality restoration plans (Total Maximum Daily Loads/TMDLs). The TMDL section (*p. 129*) explains these water quality restoration plans in detail. TMDLs must lay out a plan to sufficiently reduce and prevent contributions of pollution into each water body to achieve water quality criteria and support uses.

Because these plans are based on the strength and comprehensiveness of water quality standards, the value of employing a variety of water quality criteria to fully protect each use is underscored. Monitoring and assessment of many criteria is extremely useful in identifying problems, correcting them, and maintaining chemical, physical, and biological integrity.

If even one criterion is not met, the water body is only partially meeting uses, at best, and it is considered “impaired” even if all other criteria are met (*Section 303(d)/TMDLs, p. 124*).



### TRANSLATING CRITERIA INTO POLLUTANT LIMITS

States often rely on EPA guidance documents when determining criteria for specific pollutants. These guidance documents typically contain many caveats. For example, they might note that a given pollutant is easily tolerated by some organisms but very poorly tolerated by others, or that synergistic effects have been noted when the pollutant in question is found with certain other pollutants.

Unfortunately, such caveats are frequently overlooked when permits are written that allow increased levels of pollutants. It is worth gathering a few of these EPA guidance documents for pollutants of special concern in your area. When permits are issued or renewed, make sure that the EPA’s numeric pollutant criteria recommendations are being applied with full consideration of site-specific issues that the EPA intended.

It is also important that states develop a method to translate narrative water quality standards into numeric permit limits designed for the particular permitting situation.<sup>40</sup>

## ACTION CHECKLIST WATER QUALITY CRITERIA

- Get a copy of your [state](#) or [tribe's](#) water quality standards through EPA or by searching online.
- Review the general narrative criteria that apply across the state.
- Review the numeric criteria developed to protect existing and designated uses in your watershed. Is the state missing important criteria for a use, a water body, or during a particular time of the year? What else should be measured, monitored, and controlled through permits?
- Identify how protection differs between designated uses. For example, how does the temperature criterion change from “cold water fishery” to “warm water fishery”? How does the bacteria criterion change from swimming to boating? Is it seasonal?
- Encourage states to adopt wetland designated uses and criteria, particularly as a climate change resilience strategy.
- Partner with community-based organizations throughout your watershed to develop a list of state-wide and watershed-specific criteria that may not be strong enough to protect existing uses in your watershed; develop your case for improving these criteria.
- Coordinate with community-based organizations to make your case for improvements to criteria during the triennial review or in a petition process ([see more on this, p. 70](#)).
- Make sure that any caveats or regionally-specific characteristics stated in EPA criteria guidance documents are fully considered when criteria are established, permits are written, and water quality restoration plans (TMDLs) are developed or updated.
- Insist that permits and water quality restoration plans (TMDLs) in your watershed are based on the appropriate criteria.
- Look for your state or tribe's variance procedures in the water quality standards. Review them closely; ask questions about where they are applied, when they expire, and what the accountability measures are to affected communities. Inform downstream communities of variances in the watershed.

# ANTIDegradation Policy & Methods

The antidegradation policy is the third major required component of state water quality standards. Although it is just as important as the others, it is the least well known and consequently the least implemented and enforced of the three. Designated uses and water quality criteria provide minimum goals for a water body. But the Clean Water Act was not designed to allow waters to be degraded to the point that they are just barely meeting criteria or even degraded at all. The antidegradation policy provides a framework for protecting the good quality of water bodies that meet or exceed their standards.

As we strive to fulfill the Clean Water Act’s primary objective—to restore and maintain the chemical, physical, and biological integrity of the nation’s waters—the

antidegradation policy should be our primary tool to recognize and protect current water quality that fulfills the objective and future water quality when restoration efforts have been successful.

## What does the federal antidegradation policy require?

The federal policy provides an approach to water quality protection based on three key principles called “tiers” by EPA:

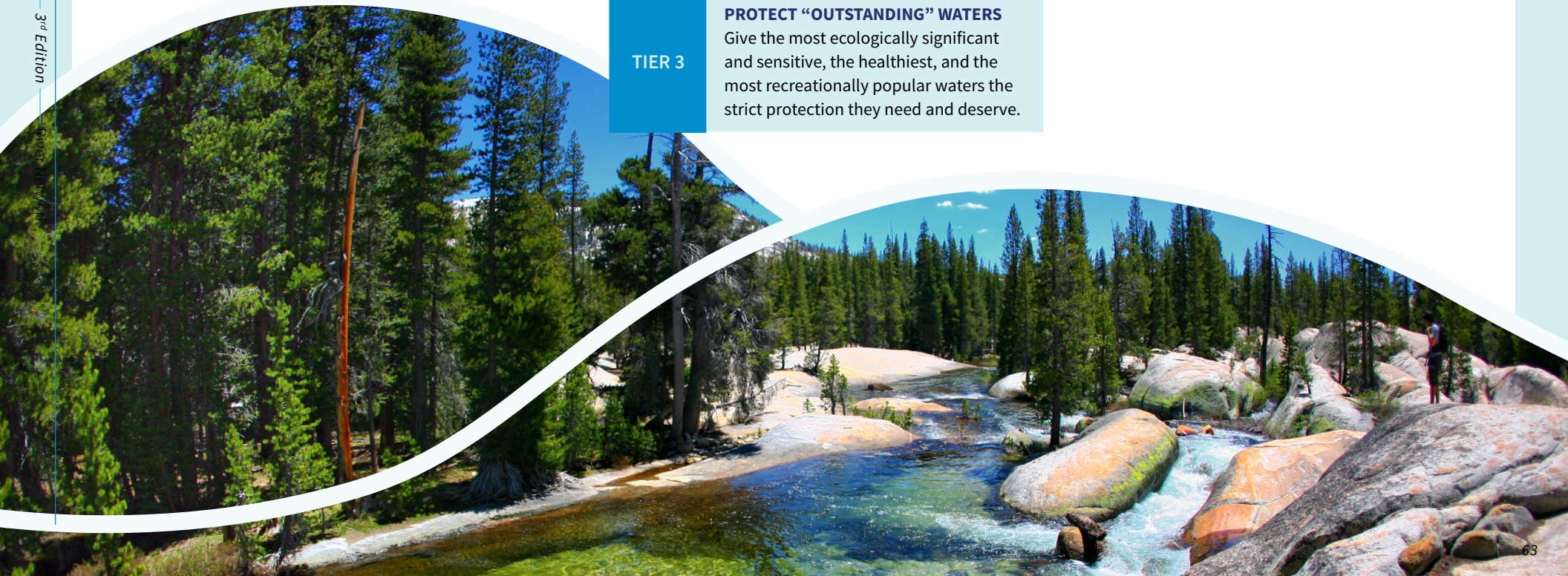
TIER 1	<p><b>PROTECT EXISTING USES</b> Permit no activity that would eliminate, interfere with, or lower water quality necessary to support existing uses.</p>
TIER 2	<p><b>MAINTAIN “HIGH QUALITY” WATERS</b> Avoid—or at least hold to an absolute minimum—any lowering of the water quality that is better than necessary to meet standards.</p>
TIER 3	<p><b>PROTECT “OUTSTANDING” WATERS</b> Give the most ecologically significant and sensitive, the healthiest, and the most recreationally popular waters the strict protection they need and deserve.</p>



## WHAT IS THE ORIGIN OF ANTIDegradation?

Antidegradation requirements actually pre-date the Clean Water Act. Although they were adopted as policy by the Secretary of the Interior in 1968, they were not explicitly added to the Act itself until the 1987 amendments (CWA section 303(d)(4)(B)).

The antidegradation policy supports the second half of the primary objective of the Clean Water Act, “to restore and **MAINTAIN** the chemical, physical, and biological integrity of the Nation’s waters.” EPA included the antidegradation policy as a required component in each state or tribe’s water quality standards in the 1975 CWA regulations.<sup>41</sup>



## What must states and tribes do to meet these antidegradation requirements?

Each state and authorized tribe must develop and adopt an antidegradation policy that is consistent with the federal policy. It can be identical to the federal policy, or it can be more specific and more protective. It must not be any less specific or less protective.

Each state must also develop a system for implementing its antidegradation policy.<sup>42</sup> This system should ensure that the state or tribe's major programs, permits, decisions, and day-to-day activities affecting water quality and aquatic ecosystem health will be consistent with its antidegradation policy.

## Why haven't I heard about the Antidegradation Policy?

Antidegradation remains the most neglected cornerstone of the Clean Water Act. Hundreds of billions of dollars have been distributed by federal and state agencies to help cities update their sewage treatment systems. Industries have spent at least that much upgrading their technologies to meet higher discharge standards. Hundreds of thousands of pollution permits spelling out technology-based and in-stream water quality-based limits for individual dischargers have been developed.

In many watersheds, however, these kinds of water quality gains have been offset partially or completely by *new discharges and activities*, and the condition of many formerly healthy watersheds has deteriorated dramatically. This is because antidegradation policies have not been adequately developed, implemented, and enforced. As a result, even our most treasured waters remain vulnerable to increased levels of pollution. In fact, very high quality water bodies often attract proposals for new pollution discharge, because, without strong antidegradation rules, it is much easier to obtain permission to discharge into clean waters than those identified as having problems.

## How should antidegradation review work?

According to the EPA, antidegradation implementation should be "based on a set of procedures to be followed when evaluating activities that may impact the quality of the waters of the United States."<sup>43</sup> For simplicity, the steps in the diagram focus only on proposed new or increased NPDES permitted discharges, even though the antidegradation policy applies more broadly (see next question).



## THE FEDERAL ANTIDegradation POLICY AND IMPLEMENTATION METHODS

The following is most of the regulatory language, somewhat paraphrased. The regulation does not include reference to tribes, but it applies to the tribes that are authorized to administer their own water quality standards. Review the full language [here](#).

### POLICY

The state shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

**Tier 1:** Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

**Tier 2:** Where the quality of the waters exceeds levels necessary to support aquatic life and recreation uses, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. This must involve intergovernmental coordination and public participation. In allowing such degradation or low water quality, the state shall assure water quality adequate to protect existing uses fully. Further, the state shall assure that there shall be achieved the highest requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

- States and tribes can use a parameter-by-parameter basis or a water body-by-water body basis. The process must involve opportunity for public involvement, and water bodies cannot be excluded from protections solely because water quality

does not exceed levels necessary to support all of the uses specified in section 101(a)(2) of the Act.

- Before allowing any lowering of high water quality, the state shall perform an analysis of alternatives and must find that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. A range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity must be evaluated, and if one or more is identified, lowering of water quality is only allowed if one such alternative is selected for implementation.

**Tier 3:** Where high quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

**Thermal protections:** In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.

### IMPLEMENTATION METHODS

The state shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the state's policy and with the federal policy described above. The state shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.<sup>44</sup>



**ANTIDegradation Implementation\***

It is easiest to review a permit or activity by following the three tiers of antidegradation in this order:

- protect outstanding waters (Tier 3)
- minimize impacts to high water quality (Tier 2)
- protect existing uses (Tier 1)

The state or tribe should first determine whether the waters are outstanding (Tier 3). If so, then no new or increased discharges to outstanding waters or their tributaries should be allowed. Outstanding waters can be defined in specific ways in water quality standards, but as a starting point, the CWA regulations read:

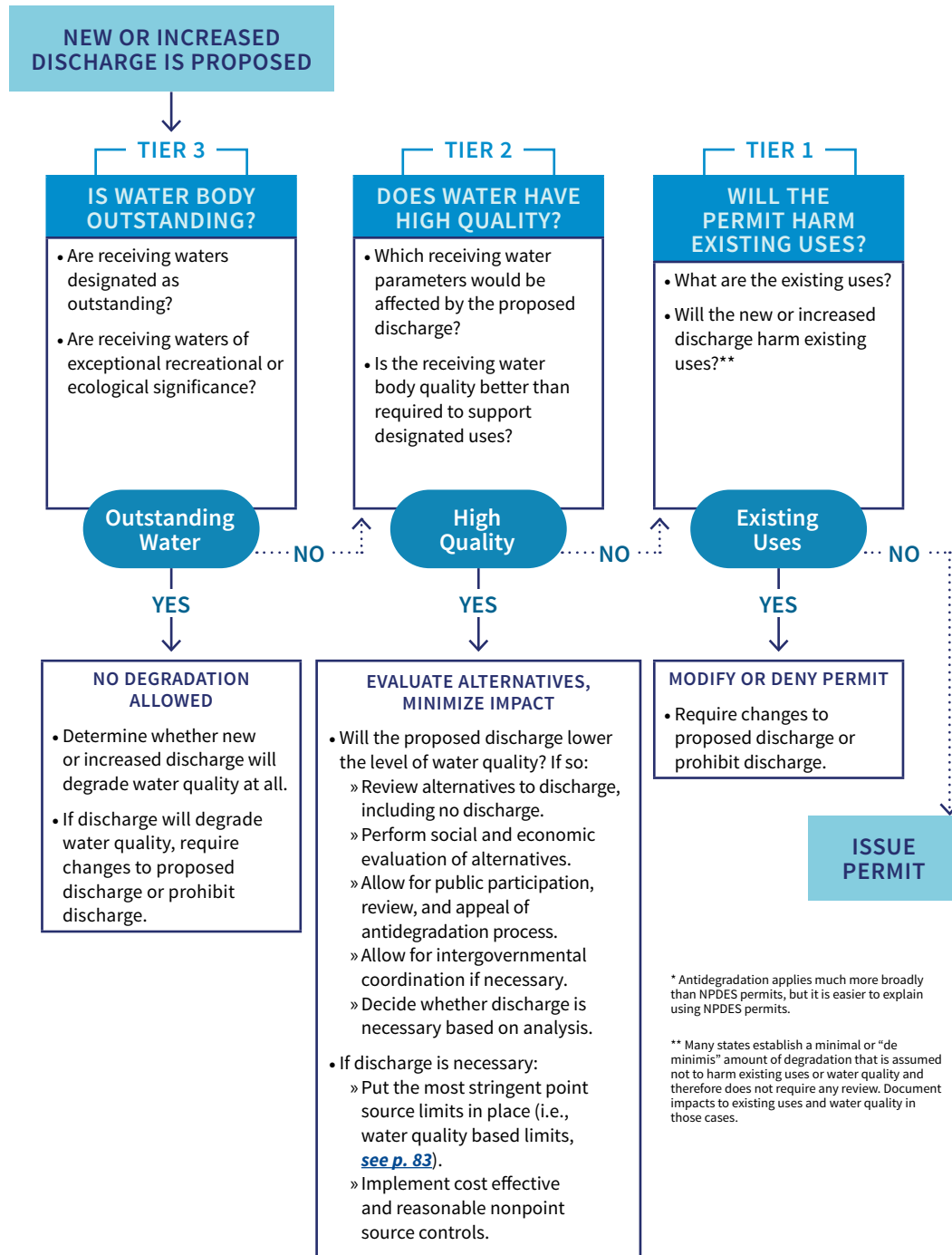
“Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance...”<sup>45</sup>

If the water body is not outstanding, yet it has higher water quality than what is required by water quality standards to protect all designated and existing uses, any proposed activity that might degrade water quality must undergo an evaluation of alternatives to determine whether it is necessary. That evaluation must include the economic and social needs and impacts of the local area (Tier 2). Further, in every case in which any new or increased loading is considered for one of these non-outstanding waters, states and tribes must determine whether the proposed activity will cause harm to any existing uses or to the water quality they require. Considered the absolute floor of water quality, the antidegradation policy’s Tier 1 requires that a proposed activity be disallowed if any existing uses would be harmed.

**When is an antidegradation review triggered?**

The EPA Water Quality Standards Handbook (Section 4.8) states that “[a]ny one or a combination of several activities may trigger the antidegradation policy analysis.” At the very least, an antidegradation review is required as part of each new or expanded NPDES permit (NPDES, p. 75) and each state and tribal water quality certification (Section 401, p. 119). State and tribal water quality certifications are required whenever a federal permit or license is issued.

According to EPA, antidegradation is also triggered by other activities, such as review of water quality standards and new or revised Total Maximum Daily Load (TMDLs, p. 129) allocations.





## WHAT IS “DE MINIMIS” DEGRADATION?

Today most states allow some amount of new pollution, called “de minimis” degradation, before an antidegradation review is triggered. De minimis impacts allowed by some states include:

- temporary degradation
- new discharges that require a percentage of available dilution in the receiving water body, called “assimilative capacity” (e.g., 10–25% erosion of existing quality by discharging the pollutant)
- existing discharges that increase by an established percentage that they consider to be small (e.g., 10% more discharge of a pollutant than current discharge)

Some states define an overall cap for de minimis to address cumulative pollutant loading. Courts have required removal of de minimis exceptions in water quality standards that would allow up to 10% of the assimilation capacity without requiring an antidegradation review.<sup>48</sup>

De minimis degradation has been taken to an extreme in many states—creating a giant loophole that allows virtually any new activity to be allowed with little or no antidegradation review. Neither the Clean Water Act, nor the regulations, nor the guidance in the Water Quality Standards Handbook suggest a de minimis exemption from antidegradation review and protections.

## When a water body has impairments, does antidegradation still apply?

Yes! To begin with, any new, potentially-degrading activity should receive a Tier 1 review to prevent harm or additional harm to existing uses.

In addition, if a new activity would lower the quality of a water by adding a new pollutant or damaging healthy conditions that are currently supporting designated uses, Tier 2 of antidegradation should also apply. In other words, even if one pollutant is impairing a water body, antidegradation Tier 2 must be applied for all the other pollutants that can potentially be discharged in order to protect the current levels of water quality of that water body.

Protecting each water body from each pollutant is known as the pollutant-by-pollutant approach. However, EPA has allowed states and tribes to adopt a “water body approach” to its Antidegradation Policy. When this approach is taken, water bodies cannot be excluded from antidegradation protections “solely because water quality does not exceed levels necessary to support *all* of the uses.”<sup>46</sup> For example, if there is a segment in my watershed that is impaired for swimming due to high levels of bacteria, that impairment should not prevent the permitting authority from performing an antidegradation review on a proposed new discharge that will have high levels of heavy metals that could impair the warm water fishery.

## Who must prove that lowering high water quality is “necessary to accommodate important economic or social development in the area”?

The burden of proof is on the entity proposing the activity. EPA states in its Water Quality Standards Handbook that the Tier 2 provision, which allows degradation, “is intended to provide relief only in a few extraordinary circumstances...” and that “[t]he burden of demonstration on the individual proposing such activity will be very high.”<sup>47</sup>

To live up to the intent of the federal regulations, it is critical that each state or tribe’s implementation procedures require an analysis of alternatives (including the option of not proceeding with the activity). The analysis must include an evaluation of social and economic impacts, coordination with other interested government entities, and public involvement. The public should have a chance to review the analysis and appeal the result.

## Must waters meet all water quality criteria to receive Tier 3 protection?

No. Waters with high quality that are of “exceptional recreational or ecological significance” are to be considered in the development of a state or tribe’s list of outstanding waters. Waters of recreational importance may include waterfalls or whitewater rivers, even if they are not meeting all criteria. Waters of ecological importance or sensitivity include waters throughout the country that support aquatic biodiversity, even if there may be some water quality problems.

## What are some examples for using Outstanding National Resource Water (ONRW) designation?

### Tribally significant waters

Tribal water quality standards have established Outstanding Tribal Waters designations to protect culturally important waters and their functions from any new polluting activities. Examples might include salmon spawning tributaries, ceremonial waters, or waters from which First Foods are harvested.



### Reference Streams

Biological criteria and many narrative criteria depend on comparisons between watersheds of similar geography, climate, and ecoregion—one that is relatively intact and one that has experienced some degradation. Finding waters that can be used as reference streams, against which similar water bodies can be measured, gets harder and harder. Restoring the integrity of our nation's waters depends on our ability to protect the characteristics of reference waters. ONRW designation could be very useful in that effort.

### Unique Recreational Waters

Some states and tribes have chosen to designate scenic waterways and “recreationally significant” waters as ONRWs. Whether it is a segment of a water body that flows over a cliff, goes through a canyon, travels deep underground into a series of caves, provides exceptional whitewater boating, or is a perfect summer swimming hole, these waters are all potential candidates for ONRWs. If they are recognized by the state or federal park systems, part of public forests, or sites of culturally and historically important artifacts, those recognitions can be helpful in a designation process.

## Must waters be designated as Outstanding Waters in order to receive Tier 3 protection?

Most states and some tribes have established a process for designating outstanding waters. However, nothing in the regulations requires that states must *designate* waters as outstanding in order to provide the highest protection of the antidegradation policy. It should be possible to protect outstanding waters from new or increased pollution without that step. In many states, few if any waters have been designated as outstanding because there is either no designation process, or the process is too onerous and/or political. Therefore, there are many undesignated waters across the country that deserve the outstanding waters protection.

## Is any discharge allowed into an Outstanding National Resource Water (ONRW)?

According to EPA, no new or increased discharges are allowed to ONRWs or their tributaries that would result in lower water quality in the ONRW.<sup>49</sup> Existing discharges are usually allowed to continue at the same amounts as when an ONRW is designated. New or expanded discharges or activities are allowed only if it can be demonstrated they will not affect the water quality or characteristics of the ONRW. Many states define a long list of activities that are not considered degradation. Temporary lowering of water quality and emergency situations are generally considered allowable in an ONRW. To prevent abuse of this provision, it is important to determine what constitutes a temporary or emergency discharge when designating or defending an ONRW.

## What have states and tribes done with antidegradation requirements?

Every state, and tribe with approved water quality standards, has adopted an antidegradation policy of some kind. They vary widely in clarity and strength.



### HIGH QUALITY WATER: PARAMETER-BY-PARAMETER APPROACH

Many water quality advocates believe strongly that the “parameter-by-parameter,” or pollutant-by-pollutant, approach is the only approach that meets the intent of the federal statute and regulations. According to EPA, “high quality waters are those whose quality exceeds that necessary to protect the [primary] goals of the Act (protection and propagation of fish, shellfish, and wildlife and recreation in and on the water), regardless of use designation.”<sup>50</sup> Water quality does not need to be better than every established water quality criterion for the water to be deemed a “high-quality water” and protected as such.

EPA has accepted approaches that do not use a strict pollutant-by-pollutant basis, and in 2015 enacted regulations that explicitly allow states to use a water body-by-water body approach with the caveat that a water body cannot be denied Tier 2 protections just because it fails to support an aquatic life or recreation designated uses, which are known as the primary CWA uses because they are called out in the opening goals.<sup>51</sup> In other words, otherwise high quality waters that fail to support fish consumption because of mercury or PCB pollution should still be protected from new discharges of pollution that can harm aquatic life or recreation as long as those new discharges have not been proven to be necessary to accommodate important social or economic development in the area.



### TRIBAL ANTIDEGRADATION POLICIES AND PROCEDURES

- [Spokane Tribe of Indians](#) (2010) – verbatim from the federal regulations at the time
- [Pueblo of Santa Ana](#) (2020) – verbatim from federal regulations plus parameter-by-parameter for high quality and Outstanding Tribal Resource Waters

While there is considerable room for improvement in most state and tribal antidegradation policies, there is even more room for improvement in antidegradation implementation methods, most of which range from weak to nonexistent. Few states consider the policy in everyday discharge or dredge and fill permitting activities. Even fewer apply it to any other types of water quality decisions. None have developed the comprehensive antidegradation implementation systems that are needed. This is an area in which vigilant public review of draft permits is essential.

### What is Tier 2.5?

Many states, concerned about the economic or political impact of designating ONRWs, have developed a so-called Tier 2.5 designation. It may be described as an Outstanding Resource Water or Outstanding State Water (e.g., Outstanding Florida Water) in the regulations. These hybrid designations come in many shapes and sizes, generally with the purpose of avoiding an outright prohibition of new or increased discharges, dredging, fills, or impacts. In a state that is unwilling to designate ONRWs, this option can provide more specific and greater protection than Tier 2. On the other hand, the Tier 2.5 designation can deprive a water body of the Tier 3 protection it needs and deserves. If your state has a Tier 2.5 classification, you should examine the criteria for it very carefully. In some states, Tier 2.5 designation offers less protection than a proper Tier 2.

### How can I learn about my state's antidegradation policy?

The policy itself is a part of your state's water quality standards. It is accessible from each state water quality agency or tribal government website as well as from EPA ([states](#) and [tribes](#)).

For more information, you can contact your water quality agency and ask for the person in charge of water quality standards.

### How can I find out whether my state is properly implementing antidegradation?

Because new or increased discharges are the most obvious potential sources of degradation to our waters, it is easiest to review your state's procedures by reviewing several individual discharge permits (NPDES permits). Keep in mind that antidegradation applies to many more activities than NPDES discharges. Once you identify new or increased discharges, you should look for any evidence of an antidegradation analysis or determination by the water quality agency that there will be no degradation caused by the discharge. The review will usually be found in the Fact Sheet that accompanies the permit. (See [p. 103](#), for more information about reviewing discharge permits.) Even if your state is performing antidegradation reviews, there may be no documentation.



#### NORTHEAST IOWA

Fishing groups in Iowa succeeded in their push for establishment of Outstanding Iowa Waters (Tier 2.5) through public comments to a rulemaking and a citizen suit. Thirty-one stream segments and two lakes were designated. [Link to story.](#)



#### TIER 2.5

To find out more about Tier 2.5, review [Section 4.2](#) of EPA's Water Quality Standards Handbook.



#### COMMON PROBLEMS WITH ANTIDEGRADATION POLICIES AND PROCEDURES

- **Large exemptions from antidegradation review.**  
When a state has created loopholes to circumvent antidegradation analysis (such as allowing “de minimis” amounts of additional pollution and nonpoint source polluting activities without review), its policy and implementation procedures are not consistent with the federal regulations.
- **Use of the water body approach.**  
If your state defines high quality waters only when there are no impairments at all throughout the segment or water body, most water bodies will only receive the minimum antidegradation protection against harm to existing uses. Under this approach, waters that are polluted by even one contaminant, such as sediment, may never receive adequate protection from activities that may contribute other contaminants such as bacteria, heavy metals, or toxic chemicals. All waters deserve Tier 2 protection of existing water quality pollutant-by-pollutant, and EPA has made clear that a water body cannot be denied Tier 2 protection just because it fails to meet a single designated use (e.g., fish consumption).
- **Grandfathering of existing permits.**  
If your state does not currently have an adequate antidegradation policy or implementation procedures in place, then water bodies are not receiving adequate protection of existing water quality. There is debate regarding the need for all current permits to undergo an antidegradation analysis at the time of renewal if they have never been subject to one before. At the very least, requiring antidegradation review for all permit renewals would ensure the “absolute floor” of antidegradation protection—to prevent harm to existing uses.

Antidegradation implementation methods are increasingly being included in the water quality standards regulations, but may also be found in guidance documents outside of the standards. If they are separate, they must be accessible from the state agency website.

### What if my state antidegradation policy is not consistent with the federal policy and implementation methods?

Antidegradation policies and implementation methods are required elements of water quality standards.<sup>52</sup> The EPA is required to disapprove water quality standards that are inconsistent with the federal regulations.<sup>53</sup> If an antidegradation policy is disapproved by EPA, the state must improve the policy to address EPA's concern. If the state does not make the necessary changes, EPA is required to develop a new policy for the state.<sup>54</sup> Regarding the implementation methods, EPA may disapprove them and promulgate new methods if it has been determined that all or part of the state's process could result in circumvention of the intent and purpose of the federal antidegradation policy.<sup>55</sup>

## ACTION CHECKLIST ANTIDEGRADATION POLICY AND PROCEDURES

- Search for your state or tribe's antidegradation policy and procedures online. They will be found within your water quality standards.
- Compare your agency's policy to the federal policy. Note any sections that are less protective than the federal policy ([p. 64](#)) as well as any that seem unclear or incomplete.
- Examine whether your state has implementation methods. If they exist, review them carefully. Do they seem adequate to turn policy into everyday action? If they do not exist, insist that the state or tribal agency develop them and include EPA in your communication. Use the federal regulations (40 C.F.R. § 131.12(a)) to make your point.
- Ask officials with your agency whether and how the policy is applied to permitting decisions (e.g., NPDES, Section 404, Section 401) in your watershed. Ask for recent examples. Is there documentation of any review?
- Examine permits on your own. Look to "Getting Permits Right" ([pp. 103–111](#)) for assistance. Some suggestions include:
  1. Pick a mix of different types of permits such as municipal and industrial discharges and drafts as well as current permits.
  2. Compare current permits to old permits (if applicable).
  3. Look for changes that were allowed (or are proposed) and may have led to degradation. For example:
    - new discharges or outfalls
    - increased discharges (either concentration or loading)
    - seasonal discharges that extend over a greater number of months
    - changes to the instream flow assumptions
    - changes to the design flow discharge
    - weakening or removal of permit limit(s)
    - creation of or increase in a mixing zone
    - waiver of permit limits under certain storm conditions
  4. Look for any analysis that could be considered an antidegradation review. In the case of NPDES permits, the review will most likely be found in the Fact Sheet.
- Document any instances when you believe the policy should have been applied but it wasn't. Put your concerns about the adequacy of the policy or its implementation in writing and discuss them with officials at your water quality agency and the regional office of the EPA.
- When new permits are proposed or old ones renewed, get involved to make sure the antidegradation procedures are fully and faithfully followed. The antidegradation policy applies beyond permits to "activities," but it is easier to evaluate the process through NPDES permits ([p. 75](#)) and water quality certification ([p. 119](#)) of federal permits.
- If improvements in the state's policy and methods are needed, work with other public interest groups to secure them through the triennial review or a petition ([p. 70](#)).

# GETTING STANDARDS RIGHT

There are many ways to engage in the development and review of water quality standards, and many ways to examine whether they are being implemented and enforced. The following pages address triennial review, petitioning for changes, getting EPA’s attention, and legal avenues.

## What is the triennial review?

The Clean Water Act requires each state to hold regular public hearings on the adequacy of its water quality standards. These hearings must be held “from time to time,” but “at least once every three years.”<sup>56</sup>

Where the law is followed, the entire state water quality standards system is up for assessment, debate, and revision during the triennial review. This is the public’s best chance to comment on individual pieces of the system, including:

- the state’s designated uses;
- the criteria associated with designated uses;
- the segments into which water bodies are divided for classification;
- the uses designated and criteria developed for each water body segment;
- the antidegradation policy and implementation methods; and
- any other “general policies” (including narrative criteria, variances, and mixing zone rules).<sup>57</sup>

According to regulations enacted in 2015, if a state does not adopt new or revised criteria for parameters for which EPA has published new or updated criteria recommendations,<sup>58</sup> then the state shall provide an explanation when it submits the results of its triennial review to EPA.

The state or tribe will often provide an opportunity for public comment on the areas they plan to update before they start the process. If you get this opportunity, bring to the agency’s attention the areas of the water quality standards that YOU believe are not adequate. They may add your topic to their list.

Once they have done the work on the priority areas, there will be another public comment opportunity to comment on the changes, additions, and updates. You may echo concerns from your previous comments, especially if they have not focused on your issues or have not addressed them adequately. On the basis of your input, scientific information, and agency review, the state may decide to propose a change to the water quality standards.

Unfortunately, few states perform the triennial review every three years. It is important for community members to insist on the review of water quality standards when it is time.



## What if my state or tribal agency has not had a triennial review hearing in more than three years?

While these hearings are supposed to take place at least once every three years, many states do not hold them regularly. If you do not know when your state or tribal jurisdiction last held a triennial review hearing, you can most likely find it by searching online. If not, call your water quality agency.

If it has been more than three years, email or call the agency to request that a triennial review be scheduled. Copy your regional EPA office on the email. You might also copy some key state newspapers.

## Can states weaken standards?

States can, and sometimes do, weaken standards. Changes that seem innocuous to the casual observer can have a huge impact—for better or for worse.

For instance, the differences (a) between a cold water aquatic life use and a marginal aquatic life use; (b) between year-round or seasonally adjusted criteria; and (c) between total dissolved metals and total recoverable metals can make a considerable difference in the allowable pollutant discharges or in the goals and responsibilities in a water quality restoration plan.

Some members of the regulated community put constant pressure on state agencies to weaken standards. In particular, they put a great deal of effort into removing or downgrading designated uses. However, no existing uses can be removed, and no other uses can be weakened without a scientific analysis ([Use Attainability Analysis, sidebar, p. 54](#)). Consistent support for correct uses and strong criteria from an informed, involved public makes it easier for agencies to resist this pressure.

## Isn't the EPA supposed to step in if a state doesn't do its job properly?

Yes. Start by reaching out to the state agency, however, and if no action results from your outreach to the state, it's time to get the EPA involved. There is no better way to make your state take notice of a flaw in its water quality standards than to get the EPA to raise the issue and ask that it be addressed in the state's triennial review. The EPA can and does disapprove state water quality standards—especially when it hears strong public support for the needed action. Here again, the role of public interest organizations is pivotal to garner and demonstrate that public support.

## What kinds of changes may I request?

You should be able to ask for changes to any part of your state's water quality standards. You might request changes in the use designation(s) of a particular water body, improvements in criteria that apply to one or more uses, strengthening the antidegradation policy, or a clarification of antidegradation implementation methods. Some state water quality standards are confusing and hard for the public to understand. You may also ask for better organization of the standards. It is important to urge that all waters be designated for swimming and aquatic life, wherever attainable, to reflect the Clean Water Act goals.



### REGULAR REVIEW OF STANDARDS—TRIENNIAL REVIEW

“The State shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying, and adopting standards.”<sup>59</sup>



### NORTHERN NEW MEXICO

Communities for Clean Water stops proposals to weaken toxic pollutant protections and successfully advocates for climate change and contaminants of emerging concern provisions in the New Mexico triennial review. [Link to story.](#)



## SOUTHWEST PHILADELPHIA

Bartram's Garden River Programs highlighted inconsistencies and confusion in how Pennsylvania and Delaware River Basin Commission water quality standards apply to the tidal Schuylkill River. The Garden asked them to update their criteria to match EPA recommendations and they asked for designated uses to be upgraded to protect existing recreation uses. [Link to story.](#)

## Can standards be changed outside the triennial review?

Yes. States can initiate changes by consulting with the EPA, notifying the public, and providing ample opportunity for public review and comment. The public review and comment process must include at least one public hearing.<sup>60</sup>

Proposed changes must go to the EPA for review and approval. The EPA has the same amount of time to take action as it does during the triennial review.

The public can also initiate water quality standards changes. For example, many states allow individuals to petition for changes to water quality standards. The rules for initiating changes vary from state to state. Contact your state agency or your regional EPA office to find your state's rules.

## What is a "petition for rulemaking?" When and how can it work?

One common state procedure for public-initiated changes is a "petition for rulemaking." Many states' administrative rules allow interested parties, including public interest groups, to petition state agencies to amend environmental and other types of rules.

**Don't be intimidated by the term "rulemaking petition." You won't have to conduct a door-to-door campaign to secure hundreds or thousands of signatures to create an overwhelming show of public support.** State rulemaking petitions are simply formal requests for a state agency to amend its rules in a particular way. Corporations, associations, and public interest organizations can submit a rulemaking petition, and most states allow them to be submitted by individuals.

State rules about how to petition for rule changes vary, but you may not need any signatures other than your own to put the process in motion. Of course, strong public support for the proposed change is helpful. Even if it is not legally required to start the process, widespread support may be the key to getting your proposal on the fast track to success.

It is desirable to have legal help in pursuing changes to your state's regulations. You should seek an attorney that has a good working knowledge of the state's administrative rules, in addition to an understanding of the basic Clean Water Act principles at issue.

## Does it make sense to petition for something that is technically required?

Many supposedly "required" elements of state programs, such as antidegradation implementation methods, have fallen through the cracks over the years. When people find such deficiencies in their state programs, their instinct is often to file a lawsuit. But a petition for a rule change may be quicker, easier, cheaper, and less politically draining.

Filing a petition can also put you in the driver's seat. By proposing specific, needed changes, you deal with a problem proactively. This can be good short-term strategy and long-term politics. Approaching a legal problem in this way also creates a record that can strengthen a lawsuit if one does indeed become necessary.





## What if my state does not have a petition process for water quality standards changes?

If your state does not have a petition procedure like the one described above, it should have some other method that provides for proactive public involvement. Your state environmental agency, state attorney general's office, or regional EPA office can tell you how to find and follow the rules.

If you are not satisfied with your state's public involvement procedures, you can focus on improvements to them as a key objective for the next triennial review. Alternatively, you might take your concerns directly to the EPA, your state environmental commission, governor, attorney general, legislature, or the media.

## What if I can't bring about necessary changes through the triennial review or a rulemaking petition?

If serious problems with your state's water quality standards remain after you have given one or more of the public involvement avenues a try, it is time to consider how to persuade the EPA to take action.

Schedule a meeting with your regional EPA. Ask to meet with at least two or three officials with responsibilities for your state or tribal jurisdiction. Precede your meeting with a formal letter summarizing your concerns, documenting your claims with facts, and explaining the actions you believe should be taken. The documentation you have been keeping will be especially handy now.

If you have kept EPA officials in the loop from the start, your chances of getting quick results will be improved. Like the rest of us, agency officials prefer hearing about emerging issues in the first hour, not the eleventh.

## At what point should I consider going to court to improve water quality standards?

There are times and places for well-crafted, well-targeted lawsuits. If you've tried everything else and the issue is important, it may be worth going to court. Or, if the environmental consequences of not resolving an issue right away are significant and irreversible, it might be best to go to court immediately and seek a quick decision or injunction.

However, be aware that going to court can be the slowest, costliest way to resolve a water quality standards problem. Getting the results you want is not necessarily any more certain in court than in other venues—particularly if the decision boils down to an agency's judgment call, as opposed to a matter of fact or a clear principle of law.

## Who would I sue over state water quality standards?

The Clean Water Act allows individuals to sue the EPA in federal court to force the agency to fulfill “non-discretionary” duties (such as approving or disapproving standards on the required timeline) and the federal [Administrative Procedure Act](#) allows individuals to sue EPA in federal court regarding arbitrary and capricious decisions or a failure to decide. These strategies can sometimes result in suits that correct deficiencies in water quality standards.

You might file suit if, for example, there is compelling evidence that the state has not designated uses properly or has not adopted criteria that adequately protect all existing uses, and the EPA:

- (a) has not disapproved state standards within the required timeline, or
- (b) has disapproved but not rewritten them.

If the EPA has approved them anyway, you may be able to sue them to force disapproval and/or revisions to standards. Such a lawsuit may ultimately force the state to do its job.





## ACTION CHECKLIST GETTING WATER QUALITY STANDARDS RIGHT

- Find out when the last triennial review in your state was held and when the next hearing is scheduled to occur by searching online, and determine what the procedures are for public participation. Get on the agency's notification list.
- If more than three years have passed since the last comprehensive hearing on your water quality standards package, insist that one be scheduled right away.
- Work with community-based organizations and tribes to identify water quality standards issues in local watersheds. For example, identify:
  - any existing uses not protected by designated uses;
  - any waters that are not designated at least for aquatic life and recreation and have never been the subject of a use attainability analysis or have not been considered for upgrade in the last three years;
  - any waters where site-specific criteria are needed; and
  - any outstanding waters that are ecologically or recreationally significant and need and deserve Tier 3 antidegradation protection.
- Work with advocacy organizations, community-based organizations, and tribes to identify critical jurisdiction-wide issues. Consider the:
  - definition of state or tribal waters;
  - adequacy of the state or tribe's general designated uses and associated water quality criteria;
  - methods used for determining acceptable levels of harmful substances;
  - adequacy of the state antidegradation policy and implementation procedures; and
  - adequacy of water quality standards triennial review public involvement procedures.
- Determine if any of the above issues must be dealt with before the next triennial review. If so, initiate the change process with a rulemaking petition or some other established public involvement method.
- Discuss your water quality standards concerns and ideas with officials from your water quality agency and the regional EPA office.
- Prepare written comments to support your suggestions for changes in advance of the triennial review public comment period.
- Send your comments to your state agency. Copy them to the EPA. Consider copying them to the media and elected officials. Share them at community meetings.
- Notify the media of the date, time, place, and importance of the triennial review public hearing.
- Work with community-based organizations to turn out large numbers of people in support of standards improvements at the triennial review public hearing.

What follows are three sections that explain programs designed by the Clean Water Act to identify, limit, and control pollution through permits as well as state, tribal, and public oversight. The National Pollutant Discharge Elimination System Program addresses discharges from pipes and other discrete conveyances. The Dredge and Fill Permit Program addresses the discharge of dredge and fill material into waters of the U.S., including wetlands, and the Water Quality Certification Program requires all applicants for a federal license or permit to obtain a water quality certification from their state, tribal government, or EPA, depending on who administers the water quality standards where the permit or license will be issued.

## DISCHARGE PERMITS: THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Under the Clean Water Act, all point source discharges of pollution into a [water of the U.S.](#) require a permit. This basic principle is the foundation of water pollution prevention and control in the United States. Generally, anyone who discharges pollutants from a point source without a Clean Water Act permit is breaking the law.<sup>61</sup> There is, of course, a corollary: it is legal to discharge pollutants if you have a valid permit and comply with its terms. Understanding how this permitting system—called the National Pollutant Discharge Elimination System (NPDES) Program—works is critical for anyone wanting to use the Clean Water Act.

Community involvement is important in all phases of the NPDES process. By developing a solid grasp of the system’s basics, including the following terms and concepts, you will be much better able to help prevent and control water pollution in your watershed.

### Who has authority to administer the NPDES program?

The Clean Water Act authorized the EPA to [delegate responsibility for the NPDES program](#) to states, tribes, and territories.<sup>62</sup> In most states, EPA delegated full

NPDES program responsibility to a state pollution control agency. New Hampshire, Massachusetts, and New Mexico are the exceptions. In those states, EPA develops and enforces all NPDES permits.

Many states that have the authority to run the NPDES permit program have developed a broader “waters of the state” definition to which the program applies. The states’ definition can be broader than the “waters of the United States,” but it cannot be more narrow.

EPA retains [oversight](#) and veto authority over the NPDES permits issued by states and is in charge of NPDES permits for federal facilities in Delaware, Colorado, Washington, and Vermont. EPA also administers designated activities in specific states (e.g., oil and gas activities in Oklahoma, some state [pretreatment \(p. 87\)](#) and [biosolids](#) programs [\(p. 88\)](#), and offshore in the Gulf of Mexico.

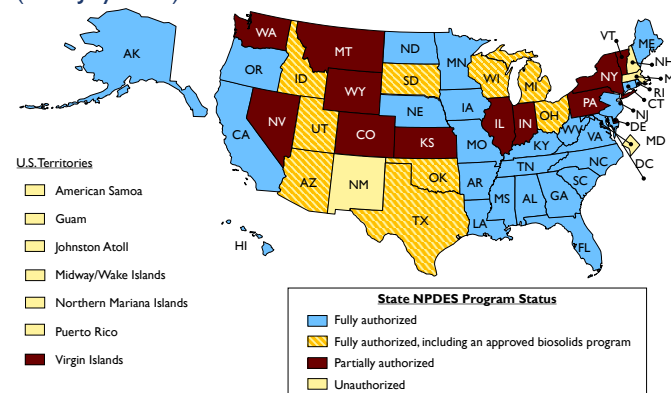
EPA also retains full NPDES permit authority in the District of Columbia, all tribal lands except in Maine, Puerto Rico, American Samoa, Guam, Johnston Atoll, Midway/Wake Islands, and the Northern Mariana Islands.



### THE GOAL: ELIMINATE DISCHARGE OF POLLUTANTS

In order to achieve the ultimate goal of the Clean Water Act, “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” several other goals and policies, including the following, were established: “it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.”<sup>63</sup> That is why the name of the program is the National Pollutant Discharge ELIMINATION System.

### NPDES Program Authorizations (as of July 2019)



NPDES Permit Writers' Course



### NPDES PROGRAM AUTHORITIES BY STATE



## What is a point source?

The NPDES program is focused on controlling point sources of pollution. This permit system rests on the definition of point source: “any discernible, confined, and discrete conveyance” of pollutants to a water body. The definition of discrete conveyance includes, but is not limited to, “any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.”<sup>64</sup>

The definition of point source covers a wide variety of activities, beginning with direct discharges from factories and sewage treatment plants, and extending to a multitude of other sources including the pollutants that rain and snowmelt take to the waters of the U.S. The Act provides major exceptions to the point source definition, however, especially related to agriculture. It specifically excludes “flows from irrigated agriculture or agricultural stormwater runoff.”<sup>65</sup> This language exempts many, but by no means all, agricultural activities from the NPDES program. The regulations explain this exclusion in detail, along with several other exclusions related to vessels, indirect discharges of sewage, and spills of oil and hazardous substances.<sup>66</sup>

## What is a nonpoint source of pollution?

The term nonpoint source pollution has been used in many different ways and in many different contexts over the past fifty years of Clean Water Act implementation. Some people define it as “polluted runoff from rain or snowmelt,” and others as pollution from “diffuse sources.” The most accurate, complete, and enduring definition of the term is the very simplest. A nonpoint source is exactly what the words say: any source of pollution that is not a point source. ([Refer to NPS Section 319 p. 140](#) for discussion of the Clean Water Act’s nonpoint source management program.)

## What activities require an NPDES permit?

Later in this section, we describe the NPDES permits that cover many activities in much more detail. For now, it is helpful to think about the following categories, sources, and types of discharges as needing an NPDES permit. ([see permit category details, p. 86 for more detail](#))

CATEGORY	SOURCES	TYPES
Wastewater	Municipal	Sewage CSO SSO Pretreatment Biosolids
	Industrial	Mining Oil/gas Vessels CAFO
Stormwater	Municipal Industrial Construction Transportation	State highways Forest roads

## How has NPDES worked so far? Is it actually eliminating pollution?

The NPDES program has greatly reduced the impact of many existing discharges, but it certainly did not eliminate point source water pollution in the United States by 1985, as was prescribed in the CWA.<sup>67</sup> In fact, while most pollution discharges have come under greater control since the Act was passed, very few have been eliminated. Moreover, thousands of new discharges—including many with significant impacts—have been permitted.

The NPDES performs admirably where a well-informed public

- keeps an eye on Clean Water Act goals,
  - monitors watershed activities,
  - understands how the NPDES and other CWA tools are supposed to work together, and
  - plays an active role in their ongoing implementation.
- In the absence of an ever-vigilant public, however, the NPDES can produce results opposite of those intended.

## Does the NPDES program address polluted runoff?

Yes, it can. Stormwater runoff and snowmelt can reach our waterways through many non-discrete methods of conveyance, such as the water that flows over city streets, through construction sites, or through industrial complexes. The Clean Water Act allows for regulation of stormwater pollution as a point source when it ends up in a ditch or a pipe. Stormwater pollution is a point source because it is collected by storm drains, gutters, or ditches and sent either through treatment plants (if the storm system is combined with the sanitary system) or out into water bodies directly.

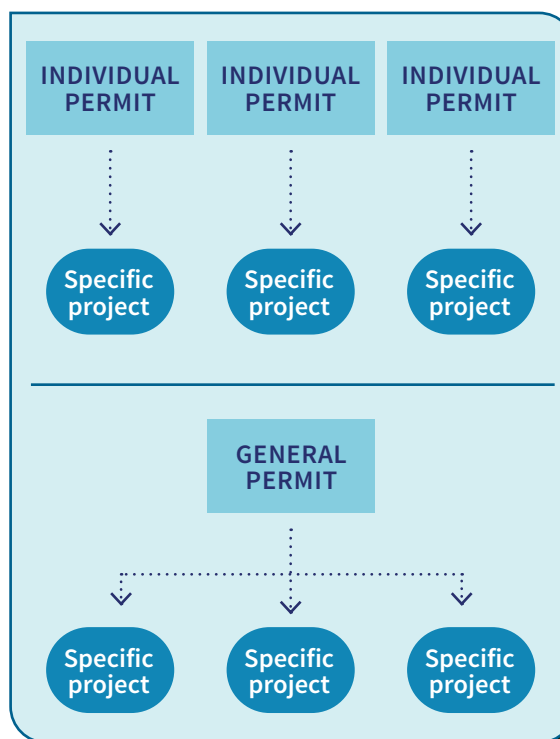
## How long do permits last?

Five years. The Clean Water Act calls for permits to be reviewed, adjusted as necessary and renewed at least every five years. Yet, far too many permits are not renewed within five years. It is common for permits to be “administratively continued” for several years after their expiration date. Delays in reviewing, adjusting, and renewing permits are usually attributed to limited agency funding and staff.

Over the life of a typical permit, the outfalls, the pollutants discharged, and the monitoring can change. The receiving water body can also change significantly. Changes in land use can alter the types and amounts of runoff. Structural modifications to rivers and streams, and the amount and timing of precipitation, can alter the rate at which pollution is transported and the degree to which it is assimilated. Climate change is dramatically altering the conditions in which the NPDES permits were originally written. All watershed factors, any revisions in water quality standards or watershed pollution limits, and changes to the facility or its infrastructure should be taken into account when permits are reviewed, modified, and renewed.

## GENERAL PRINCIPALS FOR NPDES PERMITS

Two types of general permits are explained below. Each type has different requirements and different public review opportunities.



### UNDERSTANDING THE PRECIPITATION AND FLOW ASSUMPTIONS

All permits are written based on an analysis of historical precipitation and flow patterns. These assumptions may be outdated due to increases in intensity and frequency of storms. It is very important that you identify the assumptions that your permitting authority is using to develop permit limits. [\*Example: 2021 Maryland bill required this.\*](#)

The National Oceanographic and Atmospheric Administration has developed a map-driven [\*Precipitation Frequency Data Server\*](#) that allows you to examine current precipitation estimates.

## Individual NPDES permits

Individual permits are site-specific and have more detailed permit conditions and other requirements than general permits. The pollutant limits, known as effluent limits, are based on:

the capabilities of existing treatment technologies (i.e., technology-based effluent limits (TBELs) [\(see p. 82\)](#)

the water quality of the receiving water body (i.e., water quality-based effluent limits (WQBELs) [\(see p. 83\)](#))

or both

All municipal sewage treatment plants and “major industrial dischargers<sup>68</sup>” must apply for individual permits. States may differ in how they define major industrial dischargers, but their definitions must be acceptable to the EPA.



### HOW ARE PERMIT LIMITS EXPRESSED?

Permits may contain several different types of limitations on a given pollutant. For instance, permits often limit both the average concentration in the wastewater (usually mg/L) over given time periods and the total amount of a pollutant (usually lbs/day). These limits may be expressed in terms of a daily maximum and/or a monthly average. Permits may also spell out an acceptable range for particular parameters such as pH. To comply, a permittee must keep the discharge within all these limits; exceeding just one limit constitutes a permit violation.

### TYPICAL INDIVIDUAL NPDES PERMIT COMPONENTS

<b>Cover sheet</b>	This will usually give the best snapshot of the permit. It lists the discharger’s name and address, description and location of discharge(s), condition of receiving water body, designated uses, effective date of the permit, and its expiration date.
<b>Pollutant limits</b>	These are the “nuts and bolts” of the permit. All pollutants that are controlled or monitored from this discharge must be listed with the associated limits, such as total suspended solids $\geq 45\text{mg/L}$ .
<b>Monitoring requirements</b>	The pollutant limits page will also list the type and frequency of monitoring required for each pollutant or parameter. For example, pH monitoring may be required only monthly, whereas temperature monitoring may be required daily. Occasionally, the pollutant limits page will read only “monitor and report.” This may occur when there is uncertainty about the amount discharged and some screening is needed.
<b>Fact sheet or rationale sheet</b>	This document is more user-friendly than the permit itself. It is a separate attachment with useful detail about the permitted activity and the development of permit limits. It may include more information about the wastewater treatment process or more about the receiving water body. If the permitting agency properly implements the antidegradation policy, documentation of antidegradation analysis should be found in the fact sheet.
<b>Other important information</b>	The permit may also include a) additional annual or semiannual pollutant screening to identify when new pollutant limits are needed, b) compliance schedules, c) details of the municipal wastewater “pretreatment program,” or d) instream monitoring.

PARAMETER Outfall: A01	LOAD LIMITS lbs/day DAF (DMF)		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM		
Flow (MGD)					Daily	Continuous
BOD <sub>5</sub>	6.71	16.98	20	40	1/Month	Composite
Total Suspended Solids	10.79	32.68	25	50	1/Month	Composite

NPDES Permit No. IL004622  
Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM		
Flow (MGD)					Daily	Continuous
BOD <sub>5</sub>	6.71	16.98	20	40	1/Month	Composite
Total Suspended Solids	10.79	32.68	25	50	1/Month	Composite

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Flow (MGD)					Daily	Continuous
BOD <sub>5</sub>	6.71	16.98	20	40	1/Month	Composite
Total Suspended Solids	10.79	32.68	25	50	1/Month	Composite

An example of the effluent limitations page of an individual Illinois NPDES permit

The permit will usually also have several pages of “boilerplate” language at the end, such as how often a sewage treatment plan can “bypass” controls. Some states require identification tags on every pipe discharging into waters of the state. When reviewing permits, don’t skip this language. This section of the permit will often include crucial requirements.

Most importantly, public notice of every draft individual permit must be distributed to the interested and affected public. [\(See p. 103 for more detail.\)](#) **This is your opportunity to review and comment on permits. This is your opportunity to inform communities in the vicinity or downstream from the proposed discharge. Help individuals and organizations in those communities get onto the email lists for permits near them. State permitting agencies may provide notice of permit applications long before the permit is drafted. Once you have developed relationships with agency staff, you may get information on permits sooner and be able to share it widely.**



### IDENTIFYING INJUSTICE

#### Public Notice and Comment

Are communities near proposed pollution discharges informed of opportunities to review and comment permits? Frontline communities are the ones who may know best what uses may be harmed by a particular polluting discharge. They may have seen problems from a facility over time, however, they may not be able to come to a public hearing in the middle of the work day.

State agencies need to improve their notice, public outreach, and public hearing options to accommodate working parents with children. Public hearings need to be offered after the work day is over. Child care should be offered. Until such practices are commonplace, you can help to get information about draft permits, comment periods, and public hearings to communities potentially in harm’s way.



GENERAL PERMITS

The general permit may be written to regulate one or more categories or subcategories of discharges when they are either:

- (i) Stormwater point sources; or
- (ii) Point sources other than stormwater point sources, or “treatment works treating domestic sewage”, if they all:
  - “(A) Involve the same or substantially similar types of operations;
  - (B) Discharge the same types of wastes or engage in the same types of sludge use or disposal practices;
  - (C) Require the same effluent limitations, operating conditions, or standards for sewage sludge use or disposal;
  - (D) Require the same or similar monitoring; and
  - (E) In the opinion of the [permitting authority], are more appropriately controlled under a general permit than under individual permits.”<sup>70</sup>

LESS COMMON COMPONENTS:

- Monitoring:** General permits usually require less frequent monitoring and reporting than individual permits, if any. Any ambient water or compliance monitoring would be included in the management plan.
- Notice of Termination (NOT):** When an activity is time-limited, such as a construction or fossil fuel extraction, the general permit will require a notification of when the activity is complete and the operator no longer needs a discharge permit.

General NPDES permits

Most people believe that every proposed discharge or regulated activity is specifically examined and that permit requirements are developed with that particular activity and location in mind. In reality, most of the activities permitted under NPDES are covered by general permits.

“General permits” are developed for numerous categories of activity within a political or geographic boundary that share similar operations and discharges, require similar limits or operating conditions, and require similar monitoring requirements.<sup>69</sup> If the owners of a business believe their enterprise qualifies under an

existing general permit category, they can apply to be covered by that permit. They generally do so through an application called a “Notice of Intent” for coverage under the permit. There is not usually any limit on the number of applicants covered by a general permit as long as they all meet the requirements. The permitting agency has the authority to decline the application and to require an application for an individual permit. General permits are prevalent for stormwater pollution, concentrated animal feeding operations, and many industrial wastewater categories. More detail on categories of permits starts on [p. 86](#). Although the structure of general permits varies considerably, they usually have the following components, some of which are similar to the individual permit:

TYPICAL GENERAL NPDES PERMIT COMPONENTS	
<b>Cover sheet</b>	If there is one, this is similar to the individual permit, a snapshot of some elements of the permit, including when the permit is in effect and when it expires.
<b>Permit</b>	It is developed and renewed every five years. It includes the following requirements for all the activities within a specific category: <ul style="list-style-type: none"> <li>• Description of the activities and operators for which the permit applies</li> <li>• Restrictions on the application of the general permit (e.g., if the activity is likely to affect fish when they are migrating or spawning, the permit could restrict the timing and duration of the activity)</li> <li>• Information needed from every applicant, often in the form of a pollutant management plan—details of the permit for each applicant are contained in these plans, which are available on-site or at the permit agency</li> <li>• Compliance requirements</li> </ul>
<b>Notice of Intent (NOI)</b>	This is the application for coverage under the permit that may be as short as one page, or it may walk through every permit requirement. It must be filled out by every applicant and submitted to the agency. In some cases, permit coverage is assured once it is received by the agency. In other cases, there is a review process, perhaps an inspection, and an affirmative approval of the application may be required. These NOIs may include information about the project, the receiving stream (impairments, outstanding waters), any treatment or best management practices, personnel training, presence of endangered species, or proximity to historic preservation sites.
<b>Fact sheet</b>	Similar to the fact sheets associated with individual permits, this document is incredibly useful, generally easy-to-read, and it explains the permit in more detail. In particular, it explains how limits in the permit were derived.





**REQUIRING GENERAL PERMIT TO BECOME AN INDIVIDUAL PERMIT**

Any interested person may petition the [permitting authority] to require a discharger authorized by a general permit to apply for and obtain an individual NPDES permit.

“Cases where an individual NPDES permit may be required include the following:<sup>72</sup>

- (A) The discharger ... is not in compliance with the conditions of the general NPDES permit;
- (B) A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants ...;
- (C) Effluent limitation guidelines are promulgated for point sources covered by the general NPDES permit;
- (D) A Water Quality Management plan containing requirements applicable to such point sources is approved;
- (E) Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit, ...;
- (F) Standards for sewage sludge use or disposal have been promulgated ...; or
- (G) The discharge(s) is a significant contributor of pollutants.”



**NORTHEAST IOWA**

Siting a feedlot in Iowa in the drainage of an Outstanding Iowa Water (antidegradation Tier 2.5) required an individual construction stormwater NPDES permit, rather than a general permit. [Link to story.](#)

**Does Antidegradation Apply to General Permits?**

The regulations require the application of antidegradation to general permits when they are first developed and when the permit is reissued every five years. While state agencies can review notices of intent under their antidegradation policy, they generally don't because of the administrative burden that would create.

Very few general permits include procedures to protect outstanding or high-quality waters. **If you believe an activity covered by a general permit is degrading outstanding waters or high-quality waters, ask your state agency to require an individual permit for that activity and perform an antidegradation review. (p. 63)**



**How much treatment do permits require?**

The level of treatment required of each discharger for a given pollutant is determined by the category of discharge, the condition of the receiving water body, and the treatment technologies available. Minimum pollution limits established for a category of discharges—such as municipal wastewater or industrial wastewater—regardless of their location are called *technology-based*. Limits driven by the water quality standards and current conditions of the receiving water body are called *water quality-based*. In the Clean Water Act's two-part system, each permit must contain limits for each pollutant based on the more stringent of the two types of controls in that particular situation. It is not unusual for a single permit to contain some limits of each type.

General permits are subject to **public notice**, review, and comment during the initial permit development and the required five-year permit renewal process. There is limited, if any, public and interagency review of each NOI under the general permit throughout the five-year general permit period. Bringing up specific concerns during the public review every five years is therefore very important. Information on each permittee covered by a general permit is public and should be available from your permitting agency.

**Can entities be rejected for the general permit or be required to get an individual permit?**

Yes. If the general permit is not likely to protect the receiving water body, citizens can petition to require the issuance of an individual permit. An individual permit can be required by the permitting agency for several reasons including when: the discharger is out of compliance, better technology is available, circumstances related to the activity or in the receiving water body have changed, or the discharger is a significant contributor of pollutants<sup>71</sup> (see sidebar for more details). The applicant can also request coverage under an individual permit even if they qualify for a general permit, should they desire conditions tailored to their specific facility.



**EFFLUENT LIMIT GUIDELINES AND PLANNING**

The Clean Water Act charged the EPA with developing and regularly updating technology-based effluent limit guidelines (ELGs) for municipal and industrial wastewater dischargers. The process of developing ELGs for every industrial category is labor-intensive and time-consuming, and as of 2022, only 59 had been issued. EPA publishes an [Effluent Guidelines Program Plan](#) every two years that details the existing and new industries identified for attention. This draft plan is published for public comment, and comments must be addressed by EPA in the final document. This is an important point of entry for public input regarding priority discharges that need effluent limitations. The ongoing development of effluent guidelines for [Steam Electric Power Plants](#) is an example of significant public involvement in strengthening the pollution controls on an industry that is ubiquitous in watersheds across the country.

States that run their own NPDES permitting programs can issue permit limits that are more stringent than the ELG standard. For instance, though EPA's ELGs for coal plants does not require limits on bromide discharges, in its 2015 and 2020 ELGs, EPA encouraged state permit writers to address bromide on a case-by-case basis in individual NPDES permits.

**Technology-based permit limits**

Clean Water Act regulations establish minimum pollution limits for numerous categories of industrial discharges, for sewage discharges, and for a growing number of other types of discharges. Regardless of any site-specific considerations, all dischargers must meet at least the minimum pollution limits that apply to all others in the same category. These limits are said to be “technology-based.” In each category, they represent levels of technology and pollution-control performance that EPA expects all dischargers in that category to achieve.

- **Do permits prescribe specific technologies or practices?** Not generally. A “technology-based effluent limit” (TBEL) is simply a minimum level of performance that the EPA or a state permitting agency has decided must be achieved by dischargers in a given category, regardless of the nature or size of the “receiving water.” Decisions about how to best achieve that level of performance are typically left to permittees. Permits may prescribe specific point source control practices or technologies, or best management practices for nonpoint sources, but seldom do.
- **Is the “Best Available Technology” required?** Many people mistakenly assume that technology-based limits represent the current state-of-the-art in pollution control technology. The Clean Water Act calls for technology-based limits to be based on the performance of the “best available technology economically achievable.”<sup>73</sup> This has been described as representing the average performance of the best performers, and it also takes into consideration the cost of implementing a technology. However, fifty years after the passage of the Act, individual dischargers often are able to achieve a higher level of performance than that specified by national technology-based limits. While EPA is continuing to develop technology-based standards for categories of discharges that don't yet have technology-based limits, the agency has generally not been updating technology-based limits as technology advances. In the details on permit categories that follow ([p. 89](#)), explanation of the various levels of control

technology required for different pollutants and types of discharges can be found.

- **What kind of treatment is required of municipal or county wastewater treatment facilities?** In many states, the publicly owned treatment works (POTWs)—also called wastewater treatment plants (WWTPs)—are the largest category of dischargers either by number or by volume or both. The “technology-based limits” for municipal sewage treatment plants have long been “secondary treatment,” which involves screening solids and breaking down about 85% of the oxygen-consuming wastes contained in the typical urban sewage waste stream (see figure below).

This is far more treatment than many cities provided in 1972, but in many cases, it is not enough to meet today's receiving water standards. For example, the need to meet receiving water quality standards has led to more stringent permits for many cities. Some permits require more than 98% removal of oxygen-consuming wastes and set limits for additional pollutants that are not specifically included in the secondary treatment (e.g., E.coli or nitrogen). Secondary treatment is a minimum requirement for all sewage dischargers, regardless of the size, characteristics, or conditions of the receiving water. However, it is nowhere near “state-of-the-art.”

The technology-based standards for wastewater treatment plants (minimum requirements) are called “secondary treatment.” It involves controls listed here.

EXAMPLE OF NPDES PERMIT LIMITS		
Typical Municipal Wastewater Treatment Plant		
Effluent Limitation, units	Monthly Average	Weekly Average
Biochemical Oxygen Demand (BOD <sub>5</sub> )	30	45
Total Suspended Solids, mg/L	30	45
pH	between 6.0 and 9.0	
30 day average percent removal ≥ 85%		
mg/L = milligrams per liter		



## WITHOUT FEDERAL LIMITS— BEST PROFESSIONAL JUDGMENT

The EPA has set the minimum technology-based permit limits for many categories of dischargers. However, if there are no national technology-based limits for a particular category of discharger, and if site-specific circumstances don't warrant water quality-based limits, limits are set on a case-by-case basis using the "best professional judgment" of the permit writer. In practice, permit writers will most likely perform a Reasonable Potential Analysis (RPA) (sidebar below) to determine what kind of permit limit is warranted for the discharge based on its potential to pollute.



## "REASONABLE POTENTIAL ANALYSIS"

Permit writers must perform a "reasonable potential analysis" to determine which pollutants in the discharge have a reasonable potential to violate water quality standards. Limits must be included in the permit for pollutants that have a reasonable potential to violate standards. The RPA is documented in the permit fact sheet.

"Limitations must control all pollutants...which the [permit authority] determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."<sup>75</sup>



## PACIFIC NORTHWEST

Five pollution discharge permits were updated in 2022 after being administratively extended for seven years. These permits must protect the downstream uses in the Spokane Indian reservation by meeting the PCB standard of 1.5 pg/L, and they are not allowed to permit discharges that might cause or contribute to the PCB impairment in the Spokane River. [Link to story.](#)

## "Water quality-based" permit limits

In many cases, technology-based limits are not enough to protect a receiving water. If the discharge is large or highly concentrated, or if the receiving water is small or ecologically sensitive, the discharge can easily overwhelm the water body unless the discharger does more than simply meet the minimum technology-based limits. The authors of the Clean Water Act understood that technology-based limits often would not be enough. Rather than discard the pre-1972 "receiving water quality-based" approach, they improved it by requiring it be used as a backstop to the technology-based approach. This crucial backstop system requires each discharger to use as much additional treatment as necessary to meet water quality standards for the receiving water itself. At first glance, the water quality-based approach looks much like what was in place before 1972.

When properly implemented, this two-tiered system of technology-based pollution limits paired with water quality-based pollution limits clearly specifies how much pollution can be allowed, relies on protective assumptions, and employs extensive safeguards.

**When are these water quality-based effluent limits required?** Water quality-based effluent limits (WQBELs) are often required when an applicant requests a permit for a relatively large-volume discharge to a relatively small stream. They may be necessary when the receiving water is naturally limited in its capacity to absorb pollution<sup>74</sup>, or when a water body already carrying a heavy pollution burden cannot absorb any more without violating water quality standards. As pollution pressures in a watershed increase, permit limits are more frequently driven by water quality standards. Unlike the minimum technology-based effluent limits that have an economic feasibility component, water quality-based limits are set to assure that water quality standards (uses, criteria, and antidegradation) are not violated, regardless of the economic consequences.

## Are effluent limits for the same type of discharge the same across the country?

Many technology-based permits for municipal wastewater treatment plants or a particular industry are consistent across the country. However, some states have set their own minimum technology-based effluent limits that go beyond the federal guidelines by including additional limits on pollutants such as bacteria and ammonia.

Since state water quality standards can vary significantly, permits that require water-quality based effluent limits, even for the same type of discharge, will likely vary among states as much as the different state water quality standards do.

## What are watershed-based permits?

For a long time, EPA has encouraged permitting authorities and permittees to consider watershed-based approaches to address water quality problems. The Clean Water Act does as well. For example, the Total Maximum Daily Load program ([p. 129](#)) takes into consideration multiple sources of pollution and the capacity for the water body to handle cumulative pollutant loads.

There are many ways that the NPDES program can be watershed-based including the following:

- 1 Multi-source watershed-based permits** – This is a type of place-based general permit that includes multiple similar sources (e.g., multiple construction sites).
- 2 Integrated municipal permits** – This type of permit bundles multiple sources within a municipality or several municipalities in one watershed into one permit. (e.g., sewage, stormwater, utility yards).
- 3 Coordinated individual permits** – This approach involves developing water quality based effluent limits and other conditions based on the watershed conditions, and it can include coordination of review and renewal schedules.(e.g., associated with a TMDL).

Examples can be found on the [EPA website](#).

## Do all point source discharges meet water quality standards at the end-of-pipe?

No. Very few limits developed for municipal or industrial waste discharges result in water quality that meets the water quality standards for the receiving water at the end of the pipe. Permit limits are often developed based on an assumption that a certain amount of water in the receiving water body will dilute the discharge. If very little or no water is available for dilution, in order to protect all existing and designated uses that could be affected by the discharge, water quality-based effluent limits in the permit should be stringent enough so that the discharge meets the water quality criteria for each pollutant at the end-of-pipe.

The area of dilution allowed at the end of the pipe is called a “mixing zone,” a portion of a water body where water quality standards are waived. This practice is institutionalized in regulations with the sometimes-incorrect assumption that the designated uses will still be protected in the water body as a whole.<sup>76</sup> Mixing zones are a basic part of many NPDES permits, particularly where dischargers expect to have difficulty providing enough treatment to meet water quality standards for the receiving water at the discharge point.

### Why should we pay attention to mixing zones?

In a mixing zone, concentrations of one or more pollutants may be allowed to remain above acute and chronic toxicity standards ([Water Quality Criteria, p. 57](#)) while dilution occurs. In a matter of weeks or even days or hours, significant harmful effects to resident aquatic life can occur within or near the mixing zone boundaries. These impacts can include effects on the growth, feeding, reproduction, and even survival of organisms in the area. They can also include changes in the food chain and balance of life well beyond the boundary of the mixing zone. Mixing zones may allow discharges harmful to all uses in the water body.

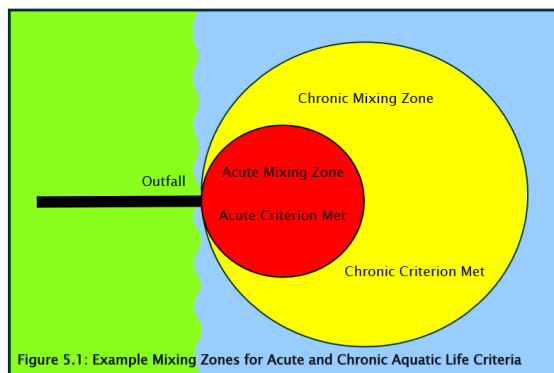


Figure 5.1: Example Mixing Zones for Acute and Chronic Aquatic Life Criteria

### What is a “zone of initial dilution?”

A “zone of initial dilution,” is “the region of initial mixing surrounding or adjacent to the end of the discharge pipe or diffuser ports.”<sup>77</sup> In these areas, even more water quality rules are waived. For example, in this area, concentrations of one or more pollutants may be allowed to remain above acute toxicity standards, and harmful impacts, including death of aquatic organisms, can occur within them in a matter of minutes or hours.

### How are mixing zones developed?

Mixing zones are included in federal and many state water quality standards and are implemented in many NPDES permits. They may be explicitly described in the permit conditions or may be assumed by all dischargers based on state regulations or historical practices. Too often, there are no restrictions on mixing zones. It is not uncommon to find several overlapping mixing zones that span across a water body and extend downstream for miles. Mixing zones are seldom explicitly described or limited for

- a) each pollutant,
- b) each set of uses, or
- c) specific receiving water body conditions.



### DISCHARGE PERMIT FEES

More and more states assess discharge permit fees to augment the federal funds received to administer the NPDES program. To find out more about this topic, review the Association of Clean Water Administrators’ [Report on State NPDES Fee Permitting Program Structures](#).



### IDENTIFYING INJUSTICE

#### **Problems with PFAS in Discharge**

Many known or suspected sources of PFAS pollute waters near communities that struggle with a cumulative burden of pollution. Addressing PFAS in wastewater and stormwater is a challenge because there are very few water quality standards established across the country and there are not yet technology based effluent limits. Where EPA is the pretreatment authority<sup>78</sup>, [requirements](#) include enhanced monitoring provisions, use of new analytical methods, and implementation of pollution prevention and best management practices to address PFAS discharges at the source. EPA has also proposed to designate some [PFAS as hazardous substances](#), which would improve transparency and accountability for exposed communities.



### **WHOLE EFFLUENT TOXICITY (WET) TESTING**

Whole Effluent Toxicity (WET) refers to the cumulative effects on organisms of all the pollutants coming out of one particular wastewater treatment plant. The methods used involve exposing living organisms to a sample of the wastewater.

## HOW TO LIMIT MIXING ZONES?

BASED ON...	COULD PROHIBIT...
Pollutant of concern	Persistent, bioaccumulative, toxic contaminants; any contaminants for which waters are impaired
Sensitive areas	Threatened and endangered species habitat; swimming areas; waters upstream of water supply intake; Outstanding National Resource Waters
Times of year	Spawning, rearing, and migration times for fish; recreation-based; excessive discharge times in vacation communities; low water (contaminant concentrations higher); high water (contaminant loading greater)
Portions of water body	Beyond 25% width of water body and beyond 50 yards downstream



**It is important to insist on a clear definition of any mixing zone and to ask hard questions about its legality and effects.** Mixing zones can threaten public health and aquatic life where acute water quality standards are waived.

### Who monitors discharges?

Permittees. Most of the monitoring of permitted discharges is done by the permittees themselves, and compiled and submitted by the permittee. State and federal officials make scheduled site inspections (annually or less frequently) and can perform spot checks in response to public concerns raised.

Individual permittees submit monitoring reports to the permitting agency. The Discharge Monitoring Reports (DMRs) are typically due monthly, and are public documents. A failure to report properly and on time

is a permit violation, as it is when permit limits, as reported on the DMR are not met. Corrective action may be required.

The permitting agency compiles DMR information and must make it available to EPA and the public. When violations are evident, enforcement actions are in order.

General permits usually do not have similar monthly reporting requirements, but may have other requirements such as annual reporting. **You can examine whether permittees have developed the required management plans, put the required controls in place, are monitoring compliance, and are reporting any problems that need addressing.**



## COMPILATION OF EPA MIXING ZONE DOCUMENTS



### REVIEWING MIXING ZONES

- 1 Get a copy of your state's mixing zone rules.
- 2 Review proposed NPDES permits in your watershed, including the fact sheets, which will describe how the mixing zone was calculated for a specific pollutant. If any permits explicitly allow mixing zones, comment on them in writing and at public hearings.
- 3 If mixing zones have already been permitted, find out when the NPDES permits allowing them are due for renewal and prepare to submit comments. Identify actual and potential impacts of the mixing zones on uses in the watershed.
- 4 Discuss with state and EPA officials any concerns you have about mixing zones (such as cumulative impacts of several mixing zones in your watershed, impact on sensitive uses (i.e., threatened and endangered species), bioaccumulative pollutants, or mixing zones that are not spelled out in permits.
- 5 Reach out to community-based organizations and frontline communities to document any impacts of known or assumed mixing zones in nearby discharge permits. Work together to call for greater transparency and tightening of your state's mixing zone rules and implementation procedures.



### SOUTHWEST PHILADELPHIA

Bartram's Garden Public Boating Program trains youth leaders to identify CSO and stormwater discharges into their stretch of the river. This awareness has led to interest in monitoring and reporting findings to city and state officials. [Link to story.](#)

# NPDES PERMIT CATEGORY DETAILS

CATEGORY	SOURCES	TYPES
Wastewater	Municipal	Sewage CSO SSO Pretreatment Biosolids
	Industrial	Mining Oil/gas Vessels CAFO
Stormwater	Municipal Industrial Construction Transportation	State highways Forest roads

There are many ways the NPDES permitting process is applied to activities that create discharges into our waterways. The majority of NPDES permits are for wastewater treatment plants (WWTPs)—also called publicly-owned treatment plants (POTW) or water pollution control plants (WPCPs)—that treat the sanitary sewage from houses and businesses. Some manufacturing and industrial sites also send wastewater to a WWTP, while others need permits to discharge wastewater used in production activities. Stormwater from different kinds of land uses—municipal, industrial, agricultural, mining—can contain significant levels of pollution and usually requires an NPDES permit for their discharge as well.

In many cases, these discharges will require individual permits. But both national and state general permits cover a wide range of activities. When EPA develops a general permit for an activity, many states mirror the EPA's provisions in their state general permit; the state general permit can be more stringent, but not less than EPA's general permit. This section will review some of the most common discharges and how the NPDES program addresses them.



## WASTEWATER— MUNICIPAL WASTEWATER

The majority of NPDES permits address wastewater collected from homes, businesses, and some industrial sites that is treated at a wastewater treatment plant. These facilities include both publicly owned treatment works (POTWs) and private wastewater treatment facilities that might be found on an industrial site or at a privately-owned residential facility such as an assisted living community. Some of these facilities serve a large area, extending well beyond a city's limits to include wastewater from surrounding communities.

There are three different levels of treatment for municipal wastewater: primary, secondary, and tertiary. Primary treatment removes solids from the wastewater through filtration or settling pools, for example. Secondary treatment focuses on breaking down bacteria that may be in the wastewater through aeration and activated sludge treatment. Tertiary treatment can include additional filtration and disinfection, and can be important for wastewater that might include significant toxic and heavy metal pollutants.

EPA has developed technology-based limits specific to WWTPs. Primary and secondary treatment is required; tertiary treatment can be required to provide additional protection (e.g., for wildlife, high quality waters, and waters that are going to be reused for irrigation or recreational use).

NPDES permits are also required for private wastewater treatment facilities that might be found on an industrial site or at a privately-owned residential facility, such as an assisted living community.

### How are Combined Sewer Overflows (CSOs) and Separate Sewer Overflows (SSOs) addressed in NPDES permits?

The pipes that collect wastewater from our communities are called the wastewater collection system. There are two kinds of collection systems: **combined and separate sanitary sewers**.

**Combined sewers** are designed to collect both sanitary sewage and stormwater runoff in a single pipe connected to the WWTP. During larger storms, excessive flows into the system can become so large they overflow directly into waterways without treatment. In fact, they are designed to do just that, resulting in waterways contaminated with higher pathogen levels. For this reason, communities with combined sewers have to develop a plan as part of their NPDES permit to reduce pathogen levels by reducing the number of combined sewer overflow events. Generally, communities accomplish this by either separating the stormwater from the wastewater in parts of the system or reducing the amount of stormwater that flows into the system. These plans are called Long Term Control Plans and include nine minimum control measures that apply to all combined sewer systems as well as any specific pollution reduction requirements. They include:

- 1 Proper operation and regular maintenance programs for the sewer system and the CSOs,
- 2 Maximum use of the collection system for storage,
- 3 Review and modification of pretreatment requirements to assure CSO impacts are minimized,
- 4 Maximization of flow to the publicly owned treatment works for treatment,
- 5 Prohibition of CSOs during dry weather,
- 6 Control of solid and floatable materials in CSOs,

- 7 Pollution prevention,
- 8 Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts, and
- 9 Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.<sup>79</sup>

**Separate sanitary sewers** carry only wastewater. And these separate systems are often located near waterways because most systems function by gravity, and streams are the low points in communities. Excess water can get into these systems through leaks. Blockages can also occur—a tree root grows through a crack in the pipe. Poor maintenance or system design can also cause problems. As a result, sanitary sewers can overflow carrying untreated sewage into the streets and waterways in our communities. EPA estimates that between 23,000 and 75,000<sup>80</sup> sanitary sewer overflows (SSOs) occur in a given year. SSOs are violations of the WWTP NPDES permit.

### What about nondomestic wastewater that goes to WWTPs?

The ***national pretreatment program*** is part of the NPDES permitting process. It applies to wastewater from industrial or manufacturing facilities that flows into a WWTP. The industrial wastewater must meet certain requirements before it leaves the industrial facility to ensure that the WWTP is able to process the wastewater without jeopardizing its physical treatment structures, interfering with its treatment processes, or allowing pollutants to pass through its facility and be discharged into the waterway. Pretreatment requirements can include prohibitions on pollutants, specific pretreatment standards, and local limits. Generally, there are no pretreatment standards for conventional pollutants because the WWTP should be able to treat them. EPA administers the pretreatment program for tribes and in many states.

## What happens to biosolids produced from wastewater treatment?

**Biosolids** are a product of the wastewater treatment process. When solids are separated from liquids, they are then treated physically and chemically to produce a nutrient-rich sewage sludge called biosolids. Depending on what is in the biosolids, they can be applied to farm land or mining reclamation sites with the goal of improving soils. The standards for use are set out in [federal regulations](#).

EPA does not have accurate information about the amount of biosolids produced across the country every year, as it only collects information from larger publicly owned treatment works. Based on 2019 annual reports, almost 5 million dry tons of biosolids were produced.

EPA administers all but nine state biosolids programs in the country. The Clean Water Act requires EPA to review biosolids data and information every two years. EPA reviews publicly available data on pollutants in biosolids, conducts biosolid surveys, and performs risk assessments on pollutants identified that exceed an identified level of concern for human health and the environment. Regulations are then developed for any new pollutants that exceed these levels and for which regulations have not already been developed.

## ACTION CHECKLIST MUNICIPAL WASTEWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- If your community has CSOs and a Long Term Control Plan, what is the timeline for completion of the plan? Can the timeline be shortened, especially if the communities most impacted are overburdened with pollution? Can affordability challenges be addressed by accessing more grant funding through the CWSRF program or other water infrastructure funding?
- Do you know whether your community has a problem with sanitary sewer overflows?
- Does sewage ever backup into your bathroom, particularly in the basement? Do you report it to your wastewater utility when it happens? It is important for them to know when and where these problems occur.
- Is your community keeping up with maintenance of your sanitary sewer system? Many municipalities have let maintenance lapse because it is politically challenging to increase utility rates, and many community members may have difficulty paying their utility bills as it is. However, there are cost-effective strategies to maintain collection systems, including pipe lining. Find out what kind of maintenance challenges your community's wastewater system faces.
- What kinds of industries send their wastewater to your treatment plant? Are these industries paying a reasonable rate for the treatment? How often is their wastewater monitored to ensure that it meets pre-treatment requirements?
- If your wastewater utility generates biosolids for application, where are they applied? Are the waterways in that community suffering from impairments? Could those impairments be related to your utility's biosolids?





# WASTEWATER-INDUSTRIAL

The pollutants in industrial wastewater are addressed either through an individual or general wastewater NPDES permit for the facility or through the pretreatment requirements for wastewater that flows to a WWTP, as explained above.

Technology-based limits discussed above (p. 82) can have multiple components and be complex. They generally outline the pollution limits that the level of technology should be able to meet. The following table illustrates the various levels of control required for different types of discharges and categories of pollutants. When you look at the effluent guidelines for a particular industry, you may see any or all of the terms below used. More detail is available in EPA's Permit Writers Handbook<sup>81</sup> or on EPA's [Effluent Guidelines](#) website.

- **Best practicable control technology currently available (BPT)** – minimum for existing
- **Best conventional pollutant control technology (BCT)** – for conventional pollutants if the BPT won't meet water quality standards

- **Best available technology economically achievable (BAT)** – for toxic or nonconventional pollutants if BPT won't meet water quality standards
- **New Source Performance Standards (NSPS)** – new direct dischargers; based on the best available demonstrated control technology; most stringent attainable; cost involved
- **Pretreatment Standards for Existing Sources (PSES)** – existing indirect dischargers; to protect the WWTP; often similar to the BAT for the industrial wastewater category. See 40 C.F.R. § Part 403.
- **Pretreatment Standards for New Sources (PSNS)** – new, indirect discharge sources; to protect the WWTP; most stringent attainable; cost involved
- **Best professional judgment (BPJ)** – permit issuer uses this when there are no effluent guidelines

Technology-based requirements have been developed for more than 50 different categories of industrial and commercial activity and can be found in the Code of Federal Regulations. See 40 C.F.R. § Chapter I, Subchapter N, Part 400 – 471). We will cover just a few of these categories below.

**SUMMARY OF CWA TECHNOLOGY LEVELS OF CONTROL**

Type of sites regulated	BPT	BCT	BAT	NSPS	PSES	PSNS
Existing Direct Dischargers	X	X	X			
New Direct Dischargers				X		
Existing Indirect Dischargers					X	
New Indirect Dischargers						X
Pollutants regulated						
Conventional Pollutants	X	X		X		
Nonconventional Pollutants	X		X	X	X	X
Toxic (Priority) Pollutants	X		X	X	X	X



## NORTHERN NEW MEXICO

Land-based and Native groups in New Mexico appeal an industrial stormwater NPDES permit to achieve historic regulatory and public participation requirements. [Link to story.](#)

### ACTION CHECKLIST INDUSTRIAL WASTEWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- What kinds of industrial wastewater are managed at your wastewater utility? Do these industries have their own NPDES permits or are they part of the pretreatment program for the nearby WWTP?
- Are the technology-based limits appropriate to meet the water quality standards?
- How old are the technology-based limits? Have they been the same for several permit cycles even though there might be more effective treatment technologies?
- What toxic chemicals are in the industrial wastewater going to the receiving waters or your WWTP?

## ✓ ACTION CHECKLIST MINING

- Get on email list for all mining-related permit information and renewals. These permits might be through your water quality agency or perhaps through a mining agency, or both. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Review permits for facilities in your watershed:
  - Are all pollutants of concern covered in the limits? If not, how will they be controlled by BMPs?
  - How are treatment lagoons and tailing ponds addressed? Are there controls on accidental or intentional discharges? Is there monitoring for leaks or failures?
  - Are there tailings dams? If so, what is their stability and how often are they inspected?
  - Are there groundwater impacts and pathways for groundwater pollution to reach surface water?
- Are all facilities and activities included in the permit?
- Examine uses and criteria downstream from the facilities.
- Have the waters downstream been assessed? If they are impaired, the permit discharges cannot cause or contribute to any violations.
- Is there a closeout or reclamation plan for the mine? If so, does it adequately address water quality concerns?

### How is wastewater from MINING regulated?

Mining operations can include many different metals and ores, use a wide variety of processes, and produce significant quantities of wastewater. Historically, these operations have been major sources of water pollution. Acid mine drainage is one of the most common impairments in Pennsylvania, West Virginia, and North Dakota. By some estimates, there are more than 500,000 abandoned mines in the US with a cleanup cost of over \$50 billion.

Active mining operations pose great risks because they are using new processes that allow access to more areas and impact more waterways. Wastewater from impoundments holding mining waste is getting into rivers and streams more often due to flooding or impoundment failures from large storms worsened by climate change. Wastewater from these operations can also pollute groundwater. NPDES specifics by type of mining are as follows.



**Hardrock mining** – The NPDES regulations include limits for different pollutants depending on the ore being mined, including uranium, mercury, titanium, nickel, copper, lead, zinc, gold, and silver. They apply to the mine and mills processing the ores. Generally, the discharge of processing wastewater directly to waterways is prohibited. Mine drainage must meet required effluent limitations. The amount of runoff from a facility is limited and must meet the effluent limitations.<sup>82</sup>

**Mineral mining and processing** – This category includes minerals such as crushed stone, sand and gravel, and potash. The NPDES regulations apply to mine dewatering and wastewater generated by processing the minerals. If facilities—including wastewater impoundments—are designed, constructed, and maintained to manage wastewater from a rain event that lasts 24 hours and occurs about every 10 years, then overflows from that facility are not subject to the effluent limitations.<sup>83</sup>

**Coal mining** – Discharges from coal preparation plants, associated areas, and mine drainage must meet limits for iron, manganese, total suspended solids, and pH. Discharges from lands being reclaimed from mining or from underground mines no longer in use must meet limits until the performance bond issued by the appropriate authority is released.<sup>84</sup>

## How is the wastewater from the OIL AND GAS INDUSTRY regulated?

Shale gas extraction has become the most common source of wastewater in the oil and gas industry. Extraction involves the use of hydraulic fluids, which are typically comprised of *thousands of chemicals*, including known carcinogens. (There is no federal requirement for drillers to report the chemicals they use.) These hydraulic fluids are pumped into a well at high pressure to fracture the shale formation and release the gas. Some of the pumped fluid flows back out of the well. With horizontal fracturing techniques, these wells can use 3 to 5 million gallons of fluid in the process, resulting in enormous amounts of wastewater. This wastewater often contains high levels of salts and hazardous substances like heavy metals. Oil and gas wastes and wastewaters *can also be radioactive* due to naturally-occurring radioactive elements found in the earth being forced out in high-pressure drilling processes.<sup>85</sup>

It is important to understand that while shale gas resources are well known in some regions and states like the Marcellus shale play in Pennsylvania, West Virginia, and Ohio or the Permian Basin in Texas and New Mexico, shale resources span over many states including Montana, California, Alabama, and Indiana.

Shale gas operations are regulated along with other oil and gas operations that produce extraction effluent. Technology-based regulations have been developed for offshore and onshore facilities.<sup>86</sup> The regulations prohibit any direct discharge of wastewater from onshore operations to waterways.

Any discharges from these operations that are sent to a WWTP must meet pre-treatment requirements described above.

The EPA prohibited discharges of unconventional oil and gas extraction wastewater to WWTPs in 2016, but indirect discharges<sup>87</sup> remain an issue. The pretreatment standards for unconventional oil and natural gas extraction activities by new and existing sources also prohibit any discharge of pollutants.<sup>88</sup>

Discharges can also be sent (via truck or rail transport) to a centralized waste treatment (CWT) facility designed to address the kind of pollutants found in the effluent and covered by an NPDES permit.<sup>89</sup> Under this method, the CWT treats the wastewaters and discharges the treated water directly into a WOTUS, or alternatively, indirectly to a POTW. Under this framework, CWT facilities hold responsibility to properly treat the wastewater, and to dispose of the treated wastewater subject to the applicable limitations of its NPDES permit, or the pretreatment program control mechanism if discharging to a POTW.

However, if the operation is designed NOT to discharge (i.e. contain all effluent on-site or inject effluent into a groundwater well), it is not required to obtain a discharge permit. And if all materials, products, or wastes on-site are protected from stormwater or runoff adequately to meet the “no exposure exclusion” for stormwater as described below, the operation may not require an NPDES permit of any kind.

## ACTION CHECKLIST OIL AND GAS ACTIVITIES AND FACILITIES

- Get on the mailing list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Track down any NPDES permits for the oil and gas extraction operations in your watershed.
- Review permit limits and compare them to what you know about the produced water.
- Identify impacted communities nearby—reach out to trusted leaders to inform them of the health threats.
- Inform the permitting authority about impacted communities and insist that they reach out to them directly.
- Request that state and local environmental and health officials conduct thorough testing and assessment of fracking wastes and leachate from facilities accepting fracking wastes. (e.g., PA DEP)
- Request health studies of chemicals utilized in extraction processes.
- Insist that updated precipitation and streamflow data are used in calculations of the permit limits and any mixing zones.
- Insist that mixing zones be prohibited near sensitive uses and any human exposure.

## Is industrial and commercial PESTICIDE USE regulated under the NPDES program?

Despite the fact that pesticides are often used near waterways, EPA considered pesticides exempt from the NPDES program until a 2009 court decision found that policy illegal. Point source discharges of both biological and chemical pesticides are now regulated mostly through general permits developed by EPA and the states. Individual permits can be developed for discharges not covered by the general permits.

EPA's Pesticide General Permit (PGP) covers mosquito control, weed and algae control, animal pest control, and forest canopy pest control. Applicators are required to follow the label directions, minimize discharges, keep records of use, monitor, and report adverse impacts of use. Some applicators must develop a management plan.

## How are discharges from COMMERCIAL BOAT AND VESSELS regulated?

Discharges from boats and vessels of all sizes have contributed to pollution in our lakes, rivers, and streams. The Great Lakes in particular have seen rapid spread of pollutants and invasive species as a result of ballast water discharges.

The Vessel Incidental Discharge Act of 2018 requires EPA to develop national standards for commercial vessels that incidentally discharge to waterways. While EPA works on final regulations, the 2013 Vessel General Permit (VGP) applies to commercial vessels longer than 79 feet. Recreational vessel discharges are not regulated.

The general permit addresses discharges from washing decks, bilgewater effluent, ballast water, gas turbine wash water, refrigeration discharge, boat engine wet exhaust, fish hold effluent, and greywater.

Sewage discharges from vessels are NOT regulated under this general permit. Separate regulations for marine sanitation apply to vessels owned and operated by the federal government and allow states to develop their own regulations after receiving approval from EPA to do so.<sup>90</sup> These regulations prohibit sewage discharges into the Boundary Waters Canoe Area and into state waters in the Florida Keys National Marine Sanctuary. Some vessels are prohibited from sewage discharges in the marine waters of California.

The general permit defines pollutants not covered, including trash, effluent from dry cleaning operations, and medical waste. Individual permits can be developed for any vessel incidental discharges not covered by the general permit.

## ACTION CHECKLIST INDUSTRIAL AND COMMERCIAL PESTICIDE USE

- Get on the mailing list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Determine whether your state has a pesticide general permit or if the EPA permit applies.
- Research online or call the agency to get a list of the operators who are covered by that general permit.
- If you see pesticide application near or over the water in your watershed, take photos.
- Work with communities and community-based organizations to determine the frequency of application.
- Reach out to your agency or EPA to determine whether that operator is covered under the general permit. If not, it may be an unpermitted discharge of chemicals to the water body. It also may be a health risk to the nearby communities.

## ACTION CHECKLIST COMMERCIAL VESSELS

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Identify vessels in your waters that are covered under this permit. Determine which waste streams are being discharged.
- Ask questions about the pollutants in those waste streams.
- Monitor in the area of the vessels when they are nearby, if possible. At least observe any discharges.



### How are CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs) regulated under the NPDES program?

The trend toward large-scale livestock and aquaculture operations where animals are concentrated in small feeding areas has created significant water quality problems in hundreds of watersheds around the country. Very high levels of nitrogen, phosphorus, and bacteria have led to severe ecological and human health problems. Wastewater from these kinds of facilities can also contain drugs such as antibiotics used in the production process.

Concentrated animal feeding operations (CAFOs) require NPDES permits. The Clean Water Act has always recognized large-scale feedlots as point sources of pollution, but control of feedlot pollution more generally has come slowly with regulations addressing large and medium operations finalized in 2003. CAFOs are operations that exceed a certain number of “animal units.” Large CAFOs have greater than 1,000 cattle, 700 dairy cows, 2,500 swine, 125,000 broiler chickens or 82,000 egg-laying chickens, or 500 horses. Medium CAFOs have 300–

999 cattle, 200–699 dairy cows, 750–2,499 swine, 37,500–124,999 broiler chickens, 25,000–81,999 egg-laying chickens, and 150–499 horses. Small feedlots operate with fewer animals, but still contribute significant amounts of pollution.<sup>91</sup>

State CAFO programs vary widely in approach and effectiveness. Most rely on general permits that, once developed, allow little or no opportunity for public review or comment on each specific facility that applies for coverage. Monitoring and reporting requirements for general permits are usually minimal and lack specificity. All CAFO operators that are within the categories included in the general permit are required to apply for coverage under the general permit.

Under federal regulations, CAFO permits now require the development of a Nutrient Management Plan (NMP). The plan must be included in the permit and must be subject to public notice and comment. The permittee must develop the plan consistent with state technical standards, which include “best management practices” and limits on land application rates for animal waste.



#### NORTHEAST IOWA

Iowa allows CAFOs to verbally declare that they do not discharge in order to avoid permitting required by the CWA. This practice has resulted in the siting of a 12,000-head of cattle facility in an Outstanding Iowa Water that is impaired for bacteria and flows through the fragile karst. [Link to story.](#)

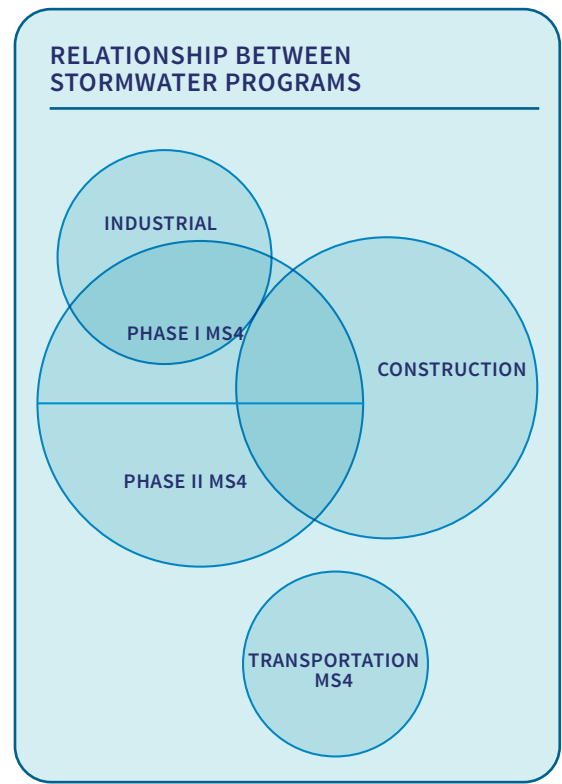
#### ACTION CHECKLIST CONCENTRATED ANIMAL FEEDING OPERATIONS

- Get on the mailing list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Is there a permit program in place? Read it carefully.
- Identify all CAFOs in your watershed. Have they all CAFOs applied for coverage?
- Will the general permit address the quality of each receiving water? Is any organization or agency regularly monitoring water quality downstream from the CAFO(s)?
- Are any TMDLs in place or in progress where there is a CAFO?
- What is the method for requiring an individual permit if the general permit is not sufficient to protect water quality?
- If the permit is draft out for comment, examine any changes from the previous permit.
- Get a copy of the Nutrient Management Plan. It should be part of a new permit application.
- What best management practices will be employed and by when? Have they been working to date?
- What types of monitoring and reporting are required?

# STORMWATER

## How is stormwater pollution covered by NPDES permits?

Stormwater carries polluted runoff from streets, rooftops, parking lots, industrial facilities, and construction sites into water bodies. This major source of pollution has attracted much more attention lately, and controlling stormwater pollution is critical to improving and maintaining water quality in the most populated areas and rapidly developing areas of the country. EPA identifies several categories of stormwater discharges, including municipal, industrial, construction, and transportation.



## What if stormwater pollution doesn't fit in one of the categories?

The Clean Water Act and regulations allow for the designation of a stormwater pollution category and permit requirements if it can be proven that the stormwater pollution contributes to water quality violations or is a significant contributor of pollutants in a water body.<sup>92</sup> This process has been deemed the “[Residual Designation Authority](#)” (RDA), and it has been applied to impervious surfaces greater than or equal to one acre in the [Long Creek watershed](#) in Maine. Since 2008, advocacy groups in the Charles River basin in Massachusetts, have petitioned, worked through draft permits, and gone through the courts to have RDA applied to address runoff, specifically phosphorus, from privately-owned impervious surfaces. As of 2022, several petitions across the country have been successful, but the process is still unique and messy. (see sidebar)

## Are stormwater programs the same from state-to-state?

The EPA has set some minimum federal requirements for all municipal, industrial, construction, and transportation stormwater pollution permits and programs. However, these requirements do not include technology-based effluent limits similar to those that are in municipal and industrial wastewater discharge permits. Instead, they rely on:

- a) stormwater management plans to identify best management practices that will reduce stormwater pollution AND
- b) implementation and monitoring of those practices.

Without specific, required limits, state permits vary widely across the country. States may impose stricter rules and tighter timetables for compliance, and some states have.



### RESIDUAL DESIGNATION AUTHORITY

Stormwater pollution requires a permit from:

“(E) A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.”<sup>93</sup>



### NORTHERN NEW MEXICO

Residual Designation Authority (RDA) and Municipal Separate Storm Sewer System (MS4) Permit Requirements in New Mexico were used to protect downstream communities. [Link to story.](#)



More detail on the residual designation authority developments nationally.

- [EPA Region 1](#)
- [EPA Region 3](#)
- [EPA Region 6- Response to the Los Alamos County Petition](#)
- [EPA Region 9](#)

## STORMWATER–MUNICIPAL

The 1987 Amendments to the Clean Water Act set the process of controlling municipal stormwater pollution into motion. The changes were developed and instituted in two phases.

### MEDIUM AND LARGE MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) – PHASE I

In the early 1990s, in response to a lawsuit, EPA developed stormwater program requirements for urban areas with a population greater than 100,000. Because it was the first step in addressing stormwater runoff, it has been called “Phase I.” There are approximately 250 Phase I individual MS4 permits.

This program applied primarily to major cities across the United States. However, these permits often included smaller communities within an urbanized area, the county government surrounding the city proper, and state and municipal departments of transportation as co-permittees. See later how state departments of transportation often have their own MS4s. In some places, the permit is held by a stormwater utility whose jurisdiction covers multiple municipalities.

These entities are covered by individual permits that require development of management plans and ordinances to control pollution in stormwater runoff from the urbanized area.

Stormwater management program plans (SWMPPs) must meet the statutory requirement of “reducing pollutants to the maximum extent practicable” (MEP).<sup>94</sup> Specifically, the medium and large MS4 plans need to:

- Identify and map major stormwater discharges to rivers, lakes, and streams;
- Identify and map non-stormwater discharges to the stormwater system, including pollutants coming from industrial, commercial, and residential areas;

- Identify and map discharges from construction (at least one acre in size) within the urbanized area;
- Conduct field screening to identify any illegal connections or dumping and take steps to eliminate them;
- Outline the best management practices the MS4 will use to control pollution from these sources;
- Characterize rain and snowfall;
- Characterize the receiving waterway(s);
- Outline best management practices the MS4 will use to control pollution and how they will be maintained;
- Describe available financial resources and stormwater management budget; and
- Include an implementation plan to address any applicable TMDLs.

The MS4 also must carry out inspections and monitoring necessary to determine compliance as well as conduct public education and engagement activities.<sup>95</sup>

### SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) – PHASE II

By March 2003, all communities within urbanized areas with a population of 50,000 or more and at least 1,000 people per square mile were required to submit applications for stormwater permits. This has been called “Phase II” of the stormwater program. Some communities are required to apply for individual permits, but most are covered by a state general permit. Communities with a population less than 10,000 can be required to obtain a permit if the agency deems it necessary to protect receiving waters from stormwater pollution.

In addition to municipalities, hospitals, schools, universities, and other districts that maintain a stormwater system within an urbanized area can be MS4 permittees. Federal facilities such as military bases can also be MS4 permittees. As of 2022, there are approximately 6,700 Phase II MS4 permittees. It is EPA’s policy that all of these permittees will remain Phase II permittees even if their population grows to exceed 100,000 people.



### AVOIDING GREEN GENTRIFICATION

Investment in green stormwater infrastructure has often led to increased property values and sometimes led to displacement of lower-income residents. This is called **Green Gentrification** or **Climate Gentrification** and we need to use public policy tools to guard against it.



### ELIMINATION OF “URBANIZED AREA”

The Census is eliminating its urbanized area definition starting in 2020. EPA has developed guidance as it considers options for changing the regulatory language.



### MUNICIPAL STORMWATER PERMIT REQUIREMENTS

“(B) Municipal discharge – Permits for discharges from municipal storm sewers –

- (i) may be issued on a system – or jurisdiction-wide basis;
- (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”<sup>96</sup>

The Phase II requirements are characterized by “six minimum control measures” (MCMs).<sup>97</sup> All entities regulated under Phase II must develop a plan and programs to address the following:

**1 Public education and outreach on stormwater impacts**

Small MS4s are required to develop and disseminate education materials that will raise the public awareness about what stormwater pollution is, what the causes are, and how individual responsibility can reduce it.

**2 Public participation and involvement**

Small MS4s are required to establish meaningful opportunities for the public to be involved in the development and implementation of the stormwater management plan that addresses where they live and work.

**3 Illicit discharge detection and elimination**

Some stormwater pollution problems are caused by non-stormwater discharges into the storm drain system. All permittees must immediately establish a program for identifying illicit discharges and taking steps to eliminate them.

**4 Construction site stormwater runoff control**

Within the urbanized area, a program to reduce pollutants from any land disturbance one acre or greater (or if part of a one acre or greater common plan) must be developed, implemented, and enforced by the permittee. This means that in addition to obtaining coverage under a construction stormwater permit at the state level, the operator of the construction site must also comply with ordinance(s) developed at the municipal, county, or district level that dictate how the activity can occur. This is intended to give municipalities regulatory control over these significant contributions to stormwater pollution in the urbanized area.



**5 Post-construction stormwater management in new development and redevelopment**

Maintenance of property after construction is complete is critical in controlling construction stormwater pollution. Attention to post-construction stormwater controls and maintenance is generally NOT addressed in the state-level stormwater NPDES permit for construction sites. Small MS4s must develop a plan and ordinances to address the post-construction stormwater pollution problems on every construction site within the jurisdiction that is one acre or greater (or part of a one acre or greater common plan).

**6 Pollution prevention/good housekeeping for municipal operations**

All small MS4s must develop a plan and a program to manage their regular duties in ways that prevent future contributions of stormwater pollution into the system from sites that they own and manage. Examples might include developing policies about (a) hazardous waste management at city

maintenance facilities, (b) pesticide and fertilizer use in city parks, (c) establishing green roofs on municipal buildings, and (d) proper stormwater management at municipal construction sites.

In addition to the MCMs, a Phase II MS4 permit should also require pollution reductions to address any impairments or implement Total Maximum Daily Loads ([Section 303\(d\)/TMDLs, p. 124](#)) developed to address those impairments in waterways where municipal stormwater is discharged.

These requirements are essentially required in the SWMPPs for the Phase I communities as well, but they are not spelled out this clearly. Both Phase I and Phase II MS4s must submit annual reports about the activities to implement their plans. Notable differences between the Phase I and II requirements are that the Phase I communities must address industrial sources of stormwater pollution within their stormwater service area, they are subject to greater inspection, and monitoring is required.



## Can MS4 communities work together to fulfill the stormwater requirements?

In some states, neighboring small Phase II jurisdictions are working together and may apply to be co-permittees in order to achieve the six minimum measures. There are no legal or regulatory barriers to Phase I and Phase II permittees collaborating to meet their permit requirements. MS4s can also partner with watershed groups and conservation organizations. These efforts can result in substantial savings and expand the MS4's capacity to implement its plan.

Stormwater utilities may be set up based on political or watershed boundaries and assigned responsibility for meeting the six minimum measures within that service area. If individual communities within the utility boundary are not co-permittees, agreements should be set up between them and the stormwater utility to establish responsibilities for meeting the permit requirements.

## ACTION CHECKLIST MUNICIPAL STORMWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Contact your city, town, or stormwater utility about stormwater planning and management; ask to be involved. Public involvement is required!
- Ask your city how they plan to reduce the discharge of pollutants “to the maximum extent practicable.” Is there a stormwater management plan? If so:
  - How does it characterize receiving water bodies, e.g., existing and designated uses, assessment?
  - How does it report and share any relevant monitoring data collected?
  - How does it prevent contribution to existing stormwater pollution problems (or fit into approved TMDLs, [p. 124](#))?
  - How does it protect high quality waters ([p. 63](#))?
  - Do the plans include implementation commitments, timetables, and budgets? Are they measurable and enforceable?
  - Do they include monitoring and opportunities for revisions to the controls before the next permit cycle?
- If you are monitoring streams, consider monitoring below stormwater outfalls to identify hot spots and potential conflicts with designated or existing uses.
- Large and medium city (Phase I): ask about permit renewal. Review stormwater management plan and monitoring; what has been accomplished during the permit period? Does it need to be revised and strengthened?
- Small city/town/district/hospital (Phase II): ask how each of the six minimum measures ([p. 96](#)) are being addressed.
- Find out what public education or involvement is planned or going on. Can your group help? Coordinate with community-based organizations in the watershed on public involvement. Does the city want to pay groups to help?
- Promote protection and creation of green stormwater infrastructure as a best management practice.
- Ask your stormwater authority (town, city, county, utility) how they will address post-construction stormwater impacts. How will they coordinate with the construction stormwater permits?
- Identify all non-traditional MS4s in the community that are permitted (i.e., schools, hospitals, public facilities) and learn about their contribution to pollutants.
- Identify any non-traditional sources of stormwater pollution (large impervious areas) that may be a significant source of pollutants or may be contributing to violations of water quality criteria and consider whether a Residual Designation Authority petition is worthwhile.
- Talk with city and state planning departments about stormwater requirements. Have they been communicating with the stormwater authority regarding coordinating land use planning, zoning, and requirements for stormwater management?

# STORMWATER- TRANSPORTATION

When it rains or snow melts, runoff accumulates on our roads from the surrounding area and often flows directly into a stream or lake. In some communities, roads are designed to move runoff away from houses, businesses, and roads into a local waterway. For this reason, roads are considered conveyances and can be point sources under the Clean Water Act.

Much of the pollution from roads is managed through conventional MS4 permits. Some roads that contribute a lot of pollution to our lakes, rivers, and streams, however, are managed separately by state transportation agencies. These roads serve an ever-changing population of both residents and visitors as well as commercial vehicles. And the road system may intersect with many different waterways. Many of these agencies do not have authority over the users of these roads or the land uses adjacent to these roads. Likewise, these state road managers often are not willing to be subject to the authority of every local government through which the road system runs. Because of the impacts on our waterways, these state road systems fall under the MS4 program and often have their own “non-traditional” MS4 permit.

MS4 permits for these state transportation agencies include the six MCMS that are part of the Phase II permits. The permit should address management of stormwater from roads, roadside areas, facilities, construction activities, operations and maintenance of stormwater infrastructure, as well as monitoring and evaluation. Pollution reduction may not be required for every waterway impacted by the agency’s activities, but it should be required for impaired waterways and for TMDL implementation.

One pollutant—road salt—is receiving more and more attention as stream monitoring shows alarming increases in salt levels. And once these salts dissolve into the water in road runoff, they generally cannot be removed. Some states are developing road salt TMDLs and others are incorporating more requirements in MS4 permits.

## Are forest roads regulated through the NPDES program?

No, they are not. Stormwater runoff from forest roads on state, federal, and private lands can have a significant impact on water quality in nearby waterways—particularly from sediment in runoff. Nonetheless, as of 2022, EPA has not developed regulations to manage discharges from forest roads under the Clean Water Act. The 2014 Farm Bill prohibited regulation of silviculture activities under the Clean Water Act as long as the activities are conducted according to industry standards, and the bill also prohibited citizen suits against silviculture practices.

## ACTION CHECKLIST TRANSPORTATION STORMWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- If you live in an urbanized area, each entity that manages roads has a responsibility to manage the runoff from their roads. Ask for their NPDES permits and plans for implementing the six MCMS.
- Are the waterways that receive road runoff impaired? If so, the road managers may also have to reduce the pollutants in the runoff. If there are no pollution reduction requirements in their Stormwater Management Plans or MCMS, ask the road manager and the state agency why not.
- Get a copy of your state highway agency’s MS4 permit and see if the stormwater management plan will reduce pollutants to the “maximum extent practicable.”
  - How does it characterize receiving water bodies, e.g., existing and designated uses, assessment?
  - How does it report and share any relevant monitoring data collected?
  - How does it prevent contribution to existing stormwater pollution problems (or fit into approved TMDLs, [p. 124](#))?
  - How does it protect high quality waters ([p. 63](#))?
  - Do the plans include implementation commitments, timetables, and budgets? Are they measurable and enforceable?
  - Do they include monitoring and opportunities for revisions to the controls before the next permit cycle?
  - What is the agency doing to educate the public and what are their public participation procedures? Is there outreach to the communities most affected by road runoff?
- If you are monitoring streams, consider monitoring below stormwater outfalls from roads to identify hot spots and potential conflicts with designated or existing uses.
- If you live in a community that uses road salt or brine, consider monitoring for increased salt levels as part of your stream monitoring program. Assist communities that are most affected by the salt runoff—are they informed? are they involved in the public opportunities?
- There are resources on [environmentally sensitive road runoff practices](#)—ask your road managers to use them if they aren’t already.

## STORMWATER-INDUSTRIAL

Stormwater and snow melt carry pollutants to storm drains, dry wells, or directly into receiving waters. Industrial settings can be particularly vulnerable to unintended transport of hazardous pollutants into surface waters. Larger and more frequent storms are making these threats real in many communities. In addition to the requirement that large and medium MS4s must regulate industrial stormwater pollution within their jurisdiction as part of Phase I of the stormwater program, eleven industrial categories are required to obtain permits for their stormwater pollution.

While you may not consider your watershed to have “industrial” activities or pollutants, close review of the list of categories (see sidebar) reveals several very common activities found in urban as well as suburban and rural settings including landfills, salvage lots, and trucking facilities. As with other NPDES permits, industrial stormwater can be regulated through individual or general permits.

### What are the requirements for controlling industrial stormwater pollution?

When possible, states prefer to include industrial stormwater requirements in existing NPDES industrial wastewater permits. Requirements related to industrial stormwater management are often written into the narrative section of a wastewater permit following the effluent limits. In many cases, the stormwater-related section describes the stormwater management plan that must be developed. It might also describe monitoring or reporting requirements. Industrial stormwater monitoring and reporting requirements are generally not as specific nor as frequent as the Discharge Monitoring Reports for wastewater NPDES permits described later, [\(p. 104\)](#).

An industrial activity that doesn’t already have an NPDES permit for wastewater discharge, such as an auto salvage lot, will need to seek an individual permit or apply to be covered under the state or EPA’s industrial stormwater general permit by submitting a Notice of Intent (NOI). Both options will require a stormwater management plan, which may or may not have to be submitted to the permit authority. It should require monitoring and reporting. For the states and territories where EPA is the NPDES permitting authority, the [Multi-Sector General Permit \(MSGP\)](#) may apply. For time-limited activities, a Notice of Termination (NOT) is required when the activity is complete and will no longer discharge into water bodies. A series of [Fact Sheets](#) have been developed that provide a great amount of detail for 29 industrial sectors covered.

Some industrial stormwater discharges are exempt from permitting under the Clean Water Act. With the exception of CAFOs, agricultural stormwater is exempt. Exemption of stormwater discharges from mining operations and oil and gas activities and facilities that are not exposed to any materials, products, or wastes has been the subject of legislation, rulemaking, and lawsuits.<sup>100</sup> This exemption may include exploration, construction, and production activities, as well as treatment and transmission facilities, but it is complicated. This exemption does not apply when there is a discharge of a “reportable quantity” for which notification is or was required or a discharge that contributes to a violation of a water quality standard. Visit the EPA website for up-to-date details and background.



### INDUSTRIAL STORMWATER CATEGORIES<sup>101</sup>

- One (i):** Facilities with effluent limitations
- Two (ii):** Manufacturing
- Three (iii):** Mineral, Metal, Oil and Gas
- Four (iv):** Hazardous Waste, Treatment or Disposal Facilities
- Five (v):** Landfills
- Six (vi):** Recycling Facilities
- Seven (vii):** Steam Electric Plants
- Eight (viii):** Transportation Facilities
- Nine (ix):** Treatment Works
- Ten (x):** Construction Activity
- Eleven (xi):** Light Industrial Activity

## WHAT IS THE “NO EXPOSURE EXCLUSION?”

If a facility can demonstrate that no chemicals or pollutants of any sort are “exposed” to stormwater, it can be exempted from the industrial stormwater permitting requirements, excluding facilities that fall into the construction activity category. This means the industrial materials and/or activity area have to be sheltered from precipitation and runoff (see sidebar). States process this exclusion in different ways. Some simply require an application and other states require an on-site inspection before the exemption is granted.



## INDUSTRIAL “NO EXPOSURE” EXCLUSION

“No exposure’ means that all industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.”<sup>102</sup>

## ✓ ACTION CHECKLIST INDUSTRIAL STORMWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Investigate “industrial” sites in your watershed that are exposed to stormwater, especially salvage lots and landfills.
- Do these sites have wastewater NPDES permits? If so, are the stormwater requirements included in their wastewater NPDES permit?
- Is the site covered under an industrial stormwater general permit?
- Has the site applied to be “excluded” from requirements because they claim to not be “exposed” to stormwater? If so, has the state inspected that claim?
- Has the facility developed a stormwater pollution prevention plan? Has it been filed with the state? Is it available on-site? Get a copy and review it.
- Does the permit, the Notice of Intent, or the stormwater pollution prevention plan account for waters that are polluted already, waters with TMDLs ([p. 124](#)), or high quality waters? Causing or contributing to problems justifies individual permits, numeric effluent limits, and/or permit denial.
- Coordinate comments with communities that may be exposed to polluted industrial stormwater.



# STORMWATER- CONSTRUCTION

Construction activities are ubiquitous, and the pollution from them is new pollution to the waterway and cumulatively significant. Stormwater pollution from construction activities is one of the eleven industrial stormwater categories, however EPA has developed specific NPDES permit requirements for managing construction stormwater. Any disturbance of one acre or greater, or even a site less than one acre if it is part of a larger development plan that will disturb one acre or greater, is regulated. The permitting authority can also regulate any construction site regardless of its size if there is a potential for the disturbance to contribute to a violation of a water quality standard or to significantly contribute pollutants to waters.<sup>103</sup>

States and EPA regulate most construction stormwater activities through general permits, but individual permits can be required where necessary. EPA has a general construction stormwater permit that provides coverage where EPA is the NPDES permitting authority, including on most tribal lands, related to federal facilities in some states, and for oil and gas activities in Oklahoma and New Mexico.

## Who is in charge of the construction stormwater permitting process in each state?

Many states already have erosion and sedimentation control programs, and the state construction stormwater permits are usually coordinated with those programs. The same entity responsible for administering the existing program, such as county conservation districts, often has responsibility for granting coverage under the general construction

stormwater permit. The state agency, or the EPA in states that don't have permitting authority, retains oversight authority over the construction stormwater general permits. If an individual construction stormwater permit is warranted, the state or EPA will most likely develop and issue it rather than the local entity.

## What is required at each construction site?

Under a general permit, the site operator must file a "Notice of Intent" (NOI) with the permitting authority before disturbing any earth. Generally, the NOI form requires information about the site, the project, the controls planned, and the receiving stream, but that is not always the case. It is important to note that EPA's construction stormwater general permit requires a determination regarding federal listed threatened and endangered species as part of its **NOI** process. Most construction stormwater permits do not require pre-construction monitoring, yet this step is critical in determining whether the controls are working during construction.

The federal construction stormwater effluent guidelines prohibit discharge of washout from concrete, paint, stucco, oils, and other construction wastewater; fuels and oils from vehicles; and soaps and solvents used to wash equipment or vehicles.<sup>104</sup> Otherwise, they do not require specific pollution limits for construction sites. Instead, construction stormwater permits require the permittee to design, install, and maintain effective control measures to be used during construction at the site. This information is developed into what is often called a Stormwater Pollution Prevention Plan (SWPPP). Specific requirements for the plan may be different depending on the permitting authority or the kind of construction activity. The plan may or may not have to be submitted to the permitting authority before construction begins, but it should be available on site and available to the public.



## MINIMUM FEDERAL EFFLUENT LIMITATION GUIDELINES FOR CONSTRUCTION AND DEVELOPMENT ("C&D RULE")

- 1 Design, install, and maintain effective erosion and sediment controls, and pollution prevention measures, to minimize the discharge of pollutants;
- 2 Stabilize disturbed areas immediately when construction has ceased and will not resume for more than 14 days;
- 3 Prohibit the dewatering discharges unless managed by appropriate controls;
- 4 Prohibit the discharge of:
  - Wastewater from concrete washout (unless managed by appropriate control), or washout/cleanout of stucco, paint, form release oils, other wastewater materials;
  - Fuels, oils, or other pollutants used for vehicles; and
  - Soaps or solvents to wash vehicles and equipment.<sup>105</sup>

## ACTION CHECKLIST CONSTRUCTION STORMWATER

- Get on the email list for public notice of proposed permits. See [Getting Permits Right \(p. 103\)](#) for general ideas on permit review.
- Contact your state water quality agency about construction stormwater permits. They may refer you to a county authority.
- Find out what individual and general construction stormwater permits are active in your watershed, or pick a site and ask questions about the specific permit and SWPPP.
- Review the general construction stormwater permit that applies in your area (state or EPA).
  - Are the requirements in the general permit sufficient to protect the uses in your watershed?
  - Do the permittees have to provide enough site-specific information and develop a SWPPP *before* they begin construction?
  - Are the stormwater management plans submitted to the county or state? How can the public review them?
  - Does the general permit take into account the receiving water's characteristics?
  - Consider a request or petition for an individual permit in impaired waters, significant pollution from a site, or to protect sensitive uses.
  - Can you make the case for numeric effluent limits due to impaired waters, significant pollution from a site, or to protect sensitive uses?
- Keep an eye on active sites to see whether the [best management practices](#) are put in place and whether they are working.
  - Is there a negative downstream impact that can be attributed to the site?
  - Is the operator monitoring the effectiveness of the controls in place?
  - Can you monitor the receiving water body?

The construction stormwater program is not only about getting a permit and preparing a plan. The controls identified in the plan need to be implemented, the effectiveness of the controls needs to be monitored, and changes to the plan and the controls need to be made when they are not adequate to protect waters. There should be a timeline for the implementation of the controls explaining how they will change as the project progresses. Once construction is completed, the operator must submit a "Notice of Termination" (NOT). The NOT form usually requires at least a signed statement claiming that the site has been stabilized. The definition of "stabilized" may be different in every state, however. Some states have included requirements for post-construction planning and agreements before the NOT can be submitted.

An individual permit may be warranted under certain circumstances, such as when threatened or endangered species are present or when there is potential for the discharge to cause or contribute to violations of the water quality standards.<sup>106</sup>

States can impose more stringent requirements than federal rules require, including specific pollution limits. Since many state construction stormwater permit programs are based on a sedimentation and erosion control program already in place, it is important to make sure that the program at least meets the federal construction stormwater NPDES requirements<sup>107</sup> ([sidebar, p. 101](#)). The existing program may not be sufficient. Unfortunately, county, state, and federal agencies simply do not have enough people or money to inspect every permitted site each time it rains. In fact, many states' inspection processes are entirely complaint-driven. Community information about the effectiveness of pollution controls and impacts of construction sites on water bodies during rain storms can improve compliance with the program.<sup>108</sup>

### How can I be sure that uses are protected and the current condition of the waters is not worsened?

All construction sites are new sources of pollution. Whether they are covered by a general or an individual permit, it is important that the construction stormwater permit requires documentation of the current condition of the waters receiving the impact of the activity and the designated uses and the relevant criteria for those waters. If there is any existing impairment, make sure the agency (and/or the permittee) demonstrates and documents how this activity will not "cause or contribute" to it.<sup>109</sup> Where water quality is better than basic water quality standards would require, an antidegradation analysis is necessary (and should be documented) to protect that higher quality to the greatest extent possible.

### How can I improve construction site compliance in my watershed?

Learn what permits have been issued in your watershed and what each permit requires. Keep an eye on active sites for compliance, and notify the permitting authority when problems are suspected or detected. When the construction is completed, the site should be stabilized. Ask the state whether responsibility for maintaining the longer term sedimentation and erosion controls has been documented. Not many states require that as part of the construction stormwater permit, but all municipalities covered under the Phase I or II permits must be responsible for post-construction controls within their jurisdiction.

The Clean Water Act provides for public comment and involvement in the NPDES permitting process. You will find several different formal opportunities for input, as well as a number of more informal opportunities.

It is essential to comment on NPDES permits in detail during the narrow (generally 30-day) public review period. Comments can include a request for an extended comment period, but you should not rely on that request being granted. If you decide to appeal (or otherwise contest) a permit decision to the agency or before a judge, you can usually raise only those issues that you raised during the initial public comment period. Therefore, if you do not have time to elaborate on an issue or concern during the public review period, it is important to at least raise it at that time. If you go to court later, you may have to show that you have “exhausted all administrative remedies” for addressing your concerns.

For general permits, the only times you can comment on them is when they are first developed (before any actual dischargers are applying for coverage) and every time they are up for renewal, which should be every five years. **Once a general permit is finalized, the public is not given any notice or opportunity to comment on each particular activity or discharge submitted for “coverage” under that permit.** Therefore, it is critical to review and comment on the general permit itself before it is issued, and public comments on general permits may have to be based on hypothetical scenarios. Imagine the worst-case scenario when commenting on a general permit, such as how might an activity allowed under this general permit violate water quality standards? You can and should document the adverse impacts of general permitted activities individually, and in the aggregate. Such documentation can be used to improve the general permit or require individual permits in certain cases.



VIEW PUBLIC NOTICE SAMPLES HERE.



## SOME INFORMATION REQUIRED IN PUBLIC NOTICE<sup>110</sup>

- Name and address of discharger
- Permit number
- Receiving waters
- Location of all discharges
- Issue date, effective date, modification date (if applicable), expiration date
- Public hearing (must be noticed 30 days ahead, if one has been scheduled)
- Where to get the permit and related information

Should be in a public notice:

- Compliance history
- Applicable water quality standards, TMDLs, 303(d) listings



## SETTING UP A COMPLIANCE MONITORING PROGRAM

If you wish to set up a monitoring program, design one that fits your resources and answers your questions. If your questions include whether a facility is in compliance with its permit or whether a discharge is harming a water body (even if it is in compliance), you can monitor upstream and downstream of the discharge as well as in any defined mixing zone at the point of discharge.



You don't necessarily have to collect detailed scientific data. Watershed residents can provide valuable information about water quality

problems to the agency and the permittee by paying attention to, documenting, and reporting visual changes in the receiving water body. For example, when is the water muddy? What species of fish and wildlife are present? What is noticeable downstream of each point source? If you can follow your state's monitoring requirements, any data you collect will be more credible in the eyes of the water quality agency, and it can be valuable to the state's agency staff because they can't regularly monitor every stream.



## SOUTHWEST PHILADELPHIA

Bartram's Garden River Programs train youth leaders to identify CSO and stormwater discharges into their stretch of the river. This awareness has led to interest in monitoring and reporting findings to state and regional officials.

[Link to story.](#)



## PERMIT COMPLIANCE SYSTEM ONLINE

Information on permits, monitoring reports, and related compliance at a facility should be available from your state agency, and often online. In addition, most of the same information can be found in [EPA's Enforcement and Compliance History Online \(ECHO\)](#).

## How do I prepare for NPDES permit review generally?

There are several actions you can take to be more prepared to comment on the NPDES permits. Comments from the public are important because the agency is tasked with protecting water quality for the public. Your voice matters!

### PREPARE TO COMMENT ON PERMITS

**Learn which permits have already been issued, or are proposed, for your area of interest**—a stretch of your river, your whole watershed, or your entire state. This information is likely to be available on your water quality agency website or at [How's My Waterway](#).

**Get on the email lists or mailing lists for public information.** There should be a public notice that announces the public comment period when any new or renewing permit is drafted. Most states now post public notices on their websites. You may be able to request notification when permits in your watershed are under consideration. However, many states don't tailor their public notice lists.

**Find out ahead of time when permits are due for renewal (theoretically every five years), or when new ones are open for public comment.** Public comment periods are usually only 30 days, but you may be able to request an extension from the agency. Give it a try! Every day counts when you are trying to address a technical or legal question and build public awareness and support for your position.

**Collect relevant data and information.** This includes the state water quality standards, available local monitoring results, the water quality inventory for your state, and the threatened and impaired waters list.<sup>111</sup> You will also likely find most of this information on the state water quality agency website or at [How's My Waterway](#).

**Identify or establish a local monitoring program.** It is not necessary to have a monitoring program in order to provide meaningful comments on NPDES permits. However, locally collected data can be helpful—particularly regarding the impacts of activities covered by general permits. Perhaps a local organization is monitoring the water body that is receiving the discharge.

## What information should I collect and review for a specific NPDES permit?

Regardless of whether a permit is individual or general, new, modified or simply being reissued without any modifications, you will need most of the same information. While permits are increasingly available online, you may not be able to access the whole permit file online. For general permits, there may not be much information about specific sites and specific impacts to receiving waters.

### ITEMS TO COLLECT FOR PERMIT REVIEW

**Draft permit and old permit (if applicable) and the permit fact sheets** – It is most important to find out what is changing in the new permit. Be sure to ask for the permit application and the fact sheet (sometimes called the rationale sheet); they both will include valuable information often not in the permit itself.

**Discharge monitoring reports (DMRs)** – As noted earlier, DMRs are submitted monthly by the permittee to the agency. You should review as many of these reports as you can. They are available from your state agency or at [EPA's Enforcement and Compliance site \(ECHO\)](#). Compare the reported levels of the pollutant with the limit in the permit. Do you see any violations? There is a column in DMRs to report exceedances of the limit. Sometimes reports with violations will be submitted and the agency will not notice them. At other times, levels that are violations will be recorded, but not reported as exceedances.

**Summary of information on receiving waters** – To understand the quality of the receiving waters, you should ask for and review anything that is in the permit file on the receiving waters that may have been used to develop the permit limits. If there is nothing apparent, ask the agency what they used to assess the quality of the receiving water. You can track down and review available information from the state agency and other sources on the receiving waters such as the state's water quality standards, the biennial Integrated Report ([p. 125](#)), the list of protection and restoration plans ([TMDLs, p. 129](#)), any fishing or recreation guides that may be published, drinking water protection plans, and wild and scenic designations.

**Discharger's past performance** – Look for “notices of noncompliance” or “notices of violation” in the permit file or again in [EPA's ECHO](#) database. If the permit is new, ask the agency about other permits held by the same entity.

**Potential for water quality violation** – Look for a required analysis of the likelihood that the discharge will contribute to a violation of water quality standards (called a “reasonable potential analysis,” [sidebar p. 83](#)). A summary of the findings may be in the permit fact sheet.

**Correspondence** – Correspondence between the agency and the discharger and even among agency staff can be very enlightening and helpful in your review. This correspondence may be available in the permit file. If not, you may file a Freedom of Information Act ([FOIA, p. 107](#)) request for it.

**Response to comments from last permit renewal (if applicable)** – Concerns raised during the comment period may not be adequately addressed during the finalization of the permit. By reading the comments and responses from the last permit process, you can find out additional information about problems caused by the discharger and ways that the agency proposed to address those problems. Assess whether the steps described in previous responses to comments have been taken.



## ITEMS TO EXAMINE IN PERMITS

<b>COVER SHEET</b>	Review the discharger's name and address, discharge locations, receiving water body(ies), and dates of expiration, modification, and effectiveness.
<b>QUALITY OF RECEIVING WATER(S)</b>	If the permit doesn't describe the uses and condition of receiving water bodies, use the water quality standards, Integrated Report, any TMDLs, or other information in the file to determine the condition of the water.
<b>POLLUTION (EFFLUENT) LIMITS</b>	Generally, no "backsliding" or weakening of existing permit limits is allowed (CWA Section 402(o), see sidebar). Compare the receiving water standards with the limits in the permit. If the limits won't reduce pollution to meet the water quality standards, there should be some discussion in the permit about a mixing zone.
<b>FLOW OF RECEIVING WATER</b>	Is there enough flow to handle the pollution? What are the dilution assumptions behind the permit limits? Most states use historic precipitation and flow data that is now inaccurate because of climate change.
<b>MIXING ZONE(S) AND VARIANCES</b>	Because mixing zones and variances suspend the limits in the permit, it is important to understand exactly the extent (over time and space) of these allowances.
<b>ANTIDEGRADATION ANALYSIS</b>	<p>If the permit will allow new or expanded discharges, an antidegradation analysis must be performed and the findings summarized in the permit or in the fact sheet. That would be the case for all new permits and at least the renewing permits for which</p> <ol style="list-style-type: none"> <li>the volume is proposed to increase,</li> <li>the limits are weaker,</li> <li>the timing of the discharge is longer,</li> <li>there is an additional outfall,</li> <li>the mixing zone is larger, or</li> <li>fewer management practices are required.</li> </ol> <p>Request the antidegradation findings (which may be summarized in the permit) and the documentation of the analysis. The status and adequacy of antidegradation policies and implementation procedures vary considerably across the country.</p>
<b>MONITORING PLAN AND REPORTING REQUIREMENTS</b>	It is important to examine the location, type, and frequency of monitoring activity.
<b>REQUIRED POLLUTION CONTROL PLANS</b>	Some permits—such as stormwater, CSO, concentrated animal feeding operation, oil and gas, and mining permits—include a requirement to develop a plan to meet the pollution controls required in the permit. These plans describe the kind of best management practices (BMPs) that the permittee intends to implement to meet the pollution control requirements. Take time to find and review them. For more information, read the more detailed description of these kinds of permits starting at <a href="#">p. 86</a> .



## DETAILED ADVOCACY GUIDES TO WASTEWATER PERMIT REVIEW

- [Permitting an End to Pollution](#) – River Network
- [Our Waters Our Health](#) – Healthy Gulf



## NO 'BACKSLIDING' IN RENEWED PERMITS

Weakening effluent limits is known as "backsliding." According to the anti-backsliding provisions, no permit may be renewed, reissued, or modified "to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit."

Backsliding is generally illegal under the Clean Water Act, but there are circumstances where it may be allowed by law such as:

- when a facility must expand in order to increase production or to increase the population it serves and no viable alternative exists, or
- new information is available or mistakes were made in issuing the permit.

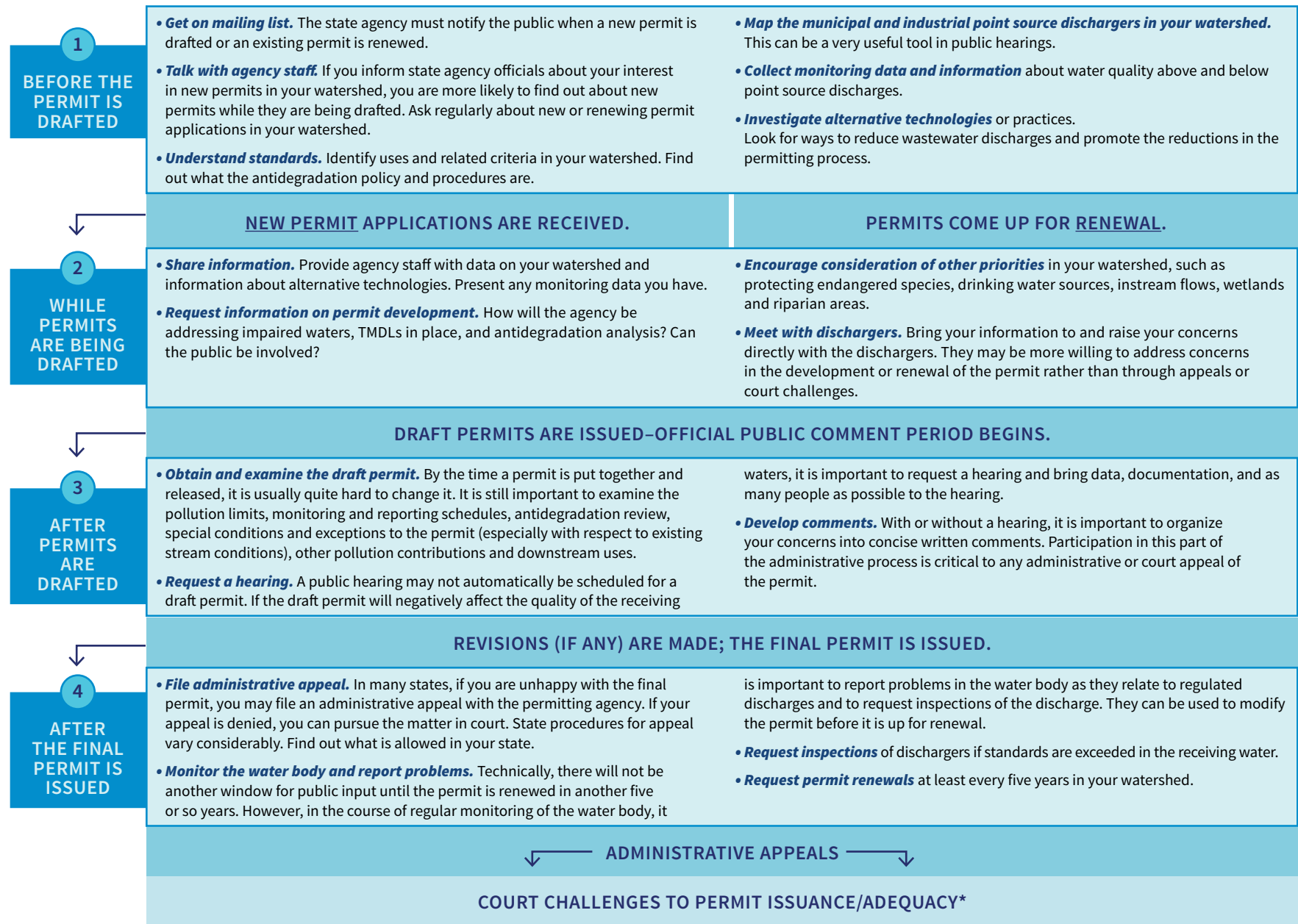
None of the exceptions are allowed, however if they would not meet technology-based limits or would violate water quality standards.<sup>112</sup>



## DISCHARGES CAUSING OR CONTRIBUTING TO STANDARDS VIOLATIONS

No new permit may be issued "to a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards."<sup>113</sup>

## PUBLIC INVOLVEMENT IN THE PERMIT PROCESS



\* Court challenges of agency permit decisions address permit adequacy and are the last stop for concerns about a permit. These challenges are different from citizen suits, which are enforcement actions to address permit CWA violations and EPA inaction (p. 136).

## Where can I find all this information?

Once you find out about an application for a permit or a draft permit that you want to review, you will need to request information from the permitting authority. In most states, the permitting authority is the state water quality agency. Where EPA issues NPDES permits (District of Columbia, Massachusetts, New Hampshire, New Mexico, U.S. territories except Virgin Islands, and tribal lands except in Maine), you would contact your regional EPA office. Most states publish integrated reports, 303(d) lists, and water quality standards online. EPA provides access to DMRs through their ECHO website. For general permits, there may not be much information available online at all, so ask the agency for information such as how it monitors the impacts of the general permit activities.

You may also be able to access detailed permit information from the state agency permit database online. You can request information by email or by phone. Some states will send you copies of the documents. In some cases, you will need to make an appointment to go to the appropriate agency office and review the full permit file. Most states have established a process for requesting public information that may be fairly simple. In any case, you may also use the federal “Freedom of Information Act” to obtain important documents (see sidebar). Be sure to ask how much the copies they make for you will cost and, if you are a nonprofit organization, mention it.

## When is it important to ask for a public hearing?

The Clean Water Act guarantees you the right to a public hearing before a NPDES permit is issued (CWA, section 402(a)(1)). It is not likely that agencies will hold a public hearing on a permit unless someone requests one, however. Some states require a certain number of requests before they will grant a hearing. The occurrence of NPDES permit public hearings varies from state to state.

Detailed information on the permit may be provided at a public hearing. Sometimes questions will be answered for the public. It is important to remember though that these are truly “hearings”—state agency representatives generally listen, but do not respond to comments. It can also be a valuable forum for making your concerns known to people other than your state agency, such as other interested individuals, decision-makers and members of the press. It can also be valuable to request a public hearing because people may be more likely to attend a hearing than write comments. Some states now hold virtual hearings, making it much easier for more people to participate. Because general permits cover so many activities, it may be particularly important to ask for a public hearing.

Many states hold hearings during the comment period. If any issues arise at the hearing, the comment period should allow sufficient time for the public to respond.

**Remember:** The Clean Water Act **requires** public involvement in many important decisions (CWA, Section 101(e)). No question is too obvious; no statement is too simple. It is critical that more people become involved in the review of CWA permitting and rulemaking.



### GETTING THE DOCUMENTS YOU NEED

All of the materials discussed in Part 2 are supposed to be made available to the public. States vary considerably in the availability of this information online, and in their willingness to provide access to permits and their supporting documentation.

You have the right to review these documents. Your state may have open records laws or you may need to use the federal [Freedom of Information Act](#) to get the documents you need.



### NORTHERN NEW MEXICO

Land-based and Indigenous groups in New Mexico appeal an industrial stormwater NPDES permit to achieve historic regulatory and public participation requirements. [Link to story.](#)



### RAISING VOICES OF IMPACTED COMMUNITIES

Hearings are often held during the work day at a time when it is hard for many people to participate. It is extremely important for the agency to hear from community members who will be impacted the most by the proposed discharge(s). Virtual public hearings may be helping more people to engage, however, there are still many barriers to effective engagement. Work with impacted communities and your agency to reduce those barriers.

## TIPS FOR TESTIFYING AT PUBLIC HEARINGS

The Clean Water Act requires officials to solicit and consider public opinions before making decisions about permits, water quality standards, and many funding programs. In addition to inviting written comments, agencies often hold public hearings before making key decisions. Hearings are most often held when the issue at hand is particularly important or controversial. Most citizens rarely attend these hearings, believing that they are not qualified to comment on “technical issues.” Others regularly attend and speak out, but are frustrated that their efforts don’t seem to have an impact.

This is unfortunate because everyone’s views should count. Here are a few tips to help make sure that your comments at hearings make the most impact:

- 1 **Get information early.** Comment periods are short, so every day counts. Make sure you are on the email lists for the permits, programs, and issues you care about most.
- 2 **Do some homework.** Read the draft permit or proposed action carefully, including the fine print. Make a list of your questions and concerns, and prioritize them.
- 3 **Discuss your concerns.** Don’t wait until the hearing to discuss your concerns with officials. Call or meet with one or more of them early. They may put some or all of your concerns to rest. They will probably appreciate your effort to discuss concerns with them in advance.
- 4 **Develop written comments.** Well in advance of the hearing, begin developing some written comments. This will help you organize your thoughts about what you want to say. Your written comments can be detailed; in them, you can cover matters that would be too lengthy or technical to address in your oral comments.
- 5 **Find out the comment deadline.** The deadline for comments is usually a few days after the hearing. If it is, you may want to wait until after the hearing to finalize your written comments. It is likely you will obtain new information, develop new concerns, or come up with new ideas at the hearing.
- 6 **Get the word out.** A large turnout of concerned individuals gives more power to your arguments and shines the light of public concern on the issue.
- 7 **Ask questions.** Asking questions is often as—or more—effective than making statements. Many clean water decisions boil down to judgment calls. Asking questions about legal gray areas and areas of scientific uncertainty can help decision-makers decide either to seek more information or to err on the side of caution. When developing final written comments, turn the question into a statement of concern.
- 8 **Make it substantive.** As much as possible, base your comments on matters of fact, not opinion. Decision makers *may* consider your opinions, but they *have* to consider your facts. Reference specific portions of the law and regulations when possible, and cite sources of your information. This increases your credibility and gives decision makers the legal and technical grounds to do what you request.
- 9 **Mix it up.** It’s fine for some testimony to come from the heart and other testimony to come from the head. Encourage those who share your concerns to present heartfelt testimony about their love for the resource. Such testimonials, combined with factual and science-based testimonies, are a powerful combination.
- 10 **Boil it down.** Decide which points are essential to your case for the public hearing. Figure out how to express them as clearly and concisely as possible. State your concern and what you want. Remember that your audience is not just the agency officials present, but also the other members of the public. Avoid jargon that only the agency officials would understand.
- 11 **Spread it around.** Realize that you may only get two or three minutes to speak. If your essential points can’t possibly be made in a short time, find some friends and assign some of the points to them. This increases your effectiveness by getting more people involved and makes it more likely that all the essential points will be raised.
- 12 **Emphasize key points.** Some redundancy can be good. Consider summarizing your key points at the beginning or end of your statement. Don’t forget to tell them what you want them to do.
- 13 **Write it down.** Even if you are submitting written comments later, and even if you don’t intend to read your statement word for word, write down the basic comments you intend to make at the hearing. Separate the points by headings so they are easy to follow and refer back to. This strategy will help you organize your thoughts in advance, and will give you something to hand out at the hearing. Share your handouts on social media or reprint them in your newsletter.
- 14 **Submit your written comments on time.** If you decide to back up your spoken comments with more detailed written comments, make sure you get them in on time.

## What if I know of unpermitted point source discharges?

Individuals should be ever alert to unpermitted discharges in their watersheds. Some point source discharges remain undetected and unpermitted. In many rural (and even not-so-rural areas) “straight pipes” carry wastewater from individual homes directly into water bodies. And general permits cover so many activities without specific review of the discharges that a discharger may not submit the appropriate information to the agency to comply with the general permit.

Regular visual surveys of the rivers and streams in your watershed in wet and dry times of the year may reveal significant sources of pollution that can and should be quickly addressed. What otherwise might appear to be a stormwater discharge pipe, may discharge during dry times of the year if there is an unpermitted cross-connection from a home, business, or factory. Detecting unpermitted or “illicit” discharges is one of the minimum measures required by the municipal stormwater permits as described on [p. 96](#).

By bringing unpermitted discharges to the attention of your water quality agency, you can stop the discharge or force the discharger to obtain a permit and apply the necessary controls and treatment. In many watersheds, unpermitted discharges are a problem that can be solved through community awareness and information sharing. If not, they can be challenged through citizen suits ([p. 136](#)).

## What if the agency issues the permit regardless of my concerns?

You can appeal the issued permit—whether it is a general permit or an individual permit. However, you cannot appeal the individual authorizations under the general permit once it is issued. The steps to appeal vary from state to state. There may be a limited time window for your appeal, so be sure to ask the agency what the process is right away. If it appears likely that the permit is going to be issued in spite of your concerns, it wouldn’t hurt to ask about the appeal process even

before it happens. That way, you have time to prepare whatever documentation and support (technical or legal) that you might need for the process.

In many states, the appeal first goes through an administrative process, such as a hearing before an administrative law judge or the board that oversees the agency. If that process is unsuccessful, state court (or federal court when EPA issues the permit) is usually the next step in the process. In some states, the appeal goes directly to court. It is important to determine whether the permit is considered valid or suspended while an appeal is ongoing because there may be ways to avoid the construction of facilities or additional discharges that are the focus of the appeal.

## Is it possible to change the terms of an existing permit?

Once a permit is granted, it is tough to change it. However, permits can be reopened if facilities or regulations change or if new information on the adverse effects of a permitted discharge becomes available (see sidebar). If it is not possible to reopen the permit mid-cycle, continue to build your case for when the permit comes up for renewal.

Problems in the receiving stream should be documented and reported to the agency. If the water body is placed on the impaired waters list, and the discharge is contributing to the problems, the restoration plan (TMDL) for those problems must require changes to the permit ([p. 129](#)), and that requirement can result in early revisions to the permit as well.



### WRITING PUBLIC COMMENTS?

Get a copy of [The Art of Commenting, 2nd edition](#) from the Environmental Law Institute.



### GULF SOUTH

Unpermitted discharges into a waterbody constitute a violation of the Clean Water Act. [Link to story.](#)



### CAUSE FOR MODIFICATION OF PERMITS

Any NPDES permit (including a “general permit” that applies to many similar dischargers) may be reopened for modification

- 1 if there are significant alterations to the permitted facilities,
- 2 if new information about the effects of the permitted discharge (including cumulative effects) have become available, or
- 3 if any regulations upon which the permit was based have been changed or superseded.<sup>114</sup>

## What if conditions required in a permit are not implemented?

Failure to comply with permit requirements, or failure to report at the required times, are violations of the Clean Water Act subject to enforcement and fines (see below). Fines have been assessed when required activities have not been faithfully implemented.

Individuals can help identify violations by serving as an agency's eyes in the watershed. Be aware of permit conditions that require certain practices, and check periodically to make sure that they are being followed. If you see that a permit condition is not being met, document the problem and report it to your water quality agency. If necessary, individuals can also enforce permits through citizen suits ([p. 136](#)).

## How are NPDES permits enforced?

Permit enforcement actions can be triggered in a wide variety of circumstances. Some result from inspections, others from a review of the discharge monitoring reports submitted by an NPDES permittee, and still others from complaints filed by individuals or current or former employees.

Violations of NPDES permits can be enforced in three different ways: through

- 1 an agency's civil enforcement actions (including administrative penalties),
- 2 criminal prosecution (including criminal penalties, and
- 3 citizen suits.

## Civil Enforcement

Where the EPA has delegated the NPDES permitting program to a state environmental agency, it has also delegated primary civil enforcement responsibilities. When permits are violated, agencies base decisions on whether and how to pursue enforcement action on at least three factors: the violator's culpability, the extent of environmental harm caused by the violation, and the economic benefit the violator gained through its failure to comply with the law.

When a state agency documents a violation, it is supposed to issue a notice of noncompliance (NON) or notice of violation (NOV) to the violator. The most common civil enforcement action is the issuance of a civil penalty. In 2022, the Clean Water Act provides for penalties of up to \$59,973<sup>115</sup> per NPDES violation per day. These and many other penalties are adjusted for inflation each year as required by the Federal Civil Penalties Inflation Adjustment Improvements Act of 2015.<sup>116</sup> In addition to imposing penalties, an enforcement authority may also:

- require immediate actions to correct the violation;
- require documentation of future compliance;
- order facility operators to cease operations until problems are fully addressed;
- revoke the discharger's permit; or
- refuse to renew a permit.

## Criminal Prosecution

The Clean Water Act and state water quality statutes also contain criminal penalties for certain violations. Criminal prosecution is reserved for severe violations, but it is being used increasingly throughout the country. Criminal violations are prosecuted by United States attorneys for

NPDES permits issued by EPA, or state attorneys general or local district attorneys for NPDES permits issued by states or local agencies in the jurisdiction in which the violation occurred.

In determining whether to prosecute criminally, most investigators and prosecutors look to whether the violation was committed intentionally (a "knowing" violation) or negligently, and whether the violation resulted in damage to the environment. However, a violation need not be intentional to be subject to criminal prosecution. Nor must the extent of environmental damage necessarily be proven.

The most common criminal cases involve discharging without permits, bypassing pollution control equipment, or falsifying discharge monitoring reports submitted to the state agencies or the EPA. Corporations as well as individuals may be criminally prosecuted. Criminal penalties may include substantial monetary fines as well as significant terms of imprisonment for individuals found guilty.

## Citizen Suits

The Clean Water Act also grants individuals, who, by the way, do NOT have to be citizens, the right to take independent enforcement actions for permit violations. **Any person or entity** that is or may be adversely affected by a permit violation may bring suit against the entity causing it ([more detail on p. 136](#)).

## ACTION CHECKLIST NPDES POLLUTION DISCHARGE PERMITS

- Request a list of all permits (individual and general) in your area of interest.
- Choose the permits you wish to evaluate and ask for the permit, fact sheets, antidegradation analysis (if it isn't in the fact sheet), discharge monitoring reports (for individual permits), and any notes from the file.
- Gather information on water quality standards (uses and criteria), current conditions in your watershed (i.e., is it listed as threatened or impaired?), and antidegradation policy and procedures for your state.
- Get on the email list or mailing list for public notices and hearings associated with new and renewing permits. Limit these announcements to your watershed if possible. Ask when each permit in your basin is due for renewal.
- Find out how frequently your water quality agency verifies Discharge Monitoring Reports.
- Find out how your agency monitors and enforces any required pollution control plans that are part of the permit.
- Investigate pollution prevention alternatives that should be considered when permits are due for renewal.
- Find out what types of general permits have been developed by your state agency and how many of each type have been issued in your watershed. Get a list. Ask how these general permits are issued, monitored, and enforced.
- Find out whether and what enforcement actions have been taken against permit violators in your basin.
- Determine how to challenge a permit after it is issued. Is it an administrative appeal to the state agency or is it a court challenge?



### PENALTIES FOR NPDES VIOLATIONS

Congress passed the [\*Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015\*](#) which requires annual updates to civil penalties that can be found at 40 C.F.R. § 19.4. EPA summarizes criminal penalties for water pollution violations [here](#).

# PROTECTING WETLANDS, STREAMS, AND LAKES FROM DREDGING AND FILLING (SECTION 404)

If you are concerned about development activities affecting wetlands, streams, or lakes in your area, you need to be familiar with Section 404 of the Clean Water Act, which regulates point source discharges associated with dredging and filling. Section 404 of the CWA prohibits the discharge of fill material without a permit.<sup>117</sup> This section explains when a Section 404 permit is required, what it requires, and how you can influence the permitting process.

## When is a Section 404 permit required?

Under Section 404, anyone who proposes an activity that would result in a point source discharge of dredged or fill material into waters of the United States is required to apply for a permit from the U.S. Army Corps of Engineers (Corps).

Any activity that causes an appreciable impact by moving even a small amount of earth (discharging) into a water body (such as mud from the wheels of construction vehicles) is regulated under Section 404.

## Who issues permits and leads enforcement of Section 404?

**In most states**, the Army Corps of Engineers (Corps) is the lead agency for issuing and enforcing Section 404 permits owing to its historical jurisdiction over navigable waters.<sup>118</sup> In Michigan, New Jersey, and Florida, the state has assumed the 404 permitting authority. The EPA also plays an advisory and oversight role.

## What is considered when issuing a Section 404 permit?

The Clean Water Act, in Section 404(b)(1), requires that guidelines be developed to protect waters from discharge of dredged and fill materials. The EPA developed guidelines—referred to as 404(b)(1) Guidelines—and codified them into regulation.<sup>119</sup> They are legally required instructions for the Corps or delegated state agency to use when issuing 404 permits.

The regulations state in the purpose and policy section: “Fundamental to the Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.”<sup>120</sup>

No discharge of dredged and fill material shall be permitted if it

- causes or contributes to violations of any applicable State water quality standard<sup>121</sup>
- violates any applicable toxic effluent standard or prohibition<sup>122</sup>
- jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act<sup>123</sup>
- violates any requirement to protect any marine sanctuary<sup>124</sup>
- causes or contributes to significant degradation of the waters of the United States<sup>125</sup>



## STATE OR TRIBAL AUTHORITY FOR SECTION 404 ACTIVITIES

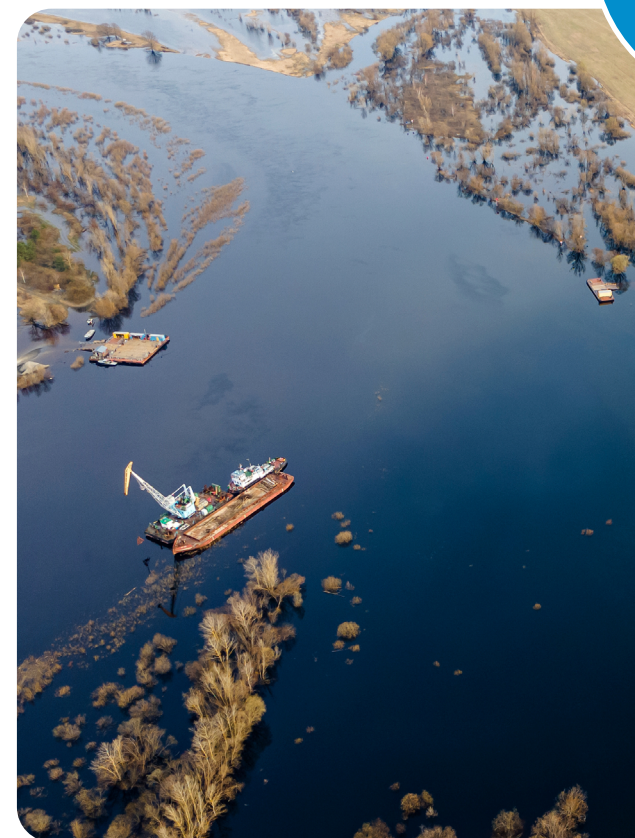
It is possible for states or tribes to take over some of the responsibility for administering the Section 404 program, whether through ***assumption of the program***, general permits, or some other agreements.

Issues of concern regarding state or tribal administration include:

- whether and how Section 401 water quality certification is required (triggered by the federal 404 permit);
- individual access to challenges in federal court;
- public notice on individual permits; and
- loss of Endangered Species Act consultation.

Michigan (1984), New Jersey (1994), and Florida (2020) have taken over parts of the Section 404 program. Visit this ***interactive map*** to find out which other states and tribes have expressed serious interest.





The Section 404 permit process requires applicants to demonstrate that they have followed certain steps below in a particular order, known as “sequencing”:

- **AVOID** the impact: First, applicants must identify and evaluate **practicable alternatives**. If the proposed activity does not absolutely have to be conducted in or near the water (i.e., is not “**water-dependent**”), the permitting agency is supposed to presume that there is a practicable alternative that would have a less adverse impact on the aquatic ecosystem (40 C.F.R. § 230.10(a)(3)).
- **MINIMIZE** the impact: Second, if there is no alternative site or method for the activity, the applicant is required to demonstrate how it can occur with minimal impact to the water body by specifying particular practices that take the location, nature, and dispersion of the discharge into account.<sup>126</sup>
- **MITIGATE** any impact: Third, only after the applicant and the Corps determine that the impact is unavoidable and will be minimized should plans for mitigation be discussed.

If an activity is regulated under Section 404, then a permit is required before the activity can proceed. Because the Section 404 permit is federal, it triggers the need for state or tribal water quality certification ([Section 401, p. 119](#)) and, in some cases, compliance with the Endangered Species Act ([p. 157](#)). The trigger for additional review can be the most powerful aspect of Section 404 administered by the Corps.

In order for the protections of Section 404 to work, however, these activities need to be permitted. For this reason, to prevent unpermitted discharges, individuals need to keep a watchful eye out for activities that will discharge dredged or fill material into a water body.

## What are practicable alternatives?

A critical component of the Corps’ review under 404(b) (1) Guidelines is the alternatives analysis. Practicable alternatives are those that achieve the same basic project purpose, are not unreasonably costly (though they may produce less return on investment), are owned by the applicant or are available during permitting, and are feasible.<sup>127</sup>

Some examples of practicable alternatives to a development project are:

- Relocating the project to an environmentally-preferable site.
- Reconfiguring the footprint of the project or increasing the density of development.
- Reducing the scale or number of planned residential or commercial units.

The Guidelines require a finding of noncompliance when there is a practicable alternative to the proposed discharge that would have a **less adverse** effect on the aquatic ecosystem.<sup>128</sup> The Guidelines state that “practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise.”<sup>129</sup>

## Who has the burden of proof to evaluate alternatives?

The law places the burden of proof squarely on a permit applicant to demonstrate that any particular dredge or fill discharge into any waters of the U.S. is (a) unavoidable and (b) the least environmentally-damaging practicable alternative to achieve the basic purpose of the project.<sup>130</sup>



## SPECIAL AQUATIC SITES

“Special aquatic sites” are areas with special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. They include:

- sanctuaries and refuges;
- wetlands;
- mud flats;
- vegetated shallows;
- coral reefs; and
- riffle and pool complexes.<sup>134</sup>

“From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines.”<sup>135</sup>

## Does a proposed project need to be in the public interest?

The Corps must evaluate whether a proposed project “would be contrary to the public interest.” This public interest review demands “a careful weighing of all those factors which become relevant in each particular case” regarding the foreseeable benefits and the foreseeable detriments. In addition, the Corps must consider “[a]ll factors which may be relevant to the proposal,” including “the cumulative effects” of the project.<sup>131</sup>

## What types of permits are available under Section 404?

Section 404 regulations allow the issuance of **individual and general permits**. An individual permit is usually required only when an activity is expected to have “significant” impacts. Otherwise, for discharges expected to have minimal adverse effects, the Corps grants general permits. General permits are developed for specific activities where:

- the activities are similar in nature and in their impact on water quality and on the aquatic environment, and
- the activities will have only minimal adverse effects on water quality and on the aquatic environment separately or cumulatively.<sup>132</sup>

They may be issued on a nationwide, statewide, or regional basis.

Even a general permit must ensure an analysis of practicable alternatives and the selection of the one that would have the least adverse impact. In addition, a general permit should not allow any activity that

- a. will cause or contribute to a violation of state water quality standards or a significant degradation of waters or
- b. would jeopardize threatened or endangered species or cause adverse modification to their critical habitat.<sup>133</sup>

General “nationwide” permits for dredge and fill activity, once developed, are typically allowed to cover activities with little or no review of site-specific considerations and no public notice. Though each activity may be small, the cumulative impacts of “small” disturbances permitted under the general permits system have been severe in many watersheds. For this reason, it is important to make sure that the conditions of general permits are adequately protective from the start. State or tribal agencies may exercise their right to review nationwide and individual permits for compliance with water quality standards and other laws ([Section 401, p. 119](#)) and to impose permit conditions to ensure they will comply.



## Does a 404 permit require evaluation of cumulative dredge and fill impacts?

Yes, at least in theory. The Section 404(b)(1) guidelines state that cumulative effects “should be predicted to the extent reasonable and practical” by collecting information from other sources and considering it during the evaluation of individual permit applications, the issuance of general permits, and as part of the monitoring and enforcement of existing permits.<sup>136</sup>

33 C.F.R. § 320.4(a)(1) states in part:

*All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.*

In practice, however, meaningful evaluation of cumulative impacts seldom, if ever, takes place. Individuals should insist on cumulative water quality impact evaluations in the Section 404 permit process.

## Are there exemptions to Section 404 permits?

The Clean Water Act and the implementing regulations exempt many activities from Section 404 requirements. These activities include ongoing farming, ranching and forestry practices, maintenance activities, construction or maintenance of farm or stock ponds or irrigation ditches, construction of temporary sediment basins on a construction site, and construction or maintenance of farm, forest, or temporary roads.<sup>137</sup>

These practices do require a permit, however, **IF** the dredge or fill material contains specific toxic pollutants, or **IF** dredging or filling will create a new use for the water that will impair the flow or circulation or reduce the reach of the waters of the United States.<sup>138</sup>

If traditional agricultural activities do require a permit, they are most likely covered by Nationwide Permit 40, which permits activities including the installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches constructed in waters of the U.S.; and similar activities, provided the permittee complies with the terms and conditions in the permit.

## How can damage be mitigated in the Section 404 process?

Mitigation in the Section 404 context means to offset the loss of an aquatic site. Mitigation can include:

- preservation: purchasing or otherwise protecting an existing high-quality wetland;
- enhancement: making an existing wetland “better”;
- restoration: restoring a wetland, for instance, by taking out old dikes or levees; or
- creation: making a wetland where there never had been one before.

Preservation and enhancement of wetlands can be important in the context of a larger plan, but if, in choosing one of these forms of mitigation, a wetland loss is allowed, the total wetland acreage in your watershed is reduced. The creation of a new wetland is considered the least desirable form of mitigation because it is usually difficult or impossible to create the same values that are being lost.



## NATIONWIDE PERMITS

The Corps issues “Nationwide Permits”—general permits that cover numerous categories of activities, including but not limited to the following:

- Outfall Structures and Maintenance
- Oil and Gas Structures
- Bank Stabilization
- Utility Line Work
- Linear Transportation Projects
- Hydropower Projects
- Minor Dredging
- Surface Coal Mining
- Headwaters and Isolated Waters Discharges
- Single-Family Housing
- Maintenance of Existing Flood Control Projects
- Maintenance Dredging of Existing Basins
- Boat Ramps
- Cleanup of Hazardous and Toxic Waste
- Residential, Commercial, and Institutional Developments
- Mining (aggregate, hard rock)

These activities are permitted as long as they comply with the specific criteria developed for each broad category. Regulations for the nationwide permit program can be found at 33 C.F.R. part 330.



## EVALUATE CUMULATIVE IMPACTS

“Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.”<sup>140</sup>

## What state and tribal oversight of Section 404 permits does the Clean Water Act provide?

As discussed above, Section 401 ([p. 119](#)) of the Clean Water Act authorizes states and tribes to review impacts of all federal permits or licenses, including Section 404 permits, within their boundaries. Under Section 401, states and tribes can review all activities that require federal permits or licenses for compliance with applicable state or tribal law, including water quality standards. They can approve, condition, or deny certification of a Section 404 permit (including general nationwide permits). By requiring this review, Section 401 of the Act offers veto authority to states and tribes on any Section 404 permit. If the state or tribe denies the water quality certification, the Section 404 permit cannot be issued.

### What is the EPA's role?

The EPA shares the duty of enforcing Section 404 with the Corps (and the states that have taken over parts of the program). It develops and interprets environmental criteria used in evaluating permit applications, oversees state and tribal authority, identifies activities that are exempt from regulation, and reviews and makes comments on individual permit applications.

Section 404(c) of the Clean Water Act authorizes the EPA to override a Corps decision based on “unacceptable adverse effect” on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. If the EPA believes unacceptable adverse effects will occur, it informs the Corps that it may veto the permit in question. The EPA has issued very few vetoes.

## Do other agencies oversee dredging or filling operations?

The granting of a Section 404 permit (including a general permit) is a “federal action” for purposes of the Endangered Species Act. Thus, if a federally listed threatened or endangered species may be affected, a Section 404 permit request triggers the need for a consultation with the relevant agency (either NOAA Fisheries or U.S. Fish and Wildlife Service) under Section 7 of the Endangered Species Act, even on private land. State wildlife agencies also may comment on permit applications.

## Does the Clean Water Act provide grant money to the states for wetlands protection?

The [Wetlands Program Development Grants](#) provide money to states, tribes, local governments, interstate agencies, and inter-tribal consortia to help develop and improve comprehensive wetland programs through research, experiments, training, demonstrations, and similar activities. These grants focus on investment in the [Core Elements Framework](#), which are the actions and activities that EPA, with the help of many states and tribes, has compiled to represent an effective wetland program (see sidebar). Section 319 money can also be applied to improve wetland protection ([p. 140](#)). Look for ways that you can influence the use of these funds to improve wetland functions in your watershed.



### MITIGATION BANKING

Mitigation banking typically involves offsite wetland restoration, creation, enhancement, and in exceptional circumstances, preservation when such compensation cannot be achieved at the development site or would not be as environmentally beneficial. It typically involves the consolidation of small, fragmented wetland mitigation projects into one large contiguous site. Units of restored, created, enhanced, or preserved wetlands are expressed as “credits,” which may subsequently be withdrawn to offset “debits” incurred at a project development site.



### CORE ELEMENTS OF AN EFFECTIVE STATE AND TRIBAL WETLAND PROGRAM<sup>141</sup>

These four core elements are:

- 1 [Monitoring and assessment](#)
- 2 [Voluntary restoration and protection](#)
- 3 [Regulatory approaches including CWA 401 certification](#)
- 4 [Wetland-specific water quality standards](#)

# GETTING THE DREDGE AND FILL PERMITS (SECTION 404) RIGHT

## What is the public's role?

The public needs to play an active role in the Section 404 permitting process. For individual permits, the public can

- comment on permits,
- defend important wetland values,
- offer alternatives to the regulators and permit applicants on how wetland impacts can be avoided or minimized, and
- insist on sufficient mitigation if any destruction of wetlands will occur.

However, since most Section 404 activities fall under general permits, there is little or no opportunity for public participation in most site-specific permit decisions. For this reason, the public must be very actively involved when general and individual permits are developed or renewed every five years (in theory). If significant adverse effects on water quality or the aquatic environment may result from any proposed activity, the public can request that the Corps, the EPA, or the state require an individual Section 404 permit rather than a general nationwide permit.

## What is the official process for public input?

For individual permits, members of the public can participate in the permit process. This process includes the following steps:<sup>142</sup>

- **Public Notice.** The Corps issues this notice within 15 days of receiving a complete individual permit application. The notice provides detail about the proposed dredging or filling activity, its location, and its potential environmental impact. The notice invites comment within a specified time.

Individuals can call the regional office of the Corps to get on the email or mailing list for permit notices.

- **Public Comment.** The comment period is usually open for 15 to 30 days. Comments are reviewed by the Corps.
- **Public Hearing.** A hearing is not typically held, but members of the public can ask the Corps to conduct one. Members of the public can also request a public hearing of the state or tribal water quality agency to review the same project under the Section 401 process.
- **Permit Evaluation.** The Corps evaluates the permit, based on facts in the record.
- **Environmental Assessment and Statement of Finding.** The Corps explains its decision on whether to grant or deny the permit.
- **Notification.** The Corps is required to notify potentially interested parties such as adjacent landowners, but often does not.

## What can I do to ensure that mitigation requirements are strong enough?

Studies show that the record for mitigation success is dismal. Mitigation projects have suffered from ill-conceived plans, inadequate maintenance, and insufficient funding. In some cases, the projects have never actually happened or the mitigation site has been destroyed by subsequent development.



## BLUE CARBON – PROTECTING COASTAL WETLANDS FOR CARBON SEQUESTRATION

*Blue Carbon Initiative*  
*NOAA*

To prevent such failures, get involved in the negotiations for mitigation requirements, and insist on the following elements to ensure a good mitigation project:

- a comprehensive grading, planting, and maintenance plan, including long-term maintenance;
- on-site mitigation that is adjacent to or near the impacted wetland;
- a site that has the conditions (wetland soils and appropriate hydrology) necessary for the project to succeed;
- an easement or other protection of the property so that it cannot become a site for future development;
- assurance of adequate water rights (where applicable) to maintain the mitigation site;
- a long-term monitoring and reporting plan with measurable performance standards; and
- bonding or some other assurance of funding for long-term maintenance.

Urge the Corps to require the permittee to replace all the functions, values, and benefits that the soon-to-be impacted wetland provides to the community. It is not enough to replace just the lost acreage. For example, a duck pond has different functions and values than a bog. In practice, to replace the functions and values fully, the permittee should restore more acres than are proposed for impact. After all, the chances of mitigation failure are high, and even if the mitigation is successful, it may take decades before the new site is fully functional. A good tactic is to make sure the developer cannot proceed to new stages of a development project (grading, laying the foundation, occupancy) until the various stages of the mitigation are complete. Make sure this is a condition of the permit.

## How are 404 permits enforced?

Based on a [Memorandum of Agreement](#) between the Corps and the EPA, the Corps will act as the lead enforcement agency for all violations of Corps-issued permits and for most unpermitted discharge violations. The EPA will act as the lead enforcement agency when an unpermitted activity involves a repeat violator or a flagrant violation, when EPA requests enforcement over a particular case or class of cases, or when the Corps recommends that an EPA administrative penalty action may be warranted.

The lead enforcement agency shall determine, based on its authority, the appropriate enforcement response taking into consideration any views provided by the other agency. An appropriate enforcement response may include an administrative order, administrative penalty complaint, a civil or criminal judicial referral, or other appropriate formal enforcement response.

Individuals can play an important role by identifying projects that are not complying with their Section 404 permit. Document adverse impacts or violations of Section 401 conditions and notify the Corps, your regional EPA office, and the state or tribal water quality agency.

In addition, individuals can sue a project operator for a lack of a Section 404 permit when it is required. It can be interpreted as a discharge without a permit.



## ACTION CHECKLIST – DREDGE AND FILL PERMITS

- Get on the list for public notice of dredge and fill permits in your basin. A Section 404 Permit Notice provides the name of the applicant, a summary of the project, maps, mitigation information, deadlines for comments, and the Corps project manager whom you may contact for more information.
- When an individual Section 404 permit notice comes to you that you are interested in:
  - Get a copy of the permit.
  - If you have concerns and plan to submit comments, call or email the Corps project manager to get a better understanding of the proposal and to express your concerns. Project managers are often in the field; leave a detailed voicemail message to keep the process moving.
  - You may call or email the consultant listed on the public notice and ask for a site visit. They can also provide you with additional information such as wetland delineation maps and/or upland alternatives analysis.
  - Write a letter to describe your concerns. How does the project impact wetlands, streams, water quality, flooding, erosion, fish, and wildlife? If you are aware of upland alternatives, mention them. Encourage avoidance and minimization of the impacts. Include the permit application number so your comments are applied to the appropriate project.
  - Send copies of your letters to the U.S. Fish and Wildlife Service, NOAA Fisheries (if applicable), your state or tribal wildlife agency, your state or tribal water quality agency, and your local planning department. Coordinate your comments with fish and wildlife agencies for maximum effectiveness.
  - Be aware of deadlines. The official comment period only lasts 15–30 days.
- Ask your local Corps office for a list of general permit applications (nationwide, regional, statewide). Comment on individual impacts. Insist on individual permits when impacts are likely to be significant.
- When general Section 404 permits are developed or revised, participate actively. Raise concerns about cumulative impacts within specific general permits and across all general permit categories in your basin.
- Find out whether your state or tribe has specific wetland designated uses and water quality criteria. If not, ask state or tribal agency staff whether and how the state or tribal water quality standards apply to wetlands.
- Call your state or tribal water quality agency about Section 401 certification for all individual and general permits in your basin. Raise questions about potential violations of water quality standards, especially regarding implementation of the state's antidegradation policy. Are existing uses, high quality waters, or outstanding waters likely to be degraded by proposed permits?
- Find out how the filling of wetlands is factored into the development of TMDLs. Are dredge and fill projects considered sources of sediment? Are fill projects considered as changes to hydrology? Is planned future development (involving Section 404 permits) considered in the TMDL implementation process?
- Get to know your local Army Corps of Engineers staff.
- Ask questions of state or tribal agencies (water quality, natural resource, and fish and wildlife), university researchers, and consulting firms to find out how much of your watershed has been filled, altered, or disturbed by dredging and filling, and by what activities. Inform agencies about new projects in your basin.
- Be aware of state agencies that request money for developing a plan to assume the Section 404 program from the Corps. To assume the program, a state needs a feasibility study that reviews state laws for compliance.

# STATE AND TRIBAL OVERSIGHT OF FEDERAL PERMITS (SECTION 401)

In order to ensure that federal activities will not violate state or tribal laws, the Clean Water Act gives states, some tribes, some interstate agencies, and EPA (sometimes) the authority to veto or place conditions on activities requiring a federal license or permit that may result in a discharge to navigable waters.<sup>143</sup> If your state or tribe takes full advantage of this authority, known as “water quality certification” or “401 certification,” individuals, organizations, communities, and the public as a whole can get involved to protect and restore water quality and uses around and downstream from federally permitted activities.

## What activities require this water quality certification?

The water quality certification (Section 401) process is triggered by any federally licensed or permitted project that may discharge into waters of the United States. It is important to note that Section 401 applies to all federal licenses and permits, not just those under the Clean Water Act. In practice, this has been primarily applied to

- NPDES permits in states where the EPA issues the permits.
- Dredge and fill activities that require federal Section 404 permits issued by the Corps; and
- Federal Energy Regulatory Commission (FERC) licenses for hydropower facilities, dam construction and operation, and natural gas pipelines; and
- Rivers and Harbors Act Section 9 and 10 permits issued by the Corps.<sup>144</sup>

Notably, the section applies to federally licensed or permitted projects that “may result in any discharge to navigable waters.” In 2006, a unanimous Supreme Court<sup>145</sup> rejected the notion that “discharge” should be limited only to “discharge of pollutants.”<sup>146</sup> As a result,

water quality certification should apply to a wide range of projects that may impact surface waters, including but not limited to those projects that discharge pollutants from point sources. Nonetheless, some courts have concluded that Section 401 applies only to activities that include point source discharges.<sup>147</sup> Similarly, EPA has recently defined “discharge” under Section 401 to mean “discharge from a point source.”

As a result, attempts to apply Section 401 to activities such as grazing permits granted by the U.S. Forest Service and the Bureau of Land Management and permits granted by the U.S. Forest Service to construct and operate ski areas and drinking water reservoirs, have had mixed results.

## Who is authorized to grant Section 401 certification?

The entity that has jurisdiction (state, tribe, interstate agency, or EPA) where the discharge originates or will originate is responsible for exercising or waiving the Section 401 certification of federal licenses and permits. Here, we will refer mainly to state and tribal authority.<sup>148</sup>

## What is the process for the review of a project under Section 401?

Section 401 requires the project applicant provide the required certification to the federal permitting authority. As a result, the water quality certification review process generally begins with a certification request from the applicant to the state or tribe. This request must include the information required under EPA’s regulations, as well as the state or tribal law, and will typically include a description of the project and information on how the project will impact the environment. The receipt of the request starts the clock for the state or tribe’s review



## STATE AND TRIBAL WATER QUALITY CERTIFICATION OF FEDERAL PERMITS

“Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate...that any such discharge will comply with the applicable provisions...of this Act.”

“No license or permit shall be granted until the certification required...has been obtained or has been waived...”

“No license or permit shall be granted if certification has been denied by the State, interstate agency, or the Administrator, as the case may be.”



## WATER QUALITY CERTIFICATION IN FLUX

EPA drafted a [new rule](#) in 2022 that is not finalized as of publication. Even as these implementing regulations change, the underlying statute is still in place, therefore, pay particular attention to the statute references in this section.

under Section 401. The certifying authority must act on a request within a “reasonable period of time.” What a reasonable period of time is will depend on the type of project and can range from as little as 60 days up to a year. Each state and tribe will have rules for how it will provide for public notice and comment on each request.

### What are the options for states and tribes do under Section 401?

When faced with a request for water quality certification, a certifying authority can:

- 1 certify the project;
- 2 certify the project with conditions necessary to comply with water quality standards (designated uses, water quality criteria, and antidegradation) and other laws;
- 3 deny certification; or
- 4 waive its certification authority.

If a state or tribe fails to act on an application for certification within the “reasonable period of time” allowed for its review, the application is automatically “waived.” This means that the permit can go ahead without the water quality certification. It is important for individuals and public interest groups to prevent “default” waivers from happening automatically because of state or tribal inaction on an application. **Ask your state water quality agency to notify you when water quality certification applications come in, and ask for a deadline for the certification decision. Mark your calendar and raise concerns if**



**no certification is drafted and released for public comments in a reasonable period of time (e.g., 30 or 60 days) before the deadline.**

When reviewing a project under Section 401, the state or tribe must review the potential impacts of the activity as a whole—including both operation and construction of a federally licensed or permitted project. Most often, states or tribes either grant certification or place conditions on the certification that require the applicant to take specific measures to ensure the project complies with state or tribal law. Depending on applicable water quality standards and other requirements, the water quality certification can establish a variety of different types of conditions. For example, a certification may establish a minimum flow schedule or flow storage,<sup>149</sup> or it can require fish passage or the creation of a recreational facility for enhanced access.<sup>150</sup> A federal agency may not amend or delete a certification condition. The conditions ultimately become conditions of the federal permit or license.<sup>151</sup>



### WAIVER OF 401 CERTIFICATION

“If the State, interstate agency, or Administrator, as the case may be, fails or refuses to act on a request for certification, within a reasonable period of time (which shall not exceed one year) after receipt of such request, the certification requirements of this subsection shall be waived with respect to such Federal application.”<sup>152</sup>



### INCLUDING ADAPTIVE MANAGEMENT AND REOPENERS IN 401 CONDITIONS

Until 2020, a certification could be issued with an adaptive management plan to meet water quality targets in the future, and it may also reserve the state or tribe’s authority to reopen the certification if it is determined that any such condition is necessary to ensure compliance. Rule changes in 2020 removed this type of condition. EPA drafted a new rule in 2022, that is not finalized as publication, that would reinstate it. Check [River Network’s website](#) for updates.



## Do states or tribes ever deny water quality certification?

A state or tribe may deny certification for a number of reasons. Obviously, if the certifying authority determines the project will violate the state or tribe's environmental laws it must deny the certification request. Certifying authorities may also deny the request if the applicant fails to provide the information the state or tribe needs to make a determination about the project's impact, and advocates can and often do challenge applications on the bases of their deficiencies or incompleteness.

## How does the water quality certification work for general permits (NPDES or dredge and fill)?

States and tribes are often required to review general permits that cover entire categories of activity. Once water quality certification is granted to a general permit, the certification applies to all entities who subsequently apply for and receive coverage from the general permit. States and tribes can certify, condition, deny, or waive Section 401 certification for a general permit (thus an entire category of activity), but not for each individual activity covered by the general permit.



## MONITORING FOR COMPLIANCE WITH THE TERMS OF WATER QUALITY CERTIFICATIONS

The Clean Water Act calls for the monitoring of provisions listed in water quality certifications:

“Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations,...standard of performance..., or prohibition, effluent standard, or pretreatment standard..., and with any other appropriate requirement of State law..., and shall become a condition on any Federal License or permit subject to the provisions of this section.”<sup>153</sup>



## SECTION 401 LEGAL DECISIONS

- Clarifying what constitutes a waiver  
[\*California State Water Res. Control Bd. v. FERC, 43 F.4th 920 \(9th Cir. 2022\)\*](#)
- Section 401 conditions protect instream flow  
U.S. Supreme Court: PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, 511 U.S. 700 (1994)
- Section 401 denied to prevent impacts of a new dam  
Oregon Appeals Court: City of Klamath Falls v. Environmental Quality Commission, 119 Or.App. 375, 851 P.2d 602 (1993)

### **Example of Section 401 Denial**

In 2019, the Oregon Department of Environmental Quality (DEQ) denied an application for certification for a proposed greenfield liquefied natural gas (LNG) export terminal and pipeline project in Coos Bay, Oregon, known as the Jordan Cove Project. In its over 200-page evaluation and denial of the certification, DEQ reasoned that Jordan Cove failed to show that construction and operation of the proposed project would comply with applicable Oregon water quality standards. Contrast this denial with states such as Texas or Louisiana which routinely approve water quality certifications for new fossil fuel infrastructure or other major projects despite their potential to impair water quality. DEQ's denial was made without prejudice, meaning that Jordan Cove was not barred from re-applying for a certification. The project never re-applied for a water quality certification, but it was nonetheless granted federal approval to operate. Jordan Cove's failure to secure a water quality certification (and other necessary permits) represented severe blows in subsequent legal challenges to federal approval of the project, however, led to the proposed project's ultimate demise. This example outlines just how integral water quality certifications are to the approval of federally permitted projects, and when denied, can take down a proposed project entirely.

# GETTING THE WATER QUALITY CERTIFICATIONS RIGHT

## When water quality conditions are placed on a permit, how are they monitored and enforced?

Any terms or conditions included in a water quality certification become conditions of the federal permit. This includes any monitoring and reporting requirements the certifying authority includes to ensure the condition are met. For example, instream flow requirements found in most certifications for relicensing hydropower dams require continuous monitoring and evaluation.

The federal agency issuing the license or permit can enforce the conditions of water quality certification. The Section 401 conditions are also enforceable by citizen suits.<sup>154</sup> For example, if Tacoma City Light does not maintain the instream flows ordered by the State of Washington and affirmed by the U.S. Supreme Court in 1994.<sup>155</sup> individuals can sue the utility to force compliance with those conditions.

## What if there is evidence that a water quality certification isn't going to assure protection of water quality standards?

If the certifying authority issues a certification despite evidence that the project will violate water quality standards or other requirements of the state or tribe's law, the public must often first challenge the certification through the state administrative review process. The next step is likely state court. The public can take these steps to add or improve the conditions or to have the certification revoked.

Consultation with a lawyer will help challengers to a certification determine the appropriate forum for their challenge, because in some instances (e.g.,

some projects regulated under the Federal Power Act or Sections 3 and 7 of the Natural Gas Act, and in certain circuits), water quality certifications might be challenged directly in a federal appellate court, preempting review procedures available under state law.

The public may be able to stop the activity (because the permit is not valid without the certification) until the applicant provides reasonable assurance that the facility or activity will comply with state or tribal law.

## How can I tap into the water quality certification process?

**Start by notifying your state or tribal water quality agency that you are interested in Section 401 certifications in some or all of the jurisdictional waters.**

Many of the specific provisions for public involvement vary by state or tribal authority. The Clean Water Act requires that states and tribes establish procedures for public notice for all Section 401 certifications and public hearings for "specific applications".<sup>156</sup>

**Thus, you must ask your state or tribal agency or look at the rules implementing Section 401 to determine the relevant procedures for public notice and hearings.**

## What should I do if conditions are violated?

**Document the violations of the conditions and the water quality impacts.** You then have a couple options. First, you can submit a complaint to the federal agency that issued the permit, the state or tribal agency that issued the certification, and the permittee. Send a copy of your complaint to your EPA regional office. If there is no response, or if the response is inadequate, consider filing a 60-day notice of intent to sue. The second option is to start off with the 60-day notice. The Clean Water Act citizen suit provision gives you the right to sue the permit holder to enforce Section 401 conditions.<sup>157</sup> [\(p. 136\).](#)



## PUBLIC INVOLVEMENT REQUIREMENTS IN THE SECTION 401 CERTIFICATION PROCESS

The state or tribal water quality agency must provide public notice for all Section 401 applications:

"Such State or interstate agency shall establish procedures for public notice in the case of all applications for certification by it and, to the extent it deems appropriate, procedures for public hearings in connection with specific applications."<sup>158</sup>



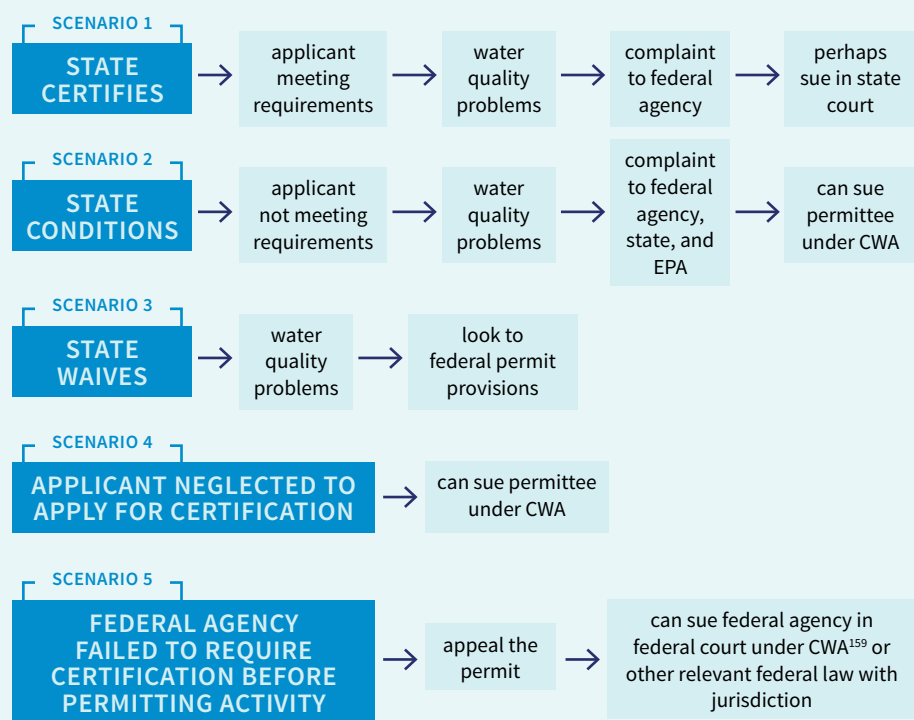
## CASE LAW ON INDIVIDUAL ENFORCEMENT OF WATER QUALITY CERTIFICATION

- Public can file suit when a proposed activity fails to obtain a Section 401 certification. (*Oregon Nat. Desert Ass'n v. Dombeck*, 172 F.3d 1092, 1095 (9th Cir. 1998); *Alabama Rivers Alliance v. FERC*, 325 F.3d 290 (D.C.Cir. 2003)).
- Public can file suit to enforce Section 401 certification terms and conditions. (*Deschutes River All. v. Portland Gen. Elec. Co.*, 249 F. Supp. 3d 1182, 1194 (D. Or. 2017); *Friends of Merrymeeting Bay v. Hydro Kennebec, LLC*, 759 F.3d 30 (1st Cir. 2014)).
- Although Section 401 applies to "any discharge," some courts have limited what activities require Section 401 certifications. (*Oregon Nat. Desert Ass'n v. U.S. Forest Serv.*, 550 F.3d 778, 779 (9th Cir. 2008)).
- A change in the quantity of discharge may trigger the need for a Section 401 certification. (*Alabama Rivers Alliance v. FERC*, 325 F.3d 290 (D.C.Cir. 2003)).
- Section 401 are required only in the state where the discharge "originates"; not upstream from a dam (*National Wildlife Federation v. FERC*, 912 F.2d 1471 (D.C.Cir. 1990)).

### What should I do if water quality problems arise after the Section 401 certificate is waived?

Unfortunately, this is a much trickier situation. Because the water quality certification is considered a “discretionary duty” for your state or any other certifying agency, individuals may not use the CWA to sue the certifying agency for waiving their right to make sure that all activities occurring within their jurisdiction—that require a federal license or permit—comply with water quality standards or other state and tribal laws. Because states and tribes have individual regulations for implementing Section 401, there may be some states or tribes that allow for individual appeal when a Section 401 certification is intentionally or automatically waived. Otherwise, you would need to focus on the provisions of the federal permit that was issued to see whether it protects water quality and you have an avenue to address the problems through that program.

#### HOW AND WHEN TO ENFORCE SECTION 401 CERTIFICATIONS



### ACTION CHECKLIST - STATE AND TRIBAL WATER QUALITY CERTIFICATION

- Get on your state or tribe’s email or mailing list for public notices of proposed water quality certifications in your basin.
- Find out how many Section 401 certifications your state or tribe has issued in the last year. Review a few to see what kinds of practices they have required and approved. In particular, find out whether and how your state or tribe conditions and certifies general permits from the Army Corps of Engineers for dredge and fill activity or from EPA if they issue NPDES permits in your state.
- If draft Section 401 certifications do not address your concerns about a proposed activity, submit comments to your state agency.
- If completed Section 401 certifications do not address your concerns, and permitted activities are causing water quality problems, consider taking the state agency to state court for inadequate conditions. If the Section 401 certification is good, but the permittee is not abiding by the conditions, discuss your concerns with your state or tribal agency, and consider filing a 60-day notice of intent to sue the permittee for noncompliance<sup>160</sup>.
- Contact the federal agencies that grant permits and licenses to identify current and proposed activities in your basin that require water quality certification.
  - For instance, if development of wetlands or construction in water bodies is an issue in your area, contact the Army Corps of Engineers.
  - If new dams are proposed or existing ones are up for relicensing, or oil and gas development is occurring, contact the Federal Energy Regulatory Commission.

When licenses or permits are up for renewal, check with the state or tribe to find out whether permittees are applying for water quality certification. Urge your state or tribe to fully exercise its privilege of water quality certification when applications are being submitted. If no certification application is submitted to the state or tribe, and the permit is issued, you should evaluate the citizen enforcement opportunities against the permittee for failing to obtain a Section 401 certification<sup>161</sup> and against the federal permitting agency for failing to require a Section 401 certificate.

# IDENTIFYING PROBLEMS AND RESTORING WATER QUALITY (SECTION 303(d) AND TMDLS)

One of the Clean Water Act’s overarching goals is to restore the integrity of the nation’s waters. To achieve this goal, the CWA spells out a simple two-step process:

1. identify the problems in each water body, and
2. develop a plan to correct the problems and restore the water body’s integrity.

## STEP 1 – IDENTIFYING THREATENED AND IMPAIRED WATERS

The Clean Water Act requires each state to list its polluted water bodies and to set priorities for cleaning them up. Water bodies qualify for the “impaired waters list” when they are too polluted or otherwise degraded to support their designated and existing uses. The impaired waters list is also called the 303(d) list, named after the section in the CWA that requires it. The states submit their lists to the EPA every two years.

### What is a threatened or impaired water?;

Any water body that does not meet or is not expected to meet the state’s water quality standards after full implementation of basic permits should be considered threatened or impaired and placed on the [Impaired Waters List](#). This list includes waters that fail to support water body uses (see sidebar), fail to meet any one of their applicable criteria —whether narrative or numeric,

chemical, physical, or biological—and those that fail to meet antidegradation requirements<sup>162</sup>. For example, a water body that appears to meet all its numeric chemical criteria at all times (such as the criteria for dissolved oxygen, pH, and various common pollutants) but doesn’t meet its narrative biological criteria (such as maintaining a healthy habitat or biological communities sufficient to support native aquatic life and wildlife) should be listed as impaired.

If it can be proven that an activity that is planned or ongoing will violate water quality standards, any waters affected by that activity should be listed as threatened.<sup>163</sup>

Neither the cause of a water quality problem nor its solutions need to be identified for a water body to be listed. For example, waters in which one or more species are in rapid decline should be listed, even if the specific reason(s) for their decline is not yet known. In fact, one of the greatest values of the Section 303(d) listing is to trigger the analysis needed to pinpoint sources of problems. Once identified, problems can be addressed through the development of comprehensive water quality restoration plans that define specific pollution limits, known as Total Maximum Daily Loads or “TMDLs” ([p. 129](#)).

### How does the state compile the threatened and impaired waters list?

The Clean Water Act requires that each state report every two years on the health of all its waters, not just those that are impaired. Information from this report, known as the Biennial Water Quality Report to Congress or Section 305(b) Report ([sidebar, p. 125](#)), is used to develop the threatened and impaired waters list.



### THREATENED AND IMPAIRED WATERS LIST – SECTION 303(d) LIST

“Each state shall identify those waters within its boundaries for which the effluent limitations (for industrial and municipal wastewater) are not stringent enough to implement any water quality standard applicable to such waters.”<sup>164</sup>



### TRIBES CAN BE AUTHORIZED TO ADMINISTER CWA SECTION 303(d)

In 2016, the EPA finalized a [rule](#) that established procedures for eligible tribes to obtain authorization for CWA Section 303(d), including developing lists of threatened and impaired waters and developing Total Maximum Daily Loads. As of 2022, no tribes have sought and received this authority.<sup>165</sup>





## DETERMINING WHETHER WATERS SUPPORT USES

States and tribes adopt water quality criteria as benchmarks to determine when a water body is not safe for people and wildlife, based on the latest scientific knowledge. The methodology for interpreting monitoring results against these benchmarks differs quite a bit among states and tribes.

Minnesota's approach below illustrates the basic idea. For conventional pollutants such as dissolved oxygen, pH, and turbidity that are not considered toxic or bioaccumulative, the state calculates a "percent exceedance" of each water quality criterion. It does this by dividing the number of samples from a particular water body that don't meet the criterion by the total number of samples taken. A minimum of 10 samples in 10 years is required.

- If < 10 % of the samples don't meet the chronic criterion (p. X), THEN the water is deemed to be "Fully Supporting" its designated uses.
- If 10–25 % of the samples don't meet the chronic criterion, THEN the water is deemed to be "Partially Supporting" its designated uses, or indicating potential impairment.
- If >25% of the samples don't meet the chronic criterion, THEN the water is deemed to be "Not Supporting" its designated uses, or there is a potential for severe impairment.

[\*Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305\(b\) Report and 303\(d\) List, 2022 Assessment and Listing Cycle, March 2022\*](#), p.11



## BIENNIAL WATER QUALITY REPORT TO CONGRESS

Section 305(b) of the CWA requires states to contribute to the biennial report to Congress on the health of all waters. Tribes are exempted from the reporting requirement, but are encouraged to report their assessment data.<sup>166</sup> The Section 305(b) report serves as each state's primary regular assessment of water quality. It also serves as the basis for identifying problems (Section 303(d) list), and is often used to set priorities and develop restoration plans (TMDLs). It must include:

- a description of the quality of each water body and of the extent to which its quality provides for the protection and propagation of fish, shellfish, and wildlife and allows recreational activities in and on the water;
- an estimate of the extent to which CWA programs have improved water quality and recommendations for future actions;
- an estimate of the environmental, economic, and social costs and benefits associated with achieving the objectives of the Act for each water body, and the estimated date of that achievement;
- an assessment of the water quality status and trends of all public lakes and;
- a description of the nature and extent of "nonpoint source pollution" and recommendations of programs necessary to control each category of nonpoint source pollution, including an estimate of implementation costs.

States may also include in the Section 305(b) report a description of the nature and extent of groundwater pollution and state plans or programs to maintain or improve groundwater quality.<sup>167</sup>

Most states compile the data and findings from the Section 305(b) report and add information from other sources, such as the state's report of waters affected by nonpoint sources (p. 76), to produce the Section 303(d) list. However, states often fail to list waters for which there is ample evidence of impairment or future threats. Moreover, impaired and threatened waters that can meet water quality standards by assigning or enforcing basic (technology-based) pollutant limits are not to be listed.

EPA, states, and tribes develop guidance on how to determine whether waters are impaired. EPA calls its guidance document the [\*Consolidated Assessment and Listing Methodology\*](#). States may call their version something else, such as a guidance manual for determination of impairment. At the federal, state, and tribal level, these documents are regularly updated and presented to the public for comment. You should engage in this process!



**You can start by finding out exactly how your state or tribe determines whether a water is meeting standards or is impaired, and offer your input if that process overlooks problems that should be addressed** (see sidebar).

### What is the Integrated Report?

The EPA recommends that states combine the threatened and impaired waters list (Section 303(d)) with the Section 305(b) report to create an **Integrated Report**, due April 1 of even numbered years (see sidebar). In its July 2003 guidance for the 2004 Integrated Report, the EPA described five categories into which all water bodies should be placed:

CATEGORY 1	All designated uses are met
CATEGORY 2	Some of the designated uses are met, but there is insufficient data to determine if remaining designated uses are met
CATEGORY 3	Insufficient data to determine whether any designated uses are met
CATEGORY 4	Water is impaired or threatened, but a water quality restoration plan (TMDL) is not needed
CATEGORY 5	Water is impaired or threatened, and a water quality restoration plan (TMDL) is needed

EPA's guidance for the Integrated Report recognizes that water bodies may be placed into multiple categories, and that states and tribes may categorize water bodies for which they don't have data.<sup>168</sup>

Most state water quality agencies are able to monitor only a small percentage of their waters consistently enough to detect water quality problems. Yet, some state agencies have chosen to disregard almost all data other than their own. Regulations say states must evaluate "all readily available data and information" in developing their Impaired Waters lists (40 C.F.R. § 130.7(b)(5), [sidebar p. 127](#)).

Over the years, the EPA has approved many state lists that were considered inadequate by the public. In the 1990s, numerous public interest groups across the country filed and won lawsuits against the EPA for approving state lists that were demonstrably incomplete. Consequently, the EPA and the public now take a harder look at the adequacy of these lists when they are updated every two years.

### How do I find out which waters are on the Impaired Waters list?

Your state or tribal water quality agency, your regional EPA office, and EPA headquarters all should have copies of your state's or tribe's most recent Section 303(d) list or publish the information online. Because final approval of the list sometimes takes years, there may be several draft versions. **Be sure to get the current approved list. You can find out whether particular water bodies are impaired, as well as a lot of other information by water body, by visiting EPA's [How's My Waterway](#).**

### If my river is not on the list, can I assume it is healthy?

Unfortunately, no. It is possible that your river simply wasn't monitored enough to detect problems or to meet data requirements. It is also possible that your state's standards are too weak to trigger a listing.

**You need to play an active role in ensuring that "threatened and impaired waters" lists are complete. Make sure that:**

- water quality standards are strong ([p. 47](#));
- the chemical, physical, and biological health of your waters is regularly monitored under the most critical conditions<sup>169</sup>; and
- all reliable water quality data are considered by the state or tribe whenever the impaired waters list is developed or updated.

Since a listing can lead to restrictions on new discharges (sidebar), changes to existing permits ([sidebar p. 109](#)), targeting of restoration funds ([section p. 142](#)), and improved management practices to reduce nonpoint source pollution, the effort to make sure that threatened and impaired waters lists are complete is worthwhile.

### What happens to the waters on the Impaired Waters list?

Once a water body is placed on the threatened and impaired waters list, it becomes one of many in line for evaluation and development of a plan for solving the problems.

States are required by the regulations to base priorities for addressing problems on the severity of the pollution and the sensitivity of the uses to be made of the waters<sup>170</sup>. A 1991 EPA guidance document includes the following criteria for setting priorities:<sup>171</sup>

- risk to human health and aquatic life;
- degree of public interest and support;
- recreational, economic, and aesthetic importance;
- vulnerability or fragility as an aquatic habitat;
- immediate programmatic needs (e.g., allocations needed to write permits or to implement best management practices);
- court orders and decisions relating to water quality; and
- national policies and priorities.



## NO NEW DISCHARGE

When a water body is on the Impaired Waters list, new discharges that might cause or contribute to the problems in the water are prohibited.

"No new permit may be issued to a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards."<sup>172</sup>

In practice, however, many states continue to allow new discharges to threatened and impaired waters, in apparent contradiction of the regulations. Technically, new discharges should only be allowed if a water quality restoration plan (TMDL) was developed and the new pollutant contribution was included in the plan.



Additional factors subsequently identified by EPA for priority setting include: rotating basin schedules, data availability, “logistical efficiencies,” and likelihood of delisting in the near future<sup>173</sup>.

Your state may have its own regulations and guidance about setting priorities for threatened and impaired waters. While state regulations can’t contradict federal regulations, they *can* be more detailed. **If you feel that the criteria your state is using to set priorities are incomplete or simply wrong, propose some new ones for your state agency to consider. You may also wish to inform the EPA, elected officials, public interest groups, and the media about your suggestions.**

In addition, once impaired waters are placed on the Impaired Waters list, proposals for new and increased discharges should receive greater scrutiny. As mentioned above, Clean Water Act regulations prohibit new discharges that “will cause or contribute to the violation of water quality standards”<sup>174</sup> ([sidebar, p. 126](#)).

## GETTING IMPAIRED WATERS LISTS RIGHT

### How can I influence which water bodies are placed on the Impaired Water list?

Some states call for data from the public while drafting the Impaired Water list. In most states, however, the public will see a draft Impaired Water list only when it comes out for public comment. Once the draft 303(d) list is released, you have at least 30 days to comment, and you may request a hearing.<sup>175</sup>

By providing valuable information to the listing process, you can help improve the quality of the 303(d) list. Any information that is collected about the health of a water body may be useful to the state in determining whether designated and existing uses are supported or water quality criteria are met.

If a water body has problems, it is more likely to receive attention and resources if it is placed on the 303(d) list than if it is not. Consequently, it is critical that the public regularly provides information to the state to help identify newly impaired or threatened waters. The 303(d) list may be updated more frequently than is officially required by the EPA.

### What can I do if the state is not using “all existing and readily available water quality-related data and information” in determining its threatened and impaired waters list?

The state is required to use all existing and readily available water quality-related data and information.<sup>176</sup> If you are able to show in comments on the draft 303(d) list that the state is not using all available data in compiling the list, EPA should disapprove the list. If EPA does not, you can file suit under the Administrative Procedures Act claiming that EPA acted in an arbitrary and capricious manner in approving the list.

### What can I do if threatened or impaired waters are not on the approved list?

Gather as much information as possible<sup>177</sup>, and provide the water quality agency with

- (a) evidence of water quality criteria violations or
- (b) proof that designated or existing uses are not being or will not be protected by basic permit limits.

If you plan to collect information to help your state place a water body on the 303(d) list, be aware that your state or tribe may have quality assurance protocols for community monitoring that defines how samples must be taken, tested, and documented. The EPA [has also published relevant guidance](#). Agencies sometimes cannot use data and information submitted by individuals in the regulatory process, but they can use this data and information for screening or prioritizing their own assessment efforts.



## COMMUNITY MONITORING DATA FOR LISTING

Many states use community monitoring data to identify problems that need further attention. Federal regulations require state agencies to “actively solicit” citizen data in their Section 303(d) listing process.

“[E]xisting and readily available water quality data” include “waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting.”<sup>178</sup>

If you take the time to learn your agency’s requirements for data collection and submission, you can increase the chances that your information will be used. If you follow a state monitoring protocol, the state agency should accept your data. Many states train volunteers to help collect water quality data or fund central management of the data collected.



## SOUTHWEST PHILADELPHIA

Denkyem River Guardians sent data to Pennsylvania Department of Environmental Protection and the Delaware River Basin Commission to inform them of their E.coli findings, and learned that their stretch of the River was considered “unassessed.” The state assessed the tidal Schuylkill in the 2022 Integrated Report informed by the work of the River Guardians. [Link to story.](#)



## ACTION CHECKLIST - THREATENED AND IMPAIRED WATERS LIST

- Search for your state or tribe's list of threatened and impaired waters (Section 303(d) list) online. You can also find it at EPA's [How's My Waterway](#) site. Examine the water bodies on the list that you know best. Does the list include all the threats or impairments that you know?
- Determine when the agency will start collecting data for the next list. Get on the email list or mailing list for public notices of Section 303(d) list development.
- Find out whether the state accepts community water quality monitoring data for Section 303(d) listing and, if so, seek their quality assurance protocols. If the state doesn't accept community monitoring data, advocate for them to do so.
- Take pictures to assist with listings (e.g., muddy waters on rainy days).
- Find out if your state has (a) listed any "threatened waters" and (b) scheduled them for TMDL development. If not, pursue the listing of a popular water segment that has a high-profile threat to highlight the requirement to include threatened waters.
- Identify priority problems across the state (e.g., high temperatures, excessive nitrogen, and phosphorus) that most frequently place water bodies on the Section 303(d) list. Ask the state to develop a strategy to address these common problems.
- Request your state's priority schedule for addressing Section 303(d)-listed water bodies and the basis for the priority rankings. Ask how drinking water, urban community, and endangered species needs factor into these priorities. Where does your watershed fall in the state's priorities?
- Be especially alert to changes in the Section 303(d) list. States develop procedures for removing water bodies from the list. Ask questions about the process for removing waters from the list. Ask whether waters are automatically removed from the list once TMDLs are developed and approved for them.

Before the next Section 303(d) list revision is due to EPA, request a public hearing to present your information. Earlier is better! Many states collect and evaluate data well before the April 1 deadline on even years and won't consider data after their internal review is complete. The summer before the April due date is usually a good time to engage. States will often request information at that time, but don't count on it!

Publicize all the "reliable" information you have. Photos can be evidence of violation of water quality standards. Keep EPA in the loop. If the state does not accept your information, you can ask the EPA to disapprove the list.

### What should I do if my state prematurely removes water bodies from the Impaired Waters list?

Many states continue to look for ways to shorten their Impaired Waters list and thus reduce their responsibilities for developing water quality restoration plans (TMDLs) to solve the problems. EPA policy allows states to remove water bodies from the

list after they have developed a plan or after other changes have been made, such as revisions to one or more permits (to correct any water quality problems), weakening of standards, or removal of designated uses. Unfortunately, this policy can result in attention being drawn away from many water bodies before water quality is improved. Some experts insist that waters should stay on the list until they meet water quality standards, and others believe that waters on the list should remain on the list indefinitely because they will always be threatened or at risk of impairment.

Parties whose activities contribute to a water body's impairment may attempt to persuade the state to remove the water from the list. Sometimes these parties claim that certain uses are not attainable or that standards have not been violated. As explained in Water Quality Standards (p. 47), designated uses may not be deemed unattainable and removed unless a formal analysis clearly shows that they cannot be attained.



## STEP 2 – DEVELOPING WATER QUALITY RESTORATION PLANS

(TOTAL MAXIMUM DAILY  
LOADS OR TMDLS)

### What is a TMDL?

Although the acronym TMDL refers to the **total maximum daily load** of a pollutant, in Clean Water Act parlance, the expression has come to represent both a **pollutant cap** and a **water quality restoration or management plan**.

The **cap** is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. Each cap focuses on one pollutant (such as bacteria or sediment), usually in one particular part of a water body (known as a reach or segment), though sometimes it addresses an entire river or lake.

The **plan** describes how to achieve the cap, answering the question: how must the cumulative contribution from each source of a particular pollutant (plus an allowance for a margin of safety) be reduced to achieve a level that is less than the pollutant cap? This reduction in each water body is required to restore the quality to a level that is safe for people and wildlife. The plan may address more than one pollutant, and frequently covers more than one impaired or threatened reach or segment of the water body. TMDLs are being developed on a watershed basis as well.

TMDLs are required to address impairment and threats identified on the Impaired Waters list. Therefore, the plans are needed both to restore and protect our water bodies. Most of the language here focuses on restoration.

### What are the components of a TMDL?

A TMDL:

- considers all point sources and assigns what is known as the Waste Load Allocation (WLA),
- all nonpoint sources and assigns what is known as the Load Allocation (LA), and
- calculates a margin of safety (MOS) to account for the uncertainty in predicting how much pollution reduction will result in meeting water quality standards.

In allocating pollutant loads, background conditions (before human impacts) and seasonal variation of the pollutant levels have to be taken into account.<sup>179</sup> It is recommended by the EPA that TMDLs specifically account for future growth as well.

### When is a TMDL required?

The Clean Water Act requires each state to develop TMDLs for each water body on the Section 303(d) list. In practice, however, it is not that straightforward. As mentioned above, the EPA guidance on the development of the Integrated Report,<sup>180</sup> which includes the threatened and impaired waters list (Section 303(d)), recommends placing all waters in one or more of the five categories on [page 125](#), when developing the Integrated Report. Only Category 5 requires the development of TMDLs.<sup>181</sup>



### EPA-APPROVED TMDLS

To find the TMDLs in your state, search online for your state's TMDL program or visit EPA's [How's My Waterway](#) website. For more TMDL resources visit [EPA's TMDL page](#).



### TMDL EQUATION\*



**LIMITS ON POINT SOURCES OF POLLUTION**  
(WASTE LOAD ALLOCATION)



**LIMITS ON NONPOINT SOURCES OF POLLUTION**  
(LOAD ALLOCATION)



**MARGIN OF SAFETY**  
(ACCOUNTING FOR UNCERTAINTY IN THE PROPOSED REDUCTIONS)



**HEALTHY WATER**  
(WITHIN TOTAL MAXIMUM DAILY LOAD POLLUTION CAP)

\*Background contributions and seasonal variation of pollutants must be included in the TMDL calculation; attention to future growth is recommended and will result in easier future TMDL compliance.



Timelines for the completion of TMDLs vary considerably across the country. Most states are under court orders and consent decrees for TMDL completion; required timelines range from five to fifteen years. In reality, if states list waters because they are threatened rather than impaired, they are likely to be assigned the lowest priority.

### Why are TMDLs “not needed” in Category 4 waters?

States and tribes that place waters in this Category 4 are allowed to put off or avoid developing a TMDL for the following reasons:

- **Category 4a:** a state developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination;
- **Category 4b:** other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time;
- **Category 4c:** the nonattainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant (e.g., lack of adequate flow or stream channelization).<sup>182</sup>

In all of the waters that end up in Category 4, it is important to ask questions and track progress of the TMDLs or required control measures. In the case of Category 4c, it is important to ask for greater examination of the relationship between pollution and pollutants in the water body to prevent the state or tribe from ignoring a problem that can be addressed and improved such that designated uses are once again supported (sidebar).



### ADDRESSING STREAMFLOW PROBLEMS

To the extent that flow impairments damage habitat and cause harm to aquatic life, listing and TMDL development may be warranted.

EPA has interpreted the regulations to mean that TMDLs are required only for pollutants.<sup>184</sup> EPA guidance states that if only low flow threatens or impairs a water body, a TMDL is not required. It belongs in Category 4 of the 303(d) list.

“EPA does not believe that flow, or lack of flow, is a pollutant as defined by CWA Section 502(6). Low flow can be a man-induced condition of a water body (i.e., a reduced volume of water) which fits the definition of pollution. Lack of flow sometimes leads to the increase of the concentration of a pollutant (e.g., sediment) in a water. In the situation where a pollutant is present, a TMDL, which may consider variations in flow, is required for that pollutant.”<sup>185</sup>

Waters with flow impairments are therefore likely to end up in “Category 4: Water is impaired or threatened, but a TMDL is not needed.”



### What does Category 5-alternative mean?

Some states are pursuing alternative restoration approaches to TMDLs. These waters remain on the Section 303(d) list and still require a TMDL until water quality standards are achieved. In EPA’s 2016 guidance, the agency explained the differences between Category 5-alternative and Category 4b. See that guidance for more information.<sup>183</sup>

### What is the goal for the TMDL?

The whole point of a TMDL is to end up with sufficiently improved conditions in the threatened or impaired water body such that all water quality standards (designated uses, water quality criteria, and the antidegradation policy) are met.

### What are the steps in the TMDL process?

- 1 Develop the pollutant cap—This is the absolute limit on pollution from ALL sources, and it must be based on what the water body can dilute and still meet water quality standards.
- 2 Identify the sources of the pollutant(s).
- 3 Allocate portions of the pollutant cap to sources. This usually requires a reduction in pollution discharge for existing sources in order to help solve the problem.

Some argue that the CWA doesn't require anything beyond the identification of the cap and assignment of the responsibilities to meet the cap. Without full implementation of the TMDL including monitoring and revising when necessary, it cannot be an effective tool to address problems in our threatened and impaired waters.



## STEPS TO DEVELOP A SUCCESSFUL TMDL

### 01 LIST AND PRIORITIZE

- 1 Identify all threatened and impaired waters on Section 303(d) list.
- 2 Prioritize water bodies for cleanup plan.

### 02 DEVELOP PLAN

- 3 Determine the allowable amount of the pollutant, the “pollutant cap,” based on what the water body can handle without violating water quality standards.
- 4 Identify all contributing sources to the problem being addressed.
- 5 Divide up the allowable pollutant “load” among all point and nonpoint sources.
- 6 Take into account background sources, seasonal variations and a margin of safety to account for uncertainty.<sup>186</sup> It is also important to consider contributions from likely future development, although this is not explicitly required.
- 7 Develop an implementation plan that includes adjustment of permits and monitoring. An implementation plan is not required, but it is needed to focus agency, local government, and stakeholder attention on achieving TMDL goals.
- 8 Send draft out for public comment and/or public hearing.<sup>187</sup>

### 03 IMPLEMENT CHANGES

- 9 Carry out activities in implementation plan.
- 10 Monitor progress toward the goal. A monitoring plan is not required, but thoughtful monitoring will provide important feedback throughout implementation.
- 11 Revise as necessary.

## What amount of pollution is allowable?

Every water body has a limit of how much pollution it can take in (assimilate) and still support all its legally protected existing and designated uses. This amount is called the water body's **assimilative capacity**. At some point, for each pollutant, the amount coming into a water body will become too much, and aquatic life will be affected, recreation will be compromised, or the water supply will be jeopardized.

But what is that point? Agencies depend on existing research, data collected, models, and/or “best professional judgment” to determine the allowable contribution or load for each pollutant in each segment of a water body. These allowable loads must be protective of all uses of the water body during the most critical conditions, such as low flow. To determine allowable loads, “site-specific information should be used whenever possible”.<sup>188</sup> Documentation of the calculation of allowable pollutant amounts should be available to the public. Local technical experts (e.g., university researchers or consultants) may be willing to help review these calculations.

## Does the TMDL have to address daily pollutant loads?

One of the problems encountered when evaluating TMDLs is that the cap and the allocations in the Total Maximum Daily Load are often not specified as maximum daily amounts. They are frequently expressed as monthly or annual loads. The TMDLs are required to account for daily loads to assure that standards are met at ALL times, despite daily or seasonal changes in conditions. It is important to focus on daily loads because it may be possible to meet a monthly or an annual load cap even if critically poor water quality conditions occurred during part of that month or year.

Realistically, it is difficult to express some TMDLs, such as those dealing with habitat or flow problems, as a daily pollutant load. If the target of a TMDL is presented as something other than a daily load, insist that the agency explain how the water quality criteria will be met and the uses will be protected every day throughout the year.

## What does the Margin of Safety represent?

TMDLs must include a Margin of Safety (MOS) to account for the uncertainty about the relationship between pollutant limits and water quality targets<sup>189</sup>, which might be due to data gaps, missing sources, modeling assumptions, etc. The MOS is intended to provide a cushion in the TMDL because it is difficult, if not impossible, to determine exactly what is needed to restore or protect the water body on the first try.

A MOS can be introduced either as an explicit, set-aside part of the total allowable load, or through implicit conservative assumptions used in determining the TMDL. The implicit approach is more commonly used by agencies, but it is less informative to the public. An explicit MOS set-aside more clearly accounts for uncertainties in the assumptions used to establish a pollutant cap and allocate pollutant loads among sources.

## How do I know whether all pollutant sources will be held accountable?

The TMDL can allocate the pollutant “pie” in several ways.

For point sources, the situation is straightforward. In most cases, each NPDES permittee will be allocated a certain amount of the pollutant load. In some TMDLs, smaller point sources are grouped together for a collective pollutant allocation. This approach can make it difficult to track an individual permittee's compliance with the TMDL, and it can result in “hot spots” where violations are greater if the sources are in close proximity. Regulators need



## LOADS AND LOADING CAPACITY

“Load or loading: an amount of matter or thermal energy that is introduced into a receiving water; to introduce matter or thermal energy into a receiving water. Loading may be either man caused (pollutant loading) or natural (natural background loading).”

Loading capacity: The greatest amount of loading that a water can receive without violating water quality standards.”<sup>190</sup>



## POLLUTION TRADING AND TMDLS

Some TMDLs are being developed with built-in “pollution trading” strategies. Pollution trading refers to ways that pollutant sources can shift responsibility for addressing pollution. Point sources can trade pollution “credits” with other point sources or with nonpoint sources of pollution. For example, one point source discharger may be able to reduce its load beyond what is required by a TMDL. Under EPA's trading guidance, that source may be able to “trade” that extra reduction or “credit” to another source for which that same reduction would be more difficult or expensive to achieve. The transaction usually involves purchase of the credits.

Another common example (referred to as a pollution “offset”) is when a point source discharger chooses to pay for better nonpoint source best management practices in the watershed in order to achieve specific pollution reductions rather than to pay for upgrading its facility. Specifically, a municipal wastewater treatment authority may discharge water that is too warm to support the uses in the receiving water. To address the problem, the authority may invest in riparian vegetation on someone else's property to create shading that will cool the water.

Pollution trading poses challenges that include difficulties in monitoring progress and holding sources accountable. A trading program may lead to unwanted consequences such as (a) local “hot spots” of poor water quality, (b) a weakening of enforcement provisions; or (c) inequities from allowing trading across watersheds or within large watersheds such that not all parts of the water system benefit from the water quality improvements. Ask for specific details about how the water quality standards will be met.



## ENFORCEABLE NONPOINT SOURCE POLLUTION CONTROL

*“Almanac of Enforceable State Laws to Control Nonpoint Source Water Pollution,”*  
Environmental Law Institute, 1998

to include every point source of the targeted pollutant as a part of a **Waste Load Allocation (WLA)** and assign specific pollutant loads to each source that can be translated into numeric, enforceable permit limits.

For nonpoint sources, pollutant loads are often allocated to broad categories of activities in a water body. For example, pollutant loads may be divided into agricultural and silvicultural sources. Because nonpoint sources of pollution are typically unregulated, allocation of a portion of the “pie” to specific nonpoint pollutant sources in the **Load Allocation (LA)** may provide the best opportunity to secure local support and funding for necessary controls.

Regulators may overlook a pollutant source. Identification of pollutant sources can be a fruitful contribution of interested watershed residents to the TMDL process.

### Who develops TMDLs?

Most states have taken the lead in developing TMDLs, however, they frequently contract with consulting firms to do so. Tribes can obtain authority to administer the TMDL program, and in some states, nonprofit statewide environmental groups or watershed organizations have taken on significant responsibility in the development of a TMDL, accepting technical assistance and sometimes funding from the state or federal agencies. For example, the Huron River Watershed Council in Michigan helped to develop a TMDL to address phosphorus problems in the Huron River.

The EPA has a legal responsibility to ensure the development of enforceable TMDLs, and the agency fulfills that responsibility by reviewing and issuing approval or disapproval of all TMDLs. The EPA has developed many TMDLs itself in response to court orders, requests from the state, or inadequate state attempts.

### What happens after the TMDL is developed?

After a TMDL is developed, implementation must begin.

First steps include reducing permitted discharges and securing better control of other sources of pollution through whatever means are available. These “means” usually include a combination of best management practices (education and voluntary measures), financial assistance or cost sharing programs, and regulations (see sidebar). Funding programs are increasingly focused on TMDL implementation. For example, many states only fund Section 319 nonpoint source control projects in impaired watersheds [\(p. 140\)](#).

Some state agencies require monitoring to evaluate the success of TMDL implementation. Instream monitoring can be required when NPDES permits are revised, otherwise it is likely to fall on the agency’s shoulders. If monitoring continues to show water quality problems after implementation, the agency must go back and fine-tune its TMDL. Although the national regulations do not explicitly require implementation, monitoring, or revisions, without these efforts, the TMDL remains simply a paper exercise.

Current EPA policy allows removal of waters from the Impaired Waters list once the TMDL is developed. As discussed above [\(p. 128\)](#), there is much debate about whether this is appropriate or legal, and whether water bodies should remain on the list until water quality standards have been met.



## GETTING THE TMDL RIGHT

### How can I get involved in the TMDL process?

The Clean Water Act requires public involvement in developing TMDLs (see sidebar). The level of public involvement in the TMDL process varies by state. Typically, the state will circulate a draft threatened and impaired waters Section (303(d)) list and draft TMDLs and allow 30 to 60 days for public comment. In some cases, hearings will be held as well.

**Be sure that you are on the public notice email and mailing lists for the water bodies you care about most.**

You do not need to wait for the public notice to make your interest in the TMDL process clear to the agency. As a practical matter, the earlier and more substantively you are involved, and the more public interest you generate, the better your chances of making a difference. Community information about sources and threats, and monitoring or visually tracking controls in place, can improve the quality of TMDLs that are developed and can ultimately speed cleanup of impaired waters or secure protection of threatened waters. In many states, you can take the initiative to contribute to TMDL development.

### What if the final TMDL does not adequately address the impairment or threat?

The EPA must review and approve or disapprove all TMDLs within 30 days. **If 30 days have not passed and EPA has yet to act, you can contact your regional EPA office and explain your concerns. Follow any such call with a letter summarizing your points.**

If 30 days have passed, and EPA has not acted, the public can initiate the process to file suit to force EPA to act.<sup>191</sup> If EPA has approved a bad TMDL, you may also be able to initiate a lawsuit.

### What if my state doesn't include implementation and monitoring plans in the draft TMDL?

TMDL implementation plans are varied and difficult to enforce. Some states have stepped up to the plate by adopting regulations requiring implementation plans, and others have developed implementation guidance. At the very least, because TMDL-required changes to NPDES permits must be made by the permit authority, the TMDL should refer to the timing and nature of those adjustments. Even in states where implementation plans are required, such as Virginia, public review and pressure are still needed to ensure the plans have some value.

Monitoring plans are necessary to identify the measurements of success in the watershed and to assign responsibilities for tracking progress. **If your state does not include a monitoring plan with the draft TMDL, ask how assigned pollutant allocations will be evaluated and overall improvement will be measured. Point out that until the condition of the water body improves, no additional sources can be permitted that will cause or contribute to the violation of water quality standards<sup>192</sup> (sidebar p. 126).**



### PUBLIC INVOLVEMENT REQUIRED IN THE 303(d)/TMDL PROCESS

“Calculations to establish TMDLs shall be subject to public review as defined in the State Continuing Planning Process.”<sup>193</sup>

It is important to note that some states do not interpret this language as meaning the public should be involved in all phases of the Section 303(d)/TMDL process. Individuals should insist on early and multiple opportunities for public involvement.



## What if TMDL-required changes to permits are not made?

Once a TMDL is approved by EPA, the cap for the pollutant addressed in the TMDL effectively acts as a site-specific water quality criterion. In order for the TMDL to work, the pollution allocations for point sources and the changes to nonpoint source pollution control practices must be implemented in a timely fashion. Changes to the permit limits consistent with the TMDL must occur when a permit is up for renewal after the TMDL has been approved, if not sooner. **If the agency has not adjusted permits with respect to the approved or anticipated TMDLs, it is important to raise concerns in comments, hearings, and permit appeal procedures.**



## ✓ ACTION CHECKLIST – TOTAL MAXIMUM DAILY LOADS

- Get on the email or mailing list for all TMDLs in your basin, and request opportunities for public involvement if none are planned.
- During TMDL development or once you obtain a draft TMDL, explore the following questions:
  - a.** Is the TMDL designed to meet water quality standards? Is that the goal?
  - b.** Is the pollution cap set as a daily load? Are the allocations for point and nonpoint sources set as daily loads?
  - c.** Are all sources included?
  - d.** Are pollutant load allocations among point and nonpoint sources appropriate?
  - e.** Are there reasonable assurances that the nonpoint sources will be adequately addressed?
  - f.** Is there an implementation plan? Does it include adequate monitoring and a timeline for revisions?
  - g.** Look into which permits will be changed as a result of the new TMDL, and by when?
  - h.** Which best management practices are required to address the different kinds of nonpoint source pollution in your basin? Who is responsible for paying for the BMPs, putting them in place, and monitoring them? How will BMPs be monitored? What is the timeline for compliance and results? Is there a mechanism for enforcement?
  - i.** Is there a trigger for revisions if pollutant allocations are not adequate to meet water quality standards?
  - j.** If trading is going to be allowed, will the trading program result in inequities in terms of water quality benefits?
- Identify all the other watershed improvement efforts underway (such as Source Water Assessments under the Safe Drinking Water Act, Habitat Conservation Plans under the Endangered Species Act, or any solid or hazardous waste cleanup plans under state or federal programs), and make a case for coordinating the activities and leveraging the resources being used.

# CLEAN WATER ACT ENFORCEMENT BY THE PUBLIC

Now that we have learned how Clean Water Act tools are supposed to work, it's time to talk about reality. Many water quality standards, permits, and program requirements are violated every day—but not always intentionally. Ideally, state agencies would have sufficient staff and financial resources to monitor and inspect every activity, every facility, and every water body. Realistically, state agencies are underfunded and political challenges keep them from fully enforcing the Clean Water Act.

In many of the preceding sections, there are pages devoted to getting the implementation of the Clean Water Act right, which includes the roles of EPA, states, tribes, and individuals. The sidebar at right directs you to those pages. This section is focused on what is known as “citizen suits” or “citizen enforcement actions” because the Clean Water Act, among other federal environmental statutes,<sup>194</sup> grants individuals the right to take independent enforcement actions.

In this case, “citizen” does not mean citizen of the United States, it is defined as “a person or persons having an interest which is or may be adversely affected.”<sup>195</sup>

## Under what circumstances can I bring a citizen enforcement action?

Section 505 of the Clean Water Act authorizes individuals or organizations to bring a lawsuit to enforce the CWA under two situations:

- 1 If there are **ongoing violations** of a NPDES permit or a water quality certification or **discharges without a required permit** (e.g., NPDES, Dredge and Fill) and no administrative enforcement action (involving penalties, public notice, and a chance to comment) has been taken by the state or federal agency in charge of the permit or

- 2 If the **EPA is not performing mandatory**, otherwise known as nondiscretionary, **duties**.<sup>196</sup>

Keep in mind that general NPDES permits can be enforced by the public as well. While general permits usually do not have numeric limits and might not require monitoring, they contain narrative requirements that are enforceable.

These lawsuits should not be confused with other lawsuits filed by individuals or organizations challenging the *issuance* of a permit. (See sidebar for reference to sections that provide information on appealing water quality standards, NPDES permits, TMDLs, Section 401, and Section 404 permits.)

## What is meant by ongoing violations?

The public must prove either that

- 1 the violations are ongoing, not just in the past, or
- 2 there is at least a reasonable likelihood that violations will occur again.<sup>197</sup>

In contrast, state and federal authorities can take enforcement actions against past violations for purposes of remediation or restoration. They may also do this to send a message about the cost of violating the law.



## PUBLIC REVIEW, COMMENT, HEARINGS, APPEALS, AGENCY ROLES AND ACTIONS, AND ENFORCEMENT

The following references are to the pages of previous sections where involvement and enforcement are discussed.

- Water Quality Standards ([pp. 70–74](#))
- Pollution Discharge Permits (NPDES) ([pp. 103–111](#))
- Dredge and Fill Permits (Section 404) ([pp. 117–118](#))
- Water Quality Certification (Section 401) ([pp. 122–123](#))
- Impaired Waters (Section 303(d)) ([pp. 127–128](#))
- Total Maximum Daily Loads (TMDLs) ([pp. 134–135](#))



## CITIZEN SUIT AUTHORITY

“(a) ...any citizen may commence a civil action on his own behalf

(1) against any person...who is alleged to be in violation of

(A) an effluent standard or limitation...or

(B) an order issued by the Administrator or a State with respect to such a standard or limitation, or

(2) against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary...”<sup>198</sup>



## What is considered a nondiscretionary duty?

Nondiscretionary duties are those that EPA is required by statute and/or regulation to perform, usually by a specific date or within a particular time period. For example, EPA must approve or disapprove state water quality standards within 60 and 90 days of state submittal, respectively, and approve or disapprove Section 303(d) lists and TMDLs within 30 days of state submittal. U.S. Army Corps of Engineers must require a Section 401 certification or a waiver for every Section 404 permit within one year.

## How do I know WHOM I should sue?

Regarding an ongoing permit violation, the public can file suit against the permittee but not against the state or federal agency that has issued and is failing to enforce the permit. State agencies are NOT required to prosecute every permit violator. In the same way that the police cannot be sued when they choose not to catch everyone who drives over the speed limit, the state agency is required to have an enforcement program that can lead to penalties and prosecution, but they are not expected to catch or take action against every violator or enforce every permit.

When EPA is not performing a mandatory duty, the public can file suit against the EPA. During the 1990s, citizen suits challenging state failures to develop TMDL programs were filed against the EPA for not exercising its mandatory duty to “review” inadequate state lists and TMDLs. The lists and TMDLs were inadequate because they did not even exist.

## When do I need a lawyer?

Ideally, you will have access to legal representation as soon as you decide to take steps to enforce a permit or challenge an agency’s (in)action. It is very likely the permittee and the agency will each have legal counsel to defend themselves from the beginning, so keep that in mind.

Realistically, many individuals or community organizations do not have the resources to hire a lawyer right away. It can be difficult to find an available and affordable attorney with Clean Water Act experience. Around the country, there are many environmental law centers and clinics that raise money enabling them to represent environmental organizations. There are also many private practice attorneys that offer pro bono (free of charge) legal assistance for environmental cases. Since the CWA citizen suit provision allows for the recovery of attorneys’ fees, someone may be willing to take on a case based on an expectation that they will win and recover their fees and expenses. **Try to track someone down who has experience with your issue and the related process** (see sidebar).



## What notice do I need to provide?

Before filing a lawsuit, you must send a formal 60-day notice of intent to sue to the alleged violator of the CWA, whether an individual, a corporation, or a local, state, or federal agency. The chief administrative officer of the state water pollution control agency, the EPA administrator, and the regional EPA administrator must also be sent copies. If the alleged violator is a federal agency, the U.S. attorney general must be notified as well.<sup>199</sup>

Although 60-day notices do not necessarily have to be filed by attorneys, it is recommended that you work with an attorney to do so.

## What research is necessary before sending a 60-day notice?



Before you actually file a lawsuit, you will want to **check EPA’s Enforcement and Compliance History Online (ECHO) database to confirm permit violations and to see whether any federal or state enforcement actions are being diligently prosecuted.** If so, it can preclude community enforcement. If not, then it is important to collect documents that will build your case (photos, monitoring data) and to work with an attorney to line up



### PUBLIC INTEREST ENVIRONMENTAL LAW CENTERS

There are attorneys willing to work at little or no cost (“pro bono”) for environmental groups in almost every state. In addition to those who work alone or for private firms, there is a growing number of environmental law clinics associated with law schools<sup>200</sup> and nonprofit environmental law centers who raise money to be able to represent nonprofit environmental organizations.



### GULF SOUTH

A group of environmental advocates used the citizen suit provision to stop a coal export facility from polluting the Mississippi River.

[Link to story.](#)

expert witnesses who can testify. Many CWA citizen suits have been based on monitoring data and information provided by dischargers themselves in monthly Discharge Monitoring Reports ([DMRs, p. 85](#)). Generally speaking, the failure to file timely and accurate DMRs is itself a violation of most NPDES permits.

Do not file hastily conceived or frivolous notices. They waste everyone's time: the EPA's, your state's, and yours. They can also move water quality protection efforts backward, not forward. A good rule of thumb is never to file a 60-day notice on any issue unless you are fully prepared to back it up with a lawsuit.

An attorney can help you compile the following information, among other things, specific to your case:

- why you or your organization has a right to enforce the Clean Water Act in a particular water body—establish “standing” (see sidebar);
- the permit requirements, exact statutory provisions, and/or regulations that are being violated or not performed;
- what the polluter has done to violate the permit and when it occurred in detail (including dates), or adequate proof of a dereliction of a mandatory duty;
- to whom you need to direct the 60-day notice; and
- to whom copies of the notice, and later the complaint, must be sent.

### What must be in a 60-day notice?

The 60-day notice has specific requirements depending on which situation you are reporting. For example:

- 1 When a *permit is violated or an unpermitted discharge is identified*, the notice “shall include sufficient information to permit the recipient to identify the specific standard, limitation, or order alleged to have been violated, the activity alleged to constitute a violation, the person or persons responsible for the alleged violation, the location of the alleged violation, the date or dates of such violation, and the full name, address, and telephone number of the person giving notice.”<sup>201</sup>

- 2 When a *mandatory duty has not been performed by EPA*, the notice “shall identify the provision of the Act which requires such act or creates such duty, shall describe with reasonable specificity the action taken or not taken by the Administrator which is alleged to constitute a failure to perform such act or duty, and shall state the full name, address, and telephone number of the person giving the notice.”<sup>202</sup>

Under both situations above, the notice must include the name, address, and telephone number of the legal counsel, if any, representing the person giving the notice.<sup>203</sup>

If all the requirements of the 60-day notice are not fulfilled, the notice will be invalid, and your case may be thrown out. Defendants work very hard to get cases thrown out on technicalities. **Don't give them that opportunity—protect your right to present and defend the merits of your complaint.**

### Where do I file suit?

On day 61, if the regulatory agency has not required compliance or initiated any enforcement action against the alleged violator, or if the EPA has not taken action toward fulfilling its mandatory duty, a lawsuit can be filed. All Clean Water Act citizen enforcement suits must be filed in federal court.

Strategic decisions must be made, in consultation with experts and attorneys, regarding which case is brought or how a case is brought based on several factors including to which court and to which judge it will be assigned.

### What are the penalties for noncompliance?

Substantial civil penalties may be assessed per day per violation in addition to the plaintiff's attorney's fees. These penalties are adjusted annually for inflation.<sup>204</sup> As of 2022, the daily penalty for a permit violation was \$59,973. Penalties are not awarded to plaintiffs, however; they go to the U.S. treasury. In lieu of or in addition to penalties, the court may order the violator to remediate the violations in some way.



### WHAT IS STANDING?

An individual or group must have “standing” to file a Clean Water Act lawsuit. This means they must have a connection to the adverse impacts that have been caused by a facility that is out of compliance with the CWA or by the EPA not performing a mandatory duty. For example, you may need to prove that some of your members use or live on the stretch of river downstream from a permit violation or an unpermitted discharge.

To demonstrate standing in federal court, among other things, a person must show a “reasonable concern” over the environmental harm caused by the allegedly unlawful activity to a specific body of water that the person cares about (i.e., uses or lives on).<sup>205</sup>



### NORTHERN NEW MEXICO

A group of land-based, religious, and Indigenous women used the citizen suit provision to secure funding for experts, access to permit sites, and mandated technical meetings. [Link to story.](#)

As part of a settlement agreement that can be negotiated to avoid a trial, the violator may agree to “supplemental environmental projects.” These projects are often designed to help protect or restore the water body that was the site of the violation as well as other waters in the state or region. For example, a violator may be required to pay a fine and establish a fund that can be used to pay for public acquisition of environmentally sensitive lands along one or more water bodies. Parties are also typically free to be more creative with their solutions when they resolve citizen suits through settlement agreements.

### Are there other laws that can help in the process?

Countless. Brief summaries of other laws such as the National Environmental Policy Act and the Endangered Species Act, whose implementation should be coordinated with that of the Clean Water Act, follow in Part 3 (p.X). Some of these laws have their own citizen suit provisions as well.

Federal and state Administrative Procedure Acts (APA) are commonly used in conjunction with CWA citizen suits. The **federal APA** allows individuals to file suit when a federal action (issuance of a permit or approval of state standards, impaired waters list (Section 303(d)), or TMDLs, or adoption of a plan, etc.) is found to be, among other things, “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.”<sup>206</sup>

Most NPDES permits, though, are issued by state agencies and must be challenged through state proceedings (agency review, board or commission review, administrative law judge, or state court). State Administrative Procedure Acts usually dictate how those cases proceed. You may find additional information on appeals in your state water pollution control law as well, if you have one. Track down the state procedures. They are likely to be a useful tool in your advocacy.

## ACTION CHECKLIST – CITIZEN ENFORCEMENT

- Spend time patrolling your watershed on land and water to observe visible pipes discharging water on wet and dry days.
- If you observe any noticeably polluted discharges, take pictures, and contact your state water quality agency to find where related permit information is.
- Collect data that support your claim and document discharges, permit violations, or specific mandatory agency duties not performed.
- Establish standing—demonstrate members of your organization that are being harmed by the activities of concern.
- Engage in discussions with the agency and/or the violator.
- Get in touch with an attorney and experts.
- Understand the process used to challenge the decision or actions that are impacting your water ways. File a 60-day notice, if necessary, or pursue any action needed in order to be in a position to file a legal challenge.
- If no response by day 60, file a complaint on day 61, if necessary and appropriate.
- Engage in settlement negotiations.
- Proceed to court, if necessary.

# NONPOINT SOURCE POLLUTION CONTROL AND GRANTS (SECTION 319)

Section 319, added to the CWA in 1987, established a national program to control nonpoint sources of pollution (also known as polluted runoff). In program guidance, the EPA defines nonpoint source pollution as "...caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made pollutants into lakes, rivers, streams, wetlands, estuaries, other coastal waters, and groundwater. Atmospheric deposition and hydrologic modification are also sources of nonpoint pollution."<sup>207</sup> As described in the NPDES section, it is most accurately described as the pollution that is not a point source ([p. 76](#)).

EPA offers more detailed examples and links to more information about what nonpoint source pollution can include on its [Basic Information about Nonpoint Source Pollution website](#).<sup>208</sup>

- Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas
- Oil, grease, and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems
- Atmospheric deposition and hydromodification

## How can Section 319 help control nonpoint source pollution?

Section 319 contains three main strategies for addressing polluted runoff:

- 1 requiring states and tribes to prepare assessments of their nonpoint source pollution problems;

- 2 requiring states and tribes to develop management programs to address the problems identified in their assessments; and
- 3 creating a grant program that allows the EPA to fund state and tribal programs for nonpoint source assessment and control.

## How do I find out whether my state or tribe has conducted an assessment and established a nonpoint source management program?

All states completed their initial assessments and established their first approved nonpoint programs by 1990. Although not required by the CWA, the EPA and the states worked together to update assessments and programs. The states are now scheduled to review, evaluate, and revise their nonpoint source assessment and program at least once every five years.<sup>209</sup> You can contact your state Section 319 coordinator for documents and specific information related to your state's nonpoint source problems, threats, and management program.

As of 2022, [210 tribes](#) have developed a nonpoint source management program. Highlights are reported in [Tribal Nonpoint Source Programs](#) (2019).

## What should the state's nonpoint source management program include?

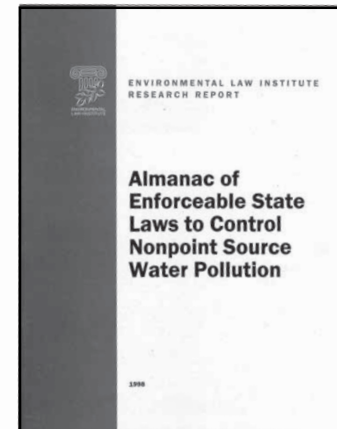
Section 319 requires each state to create and implement a nonpoint source management program. Each state program must identify the best management practices that will be employed to control nonpoint source pollution in the state and the specific programs (local, state, federal) that will be used to implement the selected management practices. In addition, a schedule for implementation must be developed that includes milestones for measuring the progress of the state program.<sup>210</sup>



Many states have developed enforceable programs to address nonpoint source pollution. This report details the approaches in place in 1998. Though some may have changed, the ideas may be valuable to those wanting to do the same.

[“Almanac of Enforceable State Laws to Control Nonpoint Source Water Pollution,”](#)

Environmental Law Institute, 1998



# GRANTS

The most tangible part of the Nonpoint Source Management Programs are the watershed-based grants.

Congress appropriates funds annually to address nonpoint source pollution through Section 319 of the CWA. These funds go to the EPA. A portion is set aside for tribes, with the rest distributed as grants to the states based on a formula. The formula for calculating each state's grant is based on population, cropland acreage, critical habitat acreage, and other factors. According to the CWA, funds cannot be granted to any state that did not make "satisfactory progress" with its nonpoint program during the previous fiscal year (see sidebar).<sup>211</sup> This requirement has rarely been enforced, but there have been efforts to require better tracking and updating of plans every five years to meet the satisfactory progress standard.

In 2022, \$178 million was allocated to the Section 319 program, up from the recent low of \$155.9 million in 2013.<sup>212</sup> Individual grants from state- and tribal-run pass-through programs vary widely. For more detailed information on grants by state, visit the [Nonpoint Source Watershed Projects Data Explorer](#).

The CWA says the tribal portion of the national Section 319 budget allocation shall be limited to one third of 1%,<sup>213</sup> however, it has been approximately 5% of the national Section 319 budget since 2015.<sup>214</sup>

## Who qualifies for Section 319 watershed-based project grants?

Eligibility varies from state to state. Where a water quality agency has established its own grant program with Section 319 funds, other state agencies, local governments, nonprofit organizations, and others may be eligible for grant funds. In most states, for-profit organizations and federal agencies are not eligible.

Tribes that have met eligibility criteria and have an EPA-approved nonpoint source assessment and management program are eligible to apply for Section 319 project grants.

## What types of activities do Section 319 grants support?

The Section 319 funds for states must be evenly split between the funding of the state's **Nonpoint Source Management program activities** that include planning, assessment, management, and statewide projects and **watershed-based projects**. There is a required 50% set-aside for watershed-based projects that are guided by a Watershed-Based Plan ([sidebar p. 142](#)).<sup>215</sup> In addition, the guidelines require coordination with [coastal zone nonpoint source pollution management](#),<sup>216</sup> and encourage leveraging of Farm Bill funds and [Clean Water State Revolving Funds](#), among many other CWA programs.<sup>217</sup>

State Section 319 watershed project grants are predominantly targeted at activities designed to restore watersheds degraded by nonpoint source pollution. In particular, EPA encourages the coordination of watershed based plans and funds for Section 319 projects with Total Maximum Daily Loads ([p. 129](#)) and Section 106 funds<sup>218</sup> used for TMDL development.

The tribal Section 319 grants are allocated in two different parts. First, all [tribes](#) with EPA-approved nonpoint source assessments and management programs and "treatment in a manner similar to a state" ([sidebar p. 49](#)) receive a "base" grant of \$30,000–\$50,000, depending on tribal land area.<sup>219</sup> That can be used to build partnerships, conduct water quality monitoring, educate communities, and implement demonstration projects.



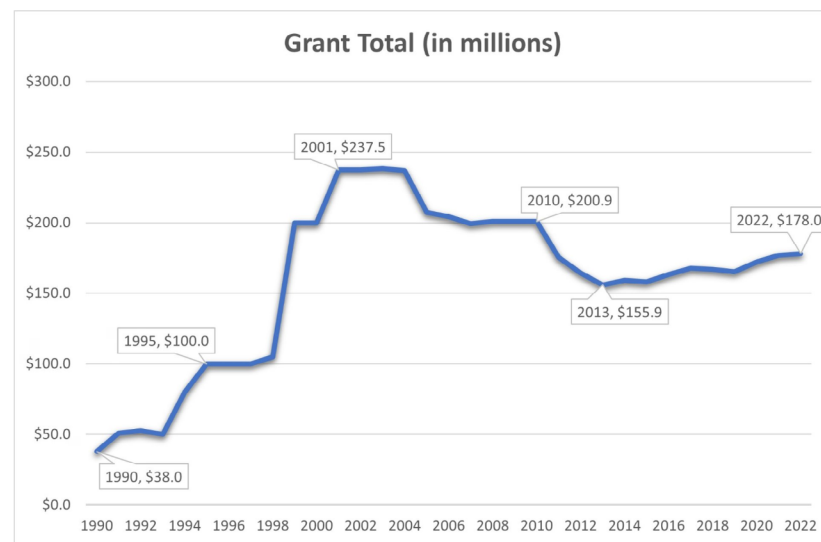
### "SATISFACTORY PROGRESS"

"No grant may be made under this subsection in any fiscal year to a State which in the preceding fiscal year received a grant under this subsection unless the Administrator determines that such State made satisfactory progress in such preceding fiscal year in meeting the schedule specified by such State under subsection (b)(2)."<sup>220</sup>

## FROM EPA.GOV

### 319 Grant Funds History:

For detailed year by year funding from 1990 to current funding year, you can download the spreadsheet: [Historic 319 Funding Levels \(xlsx\)](#) (36.41 KB)



Values for most years are rounded to the nearest \$100,000.

Then, those same tribes are eligible for “competitive” project grants up to \$100,000 for implementing projects, developing watershed-based plans, and conducting effectiveness monitoring. Between 2013 and 2018, 160 competitive grants were awarded to 60 different tribes.<sup>221</sup>

### What cannot be funded by Section 319 grants?

Section 319 funds cannot be used for lobbying or research, to implement any NPDES permit requirements, or for other point source related projects. It is important to remember that Section 319 grants are meant to fund implementation of the state nonpoint source management plan, so management measures and activities not in the plan will not be eligible for funding.

No more than 10% of Section 319 funds can be used for administrative costs. Generally, the state passes that restriction on to the specific grants as well. Administrative costs include salaries, overhead, or other indirect costs. However, the 10% limitation does not apply to certain activities such as enforcement, education, technical assistance, demonstration projects, and technology transfer. **Contact your state agency to clarify this limitation before you apply.**<sup>222</sup>

### Is there a match requirement for a 319 grant?

Yes. States are required to provide a 40% match to the federal Section 319 grant. Many states pass the match requirement directly on to grantees, however the percentage can vary.

Tribes are generally required to meet the 40% match as well unless financial hardship can be demonstrated. In that case, the requirement can be reduced to 10%.

### How are Section 319 grants prioritized?

Current EPA guidance continues to stress the importance of the watershed approach in the allocation of Section 319 funds and the focus on nonpoint source-impaired waterbodies identified on the Section 303(d) list ([p. 124](#)). This focus includes development of TMDLs and watershed-based plans for impaired waters and actual restoration projects. Some funds are still available for projects in unimpaired watersheds, however, and following consultation with EPA, a limited amount of funds may be granted for watershed projects to protect unimpaired, high-quality waters that have been identified as priorities in the state or tribal management program. Examples may include threatened watersheds or those with special status such as drinking water sources or habitats of threatened and endangered species.



## WATERSHED-BASED PLANS REQUIRED

Watershed-Based Plans are required before getting funding for a watershed-based project. Funding is authorized for both, but it may not work that way in your state.

The following **nine elements** are required in Watershed-Based Plans for every Section 319 project:

1. An identification of the causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve load reductions and any other goals identified in the watershed plan.
2. An estimate of the load reductions expected from management measures (see 3).
3. A description of the nonpoint source management measures that will need to be implemented to achieve load reductions (2), and a description of the critical areas in which those measures will be needed to implement this plan.
4. An estimate of the amount of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon to implement this plan.
5. An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.
6. A schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.
7. A description of interim measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.
8. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.
9. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established (8).

See [EPA's Handbook for Developing Watershed Plans to Restore and Protect our Waters](#), p. 2–14 for explanation of each element.



## INFORMATION FOR DEVELOPING WATERSHED-BASED PLANS THAT INCLUDE WETLANDS

- [EPA Region 5 Wetlands Supplement: Incorporating Wetlands into Watershed Planning](#)
- [Center for Watershed Protection, Using Local Watershed Plans to Protect Wetlands \(2006\)](#)

Most states follow the national guidance and prioritize funding in impaired water bodies. In addition, states may consider a range of other factors such as match amount, public support for the project, technical merit, and the nature of any threat (e.g., public health threats at a swimming beach or potential harm to an endangered species). Many states also have priority areas where funding is focused.

### How do I apply for a Section 319 grant?

The application process varies from state to state. Generally, the states send out a “request for proposals” once a year. The request describes the application process and grant requirements. **Contact your state Section 319 coordinator and ask to be added to the mailing list for Section 319 grant notices. Keep in mind that many states have a long lead time on proposals. Some processes take as long as a year or two from the request for proposals to actual funding.**

Eligible tribes must apply via [Grants.gov](https://www.grants.gov).<sup>223</sup>

### Can I find out how my state or tribe spends its Section 319 dollars?

Yes. States and tribes are required to report annually on their progress in meeting nonpoint source management program milestones. This report should include information on reductions in nonpoint source pollution, improvements in water quality as a result of program activities, and information about projects funded through the program. **Contact your state or tribal Section 319 coordinator and request the most recent report.**

### Can I influence how Section 319 money is spent?

Yes. The most obvious way to influence grants is to apply for one yourself! Alternatively, **you might support other applicants from your watershed, such as those in underserved communities, by writing a letter of support for their application, providing in-kind support, or otherwise adding value to their project.** In some states, individuals can also participate on an advisory committee that reviews grant proposals and makes program recommendations.

### How do I change the system if I am unhappy with how my state or tribe manages Section 319 funds?

The public participation requirements of the Section 319 program are frustratingly weak. States are not required to hold public hearings or to take comments on the Section 319 grant program. **However, many states do take public comments on their Section 319 program revisions (at least every five years)—giving you a chance to voice your concerns. Other alternatives include meeting with the state agency or elected officials, or expressing your concerns directly to the EPA. Remember, states are required to show “satisfactory progress” in their program before receiving each year’s new funding, and the EPA is charged with reviewing that progress.**

### ACTION CHECKLIST - NONPOINT SOURCE CONTROL GRANTS (SECTION 319)

- Get on the Section 319 grant mailing list.
- Ask how your state or tribe’s Section 319 money is used.
- Ask about Section 319 projects in your watershed. Are the funds coordinating with other efforts such as source water protection, Farm Bill-funded projects, TMDL development, or Clean Water State Revolving Loan Funded projects? Review how the watershed-based project grants are being used to restore or protect watersheds.
- Have Section 319 funds been awarded in urban or rural areas wrestling with environmental injustices such as multiple industrial sites, landfills, abandoned mine drainage, or hazardous waste sites?
- Let community-based organizations know about this money source.
- Support grants for projects in underserved communities in your watershed.<sup>225</sup>



### MATCH REQUIREMENTS

“The Federal share of the cost of each management program implemented with Federal assistance under this subsection in any fiscal year shall not exceed **60%** of the cost incurred by the State in implementing such management program and shall be made on condition that the non-Federal share is provided from non-Federal sources.”<sup>224</sup>



### JUSTICE40 AND SECTION 319

EPA has identified ways that the Section 319 grants can improve access to funds for “disadvantaged communities” through this [memo](#). Consideration of hefty match requirements may be another opportunity.

# STATE LOANS FOR WASTEWATER, NONPOINT SOURCE POLLUTION, AND STORMWATER INFRASTRUCTURE (CLEAN WATER STATE REVOLVING FUND)

The Clean Water Act authorizes federal grants to states to provide low-interest loans for communities, individuals, community groups, nonprofit organizations, and others to improve the quality of water through a wide range of water-quality related projects. These loans are administered through “[Clean Water State Revolving Funds](#)” (CWSRFs).

## What is a “State Revolving Fund?”

Each state and Puerto Rico operates its own capitalized CWSRF.<sup>226</sup> These funds are established with sizable EPA grants and additional funding from state bonds and interest on repaid loans. The CWSRFs operate like banks, providing low-interest loans for water quality improvement projects. In many states, the CWSRF is managed outside of the water quality agency. When this is the case, the role of the agency is to help develop general goals and objectives (short- and long-term), help develop criteria for project prioritization, and review projects for regulatory compliance.

States are given considerable latitude for administration and use of these funds. There are, however, several important federal rules that states must follow. Individuals who know the rules can help make sure states follow them properly and spend the funds effectively.

## How much money is in these funds today?

Annual Congressional appropriations to state CWSRFs fluctuate somewhat. States receive funding based on a formula, and annual funding of base allotments can be found [online](#). In *FY2022*, when historically large investments were made into the CWSRF to address decades of insufficient investment, approximately \$1.6 billion was allocated to assist states, tribes, and territories with infrastructure projects to improve water quality across the U.S.

## Can tribes apply for CWSRF?

The Clean Water Act authorized the [Clean Water Indian Set-Aside Grant Program \(CWISA\)](#) in 1987 to fund wastewater infrastructure specifically for tribes and Alaska Native Villages. This program is implemented in cooperation with the Indian Health Service (IHS). Tribes must report their wastewater infrastructure needs to the IHS Sanitation Deficiency System, and EPA then uses those priority lists to select CWISA projects.



## ORIGINS OF THE CLEAN WATER STATE REVOLVING FUND

When Congress passed the Clean Water Act in 1972, it made a historic financial commitment to help local governments construct and rehabilitate sewage collection and treatment facilities. This commitment yielded huge benefits for waters across the nation. However, by the mid-1980s, the federal government decided to convert the grants to revolving loan funds. Instead of paying directly for sewage treatment works, the federal government would “capitalize” CWSRF programs. States would make low-interest loans, not grants, to local governments. States were expected to ensure the financial stability of these programs and to ensure that funded projects were environmentally sound and cost-effective—consistent with national policies for the responsible use of federal money. These ideas became law when the Clean Water Act was amended in 1987, and the CWSRF program was established.

The change from grants to loans, coupled with disinvestment in maintenance and replacement of aging infrastructure over the last several decades, has resulted in many communities with significant water infrastructure needs.



## EPA CWSRF INFOGRAPHIC

[This infographic](#) visually explains the program.





## CLEAN WATER INDIAN SET-ASIDE GRANT PROGRAM RESOURCES

- [Clean Water Indian Set-Aside Program Guidance](#)
- [Clean Water Indian Set-Aside Grant Program: Answers to Frequent Questions](#) – Provides an overview of the program, including project eligibility, funding, and project administration.
- [EPA Regional Clean Water Infrastructure Set-Aside coordinators](#)



The funding increased from 0.5% of the original Construction Grants Program appropriations to 25% of the CWSRF or \$30 million, whichever was greater.<sup>227</sup> In FY2022, an infusion of \$154 million to rectify long overdue improvements to tribal and Alaska Native Village infrastructure came via the Infrastructure Investments and Jobs Act.

### What was expected of the states when the program was established?

Before initially receiving these capitalization grants, states had to demonstrate to the EPA that they had:

- set up financial management procedures necessary to ensure the long-term health of the fund;
- established a system for setting annual priorities for use of the funds;
- put procedures into place for regular, substantive public involvement; and
- established a “NEPA-like process” that loan applicants and state agencies would have to follow.<sup>228</sup>

### What is a “NEPA-like process?”

NEPA stands for National Environmental Policy Act ([p. 151](#)). Passed in 1970, the statute ensures that federal actions are evaluated for environmental impacts. Under NEPA, a proposed federal action with the potential for significant environmental impact is subject to an Environmental Assessment (EA). If the action is deemed likely to have a significant impact, an Environmental Impact Statement (EIS) is required. An EIS is a detailed study of the need for, alternatives to, and impacts of the action. Public involvement is integral to a NEPA process. The public can:

- help determine whether an EIS is required for a project;
- provide environmental, economic, and social information that is important to the decision-making process; and
- express opinions about the crucial judgment calls that public officials must often make after all this information is gathered and evaluated.

A state’s NEPA-like process need not be identical to the federal process, but must rest on the same basic principles. State environmental review procedures must meet minimum requirements:<sup>229</sup>

- Legal foundation
- Interdisciplinary approach
- Decision documentation
- Public notice and participation
- Alternatives consideration

Without a sound environmental review process, CWSRF money may be wasted on poorly-conceived or unnecessarily expensive projects. Many states have included a checklist of specific environmental requirements in their CWSRF regulations (e.g., no adverse cumulative impact to receiving waters) that projects must meet before they can be funded. Individuals can help to ensure that their state enforces requirements on this checklist thoroughly.

### What types of projects are eligible for CWSRF?

Eleven types of projects are [eligible for CWSRF funds](#).

A municipality or inter-municipal, interstate, or state agency can apply for these kinds of projects:

- Construction of publicly owned treatment works (POTWs)
- Reducing demand for POTW capacity through water conservation, efficiency, and reuse
- Increase energy efficiency of POTWs  
Energy efficiency

A public, private, or nonprofit entity can apply for these kinds of projects:

- Nonpoint source pollution—public, private, or nonprofit entity
- National Estuary Program projects—public, private, or nonprofit entity
- Decentralized wastewater treatment systems—public, private, or nonprofit entity

- Stormwater—public, private, or nonprofit entity
- Watershed pilot projects
- Water reuse projects
- Security measures at POTWs
- Technical assistance to POTWs to obtain CWSRF funding (only nonprofit entity)

EPA has developed numerous [fact sheets](#) on creative applications of CWSRF on public health concerns, cybersecurity measures, resilient infrastructure and communities, and drought resilience, among others.

### Where can I get information about my state's CWSRF?

Many states have extensive information about their SRF program on their websites with links to project scoring systems, environmental review requirements, and other useful program information.

Every year, each state publishes two documents that anyone interested in the SRF program should obtain. The first is the state's **CWSRF annual report**, which shows how much money was spent on projects, and for what purposes, during the past year. The second is the state's annual **Intended Use Plan (IUP)**, which lists projects and priorities for future loans, referred to as the Project Priority List (PPL). Some states publish the PPL as a separate document. You may also want to obtain a copy of the state's **capitalization grant agreement** with the EPA, which spells out the terms of the program.

### What if my state is not following the CWSRF rules?

If a state fails to follow EPA rules or meet all conditions of its capitalization grant agreement, the EPA may issue a "finding of noncompliance." If such a finding is made, the regional administrator must prescribe the necessary corrective action. EPA's corrective action must remedy the specific instance(s) of noncompliance and require adjustments in program management to avoid similar problems in the future. If the state fails to take the required corrective actions within 60 days, new SRF grant funds may be withheld. If the state fails to take the necessary actions within twelve months, any funds withheld must be reallocated to other states.<sup>230</sup>



## EQUITABLE INFRASTRUCTURE INVESTMENT

With the unprecedented levels of infrastructure funding during 2022 came pressure to invest those funds in communities that have been overlooked for decades and are in dire need of immediate solutions. Several sources of information on the efforts to direct the funds to those who need them most include:

- [Thriving in Place Through Water Investment: Principles for Equitable Infrastructure](#) – US Water Alliance
- [From ARPA to IIJA - Fulfilling the Promise of Equity](#) – PolicyLink
- [How Equity Isn't Built Into the Infrastructure Bill—and Ways to Fix It](#) – Brookings Institution

River Network has developed an [Equitable Water Infrastructure Toolkit](#) that provides information about utilities, infrastructure, affordability, and decision-making.



## TYPES OF CWSRF ASSISTANCE

The CWSRF can offer the following financial assistance options:

- Low-interest/interest-free loans
- Purchase of debt or refinancing
- Guarantees and insurance to improve credit market access
- Guarantee CWSRF revenue debt
- Provide loan guarantees to local agencies
- Additional subsidization as forgiveness, negative interest loans, or grants
- Earn interest



## INTENDED USE PLAN RULES

The rules for state SRF Intended Use Plans (IUPs) are found at 40 C.F.R. § 35.3150.

“(a) Purpose. The State must prepare a plan identifying the intended uses of the funds in the SRF and describing how those uses support the goals of the SRF. This Intended Use Plan (IUP) **must be prepared annually and must be subjected to public comment** and review before being submitted to EPA. EPA must receive the IUP prior to the award of the capitalization grant.

(b) Contents—

- (1) List of projects.
  - (i) The IUP must contain a list of publicly owned treatment works projects on the State's **project priority list** developed pursuant to section 216 of the Act, to be constructed with SRF assistance. This list must include: the name of the community; permit number or other applicable enforceable requirement, if available; the type of financial assistance; and the projected amount of eligible assistance.
  - (ii) The IUP must also contain a **list of the nonpoint source and national estuary protection activities under Sections 319 and 320 of the Act that the State expects to fund from its SRF.**<sup>231</sup>

## ACTION CHECKLIST – CLEAN WATER STATE REVOLVING FUND

- Review some or all of the following documents—especially your state’s environmental review process and minimum federal requirements—for consistency.
  - a.** The guidelines for your state’s “NEPA-like process” and the letter from the EPA regional administrator who approved it.
  - b.** The most recent CWSRF Annual Report for your state.
  - c.** The current Intended Use Plan for CWSRF funds in the coming year, including the project priority list.
  - d.** Your state’s CWSRF capitalization grant agreement with the EPA.
  - e.** Your state’s rules regarding the administration of the CWSRF program.
  - f.** [Title VI of the Clean Water Act](#)
  - g.** [The regulations supporting it at 40 C.F.R. § 35, Subpart K](#)
- Encourage your state to address environmental injustice and lack of investment in under-resourced communities.
- Bring any inequities, inconsistencies, and their potential consequences to the attention of the state, the EPA, statewide public interest organizations, and community-based organizations that are affected.
- Get a copy of your state’s nonpoint source pollution management plan ([p. 140](#)). Encourage your state to prioritize [CWSRF projects that implement the plan](#).
- Find out whether your state required any assessment of environmental, social, and economic consequences of CWSRF projects in the past year.
- Find out what criteria your state uses in determining whether a CWSRF project requires an official examination of environmental impacts.
- Find out what CWSRF projects are currently proposed for your area. Take advantage of the public involvement procedures in your state’s “NEPA-like process” to advocate for equitable, environmentally sound, cost-effective SRF projects that address important problems in your watershed—especially in areas that have been under-resourced.
- Identify and offer support for proposed CWISA projects in your region.
- Find out when the public comment period regarding the next Intended Use Plan will occur.
- During that period, submit written comments and/or appear at the public hearing to advocate for projects you support and to support community-based organizations doing the same.



### CORRECTIVE ACTION

See 40 C.F.R. § 35.3170 for the rules regarding EPA’s obligation to take corrective action when deficiencies with CWSRF programs are apparent.

- 1 All fifty states, the District of Columbia, the U.S. Territories, and a growing number of Native American tribes are authorized to administer the water quality standards program.  
2 40 C.F.R. § 122.44(d)  
3 40 C.F.R. § 131.2
- 4 Water Quality Standards Handbook, Chapter 5.**  
5 40 C.F.R. § 131.5(b) 5 CWA Section 303(c)(3)-(4), 40 C.F.R. § 131.20-22  
6 Alaska Clean Water Alliance v. Clark, No. C96-1762R (W.D. Wash)  
7 40 C.F.R. § 131.6  
8 40 C.F.R. § 131.8(a)  
9 CWA Section 303(c)(1)  
10 40 C.F.R. § 131.10(a)  
11 **EPA – Revising the Federal Water Quality Standards Regulations to Protect Tribal Reserved Rights**  
12 40 C.F.R. § 131.3(e)  
13 WQS Handbook, 4.4  
14 40 C.F.R. § 131.3(f)  
15 40 C.F.R. § 131.10(i)  
16 40 C.F.R. § 131.10(a)  
17 CWA, Section 303(c)(2)(A), 40 C.F.R. § 131.10(a), WQS Handbook, 2.1.6  
18 CWA, section101(a)(2)  
19 WQS Handbook 2.1  
20 40 C.F.R. § 131.20(a)  
21 40 C.F.R. § 131.3(e-f)  
22 40 C.F.R. § 131.12(a)(1), see p. 35  
23 40 C.F.R. § 131.10(a)  
24 40 C.F.R. § 131.10(h)  
25 40 C.F.R. § 131.10(j)  
26 40 C.F.R. § 131.10(h)  
27 40 C.F.R. § 131.3(g)  
28 40 C.F.R. § 131.10(j)  
29 Waters are also impaired if the antidegradation policy is not met, however, not one single state assesses or reports violations of the antidegradation policy or includes them on their impaired waters list (Section 303(d)).  
30 40 C.F.R. § 131.11(a)(1)  
31 WQS Handbook, Chapter 3.5.1.  
32 Colorado River Watch certification, CWA module, p.33.  
33 40 C.F.R. § 131.35(e)(3)  
34 CWA Section 304(a)(1)  
35 **Human Health Criteria Calculation Matrix: National Recommended Water Quality Criteria: 2002**  
36 National Environmental Justice Advisory Council Meeting, **Fish Consumption and Environmental Justice**, November 2002  
37 40 C.F.R. § 122.4(i)  
38 **OAC 3745-1-51**  
39 **40 C.F.R. § 131.14**  
40 40 C.F.R. § 122.44(d)  
41 Originally 40 C.F.R. § 130.17, refined in 1983 40 C.F.R. § 131.12  
42 40 C.F.R. § 131.12(b)  
43 Water Quality Standards Handbook, Chapter 4.  
44 40 C.F.R. § 131.12  
45 40 C.F.R. § 131.12(3)  
46 40 C.F.R. § 131.12(a)(2)(i)  
47 Water Quality Standards Handbook, 4.5.  
48 **Greater Yellowstone Coalition v. EPA, Case No. 4: 12-cv-60 (p. Idaho)**  
49 WQS Handbook, 4.7  
50 Water Quality Standards Handbook, 4.5.  
51 CWA Section 101(a)(2)  
52 40 C.F.R. § 131.6  
53 40 C.F.R. § 131.21  
54 40 C.F.R. § 131.22  
55 Water Quality Standards Handbook, 4.3  
56 40 C.F.R. § 131.20(a)  
57 We have chosen to include **variances** and **mixing zones** in the NPDES sections, but the authorizing language and specifics for how they can be used are part of the water quality standards.  
58 CWA section 304(a)  
59 40 C.F.R. § 131.20(a)  
60 40 C.F.R. § 131.20(b)  
61 40 C.F.R. § 122.1(b)(1)  
62 40 C.F.R. § 123  
63 CWA Section101(a)(1)  
64 40 C.F.R. § 122.2  
65 40 C.F.R. § 122.2  
66 40 C.F.R. § 122.3  
67 CWA Section 101(a)(1)  
68 Major industrial dischargers include those who have their own treatment works and do not send their wastes to a municipal sewage treatment plant.  
69 40 C.F.R. § 122.28  
70 40 C.F.R. § 122.28(a)(2)  
71 40 C.F.R. § 122.28(b)(3)  
72 40 C.F.R. § 122.28(b)(3)  
73 CWA, Section 301(b)(2); All publicly-owned treatment works are required to at least meet secondary treatment. Levels of control are explained in more **detail**.  
74 This is the assimilative capacity of the water body. How much more of a particular pollutant can the water body receive without violating established water quality criteria and/or harming existing or designated uses.  
75 40 C.F.R. § 122.44(d)(1)(i)  
76 Water Quality Standards Handbook, Chapter 5.1.  
77 40 C.F.R. § 125.58(dd)  
78 This refers to where EPA regulates industrial discharge into municipal wastewater treatment facilities.
- 79 EPA Combined Sewer Overflow Policy 59 Federal Register No 75, 18688, April 19,1994  
80 **Sanitary Sewer Overflows (SSOs) | US EPA**  
81 EPA NPDES Permit Writers' Manual Chapter 5, p. 5-15, September 2010  
82 40 C.F.R. Part 440  
83 40 C.F.R. § 436  
84 40 C.F.R. § 434  
85 These process waters are classified as technologically-enhanced naturally occurring radioactive material (**ITENORM**).  
86 40 C.F.R. Part 435  
87 40 C.F.R. § 403.5  
88 40 C.F.R. § 435 Subpart D  
89 See 40 C.F.R. Part 437  
90 40 C.F.R. § Part 140  
91 40 C.F.R. § 122.23  
92 CWA Section 402(p)(2)(E)  
93 CWA Section 402(p)(2)(E)  
94 CWA Section 402(p)(3)(B)(iii)  
95 40 C.F.R. § 122.26(d)  
96 CWA, Section 402(p)(3)(B)  
97 40 C.F.R. § 122.34  
98 40 C.F.R. § 122.34  
99 40 C.F.R. § 1.22.26(d)  
100 CWA Section 402(i)(2)  
101 40 C.F.R. § 122.26(b)(14)(i)-(xi)  
102 40 C.F.R. § 122.26(g)  
103 40 C.F.R. § 122.26(b)(15)(ii)  
104 **Federal Construction and Development Permit Effluent Guidelines**  
105 40 C.F.R. § 450.21  
106 40 C.F.R. § 450.21  
107 40 C.F.R. § 450.21  
108 Community-based Construction Watchdog Program, **Get the Dirt Out**  
109 40 C.F.R. § 122.4(i)  
110 40 C.F.R. § 124.10 (d)  
111 The water quality inventory and threatened and impaired waters list are combined every two years in each state's (and some tribe's) biennial Integrated Report.  
112 CWA Section 402(o)  
113 40 C.F.R. § 122.4(i)  
114 40 C.F.R. § 122.62(a)  
115 40 C.F.R. § 122.41(a), 40 C.F.R. § 19.4; Some of these fees are now annually updated.  
116 **Civil Monetary Penalties Inflation Adjustments for 2022**  
117 33 U.S.C § 1344  
118 Rivers and Harbors Act of 1899.  
119 40 C.F.R. part 230  
120 40 C.F.R. § 230.1(c)  
121 40 C.F.R. § 230.10(b)(1)  
122 40 C.F.R. § 230.10(b)(2)  
123 40 C.F.R. § 230.10(b)(3)  
124 40 C.F.R. § 230.10(b)(4)  
125 40 C.F.R. § 230.10(c)  
126 40 C.F.R. § 230.10(d), (40 C.F.R. § 230.70-77)  
127 40 C.F.R. § 320.10(a)(2)  
128 40 C.F.R. § 230.12(a)(3)(i)  
129 40 C.F.R. § 230.10(a)(3)  
130 40 C.F.R. § 230.10(a); Northwest Environmental Defense Center v. Wood, 947 F. Supp. 137 1, 1374 (D. Or. 1996)  
131 33 C.F.R. § 320.4(a)(1)  
132 40 C.F.R. § 230.7(a)  
133 40 C.F.R. § 230.7(b)(1)  
134 40 C.F.R. § 230.40-45  
135 40 C.F.R. § 230.1(d).  
136 40 C.F.R. § 230.11(g)(2)  
137 CWA Section 402(f)(1), 40 C.F.R. § 232.3(c)  
138 CWA Section 404(f)(2), 40 C.F.R. § 232.3(a)-(b)  
140 40 C.F.R. § 230.11(g)(2)  
141 CWA Section 104(b)(3)  
142 40 C.F.R. § 233  
143 CWA Section 401(a)(1)  
144 **For more information on the Rivers and Harbors Act of 1899, Sections 9 and 10.**  
145 S.D. Warren Co. v. Maine Bd. of Env't Prot., 547 U.S. 370, 376 (2006).  
146 See NPDES permitting section for a discussion of the definition of a "discharge of pollutants."  
147 Or. Natural Desert Ass'n v. Dombeck, 172 F.3d 1092 (9th Cir. 1998) and Or. Natural Desert Ass'n v. USFS, 550 F.3d 778 (9th Cir. 2008).  
148 CWA Section 401(a)(1)  
149 PUD No.1 of Jefferson County v. Washington Dept. of Ecology, 511 U.S. 700, 723 (1994).  
150 America Rivers v. FERC, 129 F.3d 99 (2nd Cir. 1997).  
151 33 U.S.C. § 1341(a)(1), (d)  
152 CWA Section 401(a)(1)  
153 CWA Section 401(d)  
154 CWA Section 505(f)(6)  
155 **PUD No. 1 of Jefferson County v. Washington Department of Ecology**  
156 CWA Section 401(a)(1)  
157 CWA Section 505(f)(6)  
158 CWA Section 401(a)(1)  
159 CWA Section 505(f)(6)  
160 CWA Section 505(f)(6)  
161 CWA Section 401(a)(1)  
162 40 C.F.R. § 130.7(b)(3)  
163 40 C.F.R. § 130.7(b)(5)(ii)  
164 CWA 303(d)(1)(A), 40 C.F.R. § 130.7(b)
- 165 40 C.F.R. § 130.16  
166 <https://www.epa.gov/waterdata/known-our-waters-tribal-reporting-under-305b>  
167 40 C.F.R. § 130.8  
168 Guidance for 2004 Integrated Report  
169 Critical conditions are those that are most likely to result in water quality impairments, for example, the hottest days, the lowest streamflow, or the most intense rainfall.  
170 40 C.F.R. § 130.7(b)(4)  
171 EPA's Guidance for Water Quality-based Decisions: The TMDL Process, 1991.  
172 40 C.F.R. § 122.4(i)  
173 Guidance for 2004 Integrated Report  
174 40 C.F.R. § 122.4(i)  
175 40 C.F.R. § 130.7  
176 Use **EPA's Resources, Tools, and Databases about Impaired Waters and TMDLs**  
177 40 C.F.R. § 130.7(b)(5)  
178 40 C.F.R. § 130.7(b)(5)(iii)  
179 40 C.F.R. § 130.7(c)(1)  
180 The Integrated Report is a biennial report to EPA from the states and some tribes on the status of water quality in each jurisdiction that assesses whether designated uses are supported and summarizes waters that are threatened and impaired. The report is a combination of two CWA requirements (Section 305(b) and 303(d)).  
181 (**Integrated Report Guidance**, see **2006**).  
182 **Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, July 29, 2005**. CWA makes a distinction between pollution and pollutant related to TMDLs. CWA Section 502  
183 **Information Concerning 2016 CWA Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions, p.8.**  
184 40 C.F.R. § 130.7(c)(1)(i)  
185 2004 Integrated Report Guidance  
186 40 C.F.R. § 130.7(c)(1)  
187 40 C.F.R. § 130.7(c)(1)(ii)  
188 40 C.F.R. § 130.7(c)(1)(i)  
189 CWA, Section 303(d)(1)(c)  
190 40 C.F.R. § 130.2(e)-(f)  
191 CWA, Section 505  
192 40 C.F.R. § 122.4(i)  
193 40 C.F.R. § 130.7(c)(1)(ii)  
194 In addition to CWA, the Clean Air Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, the Endangered Species Act, and the Surface Mining Control and Reclamation Act also have "citizen suit" provisions.  
195 CWA Section 505(g)  
196 CWA Section 505(a)  
197 Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, 108 S. Ct. 376 (1987)  
198 CWA Section 505(a)  
199 CWA Section 505(b)(1)(B), 40 C.F.R. § 135.2  
200 American Bar Association **Public Interest Centers** website is not exclusively environmental in focus, but it provides many options.  
201 40 C.F.R. § 135.3(a)  
202 40 C.F.R. § 135.3(b)  
203 40 C.F.R. § 135.3(c)  
204 40 C.F.R. § 122.4; 40 C.F.R. § 19.4  
205 Friends of the Earth, et al., v. Laidlaw Environmental Services Inc., 120 S.Ct. 693 (2000)  
206 **Administrative Procedures Act**  
207 Section **319 Guidance (2013)**  
208 **EPA's Basic Information about Nonpoint Source Pollution website**  
209 Section **319 Guidance (2013)**  
210 CWA Section 319(b)(2)(A)-(C)  
211 CWA Section 319(h)(8)  
212 <https://www.epa.gov/nps/319-grant-program-states-and-territories>  
213 CWA Section 518(f)  
214 **Tribal Nonpoint Source Programs (2019)**.  
215 **Section 319 Guidance (2013)**  
216 **Coastal Zone Act Reauthorization Amendments 1990**  
217 The Section 319 Guidance also encourages coordination with many other CWA programs including: NPDES, WQS, NEP, 404, many basin specific CWA sections (Chesapeake (117), Great Lakes (118), Long Island Sound (119), Lake Champlain (120), Lake Pontchartrain (121), Clean Lakes Program (314), Mississippi/Gulf of Mexico Watershed Nutrient Task Force's Action Plan; Water Quality Management planning grants (604b), and Section 106 funds.  
218 **Water Pollution Control Grants (Section 106)**  
219 If a tribe has 640,000 acres or fewer of land, the allocation is \$30,000. If a tribe has more than 640,000 acres, the allocation is \$50,000.  
220 CWA Section 319(h)(8)  
221 **Tribal Nonpoint Source Programs (2019)**.  
222 **Section 319 Guidance (2013)**  
223 **Current Tribal Section 319 Grant Information**  
224 CWA Section 319(h)(3)  
225 North Carolina awards extra points to **Section 319** applicants when projects benefit underserved communities.  
226 The District of Columbia, U.S. Virgin Islands, American Samoa, Guam, and the Commonwealth of Northern Marianas receive direct grant funding from this program.  
227 **Clean Water Indian Set-Aside Program: CWISA Program Funding (pdf)** from 2013-2022.  
228 40 C.F.R. § 35.3140(b)  
229 40 C.F.R. § 35.3140  
230 40 C.F.R. § 35.3170  
231 40 C.F.R. § 35.3150(a) and (b)(1)

# COORDINATION WITH OTHER FEDERAL (and some state) LAWS

3

PART

COORDINATION WITH OTHER FEDERAL (AND SOME STATE) LAWS



The Clean Water Act is not the only tool that can be used to restore and protect water bodies. Here, we introduce and explain several other laws that individuals can use to help improve water quality and watershed health.

## 1 ***Safe Drinking Water Act of 1974***

Passed two years after the Clean Water Act, the Safe Drinking Water Act (SDWA) of 1974 was enacted in response to outbreaks of waterborne disease and increasing chemical contamination of public water sources. The SDWA authorizes the EPA to set maximum contaminant levels (MCLs) for dangerous chemicals, waterborne bacteria, and viruses in the public's drinking water. In 1996, Congress strengthened the SDWA by requiring water suppliers to prepare Source Water Assessments which tell their consumers where their water comes from, what contaminants are in it, and whether the water poses a risk to public health. These Source Water Assessments are supposed to identify risks to all water resources used (or to be used) as drinking water supplies. Every state developed a Source Water Assessment Plan setting priorities and laying out a process for completion of the assessments. The revised law also added several other new protections that protect drinking water all the way from the source to the tap. It required, for example, new standards to protect the public from potentially deadly microbes like cryptosporidium. In 2001, the EPA set a new arsenic standard of 10 parts per billion. This decision was at first suspended by the Bush Administration, but was later reaffirmed. Continued efforts are needed to address many other threats to drinking water supplies such as PFAS, groundwater contamination by the gasoline additive MTBE, pharmaceuticals in municipal wastewater, and toxic contaminants in stormwater discharges.

### MAJOR AMENDMENTS:

- 1986 – [\*Safe Drinking Water Act Amendments of 1986\*](#)
- 1996 – [\*Safe Drinking Water Act Amendments of 1996\*](#)
- 2016 – [\*The Water Infrastructure Improvements for the Nation Act \(WIIN Act\) Grant Programs | US EPA\*](#)

**CLEAN WATER ACT CONNECTION:** Public water supply is one of the fundamental uses that is protected by the Clean Water Act. The Safe Drinking Water Act complements the Clean Water Act by requiring the assessment of the quality of and risks to public drinking water supplies. The SDWA also sets drinking water quality treatment standards that states, localities, and water suppliers must meet. The EPA enforces this process. The CWA assumes that public water supplies will be treated, so the CWA criteria for supporting public water supplies focuses on pollutants that might not be treated adequately by the required treatment processes. The Source Water Assessment Plans have information that can and should be used in the writing of permits (especially in determining mixing zones) and the development of TMDLs.



## 2 **National Environmental Policy Act of 1969**

The National Environmental Policy Act (NEPA) is the foundation of federal efforts to protect the environment. The Act requires all federal agencies to examine the need for, alternatives to, and environmental consequences of all major proposed federal actions. NEPA requires federal agencies to disclose the environmental effects of their proposed actions and to include the public in their decision-making. The Act also established the White House **Council on Environmental Quality** (CEQ), which has primary responsibility for overseeing NEPA implementation.

Many states have developed and adopted **state environmental policy acts** that require environmental review for state, local, and/or private project proposals.

NEPA can be a powerful tool to address both climate change and **environmental injustice**. (see sidebar) First, if an agency determines that a federal action will have an incremental effect on climate change, the resulting NEPA analysis must use a scientifically accepted method to calculate and analyze the project's greenhouse gas emissions.<sup>1</sup> Second, because Executive Order 12898<sup>2</sup> requires that

agencies make environmental justice part of their mission by identifying agency actions that place a disproportionate burden on low-income communities and communities of color, NEPA analyses should include an environmental justice assessment that can be reviewed by courts as part of a NEPA challenge.

### **MAJOR AMENDMENTS:**

- 1975
- 1982

**CLEAN WATER ACT CONNECTION:** When federal land managers make decisions on proposed logging, grazing, and mining activities, they must conduct a NEPA review to assess impacts on water quality and other environmental impacts. The U.S. Army Corps of Engineers uses NEPA as it weighs decisions on proposed dams, flood control, development, and other water resource projects that impact water quality. Federal officials must use NEPA in concert with parts of the Clean Water Act when it involves federal decisions such as with water quality standards approvals, EPA-issued NPDES permits, Corps-issued dredge and fill permits, and water quality certification. Individuals can also use information gathered under NEPA in developing TMDLs for all relevant pollution sources in watersheds.



NEPA challenges can lead to mixed results for environmental justice and climate advocates because such claims are reviewed under a very agency-friendly standard; however, two recent victories highlight the statute's potential to drive change. In *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*<sup>3</sup>, the D.C. District Court held that the Army Corps violated NEPA by authorizing permits for the Dakota Access Pipeline without properly considering the pipeline's impact on the Standing Rock Indian Reservation and ordered a more detailed analysis.<sup>4</sup> Several years later, the D.C. Circuit held that the Federal Energy Regulatory Commission (FERC) violated NEPA when it authorized two liquid natural gas export terminals without properly considering greenhouse gas emissions of the terminals or the disproportionate hazards they would pose to the predominantly Hispanic community surrounding the facility.<sup>5</sup> As a result of its loss in that case, FERC began to reevaluate its approach to environmental justice issues, creating an Office of Public Participation to solicit broader participation from affected communities during the permitting process.

### 3 **Environmental Justice and *Title VI of the Civil Rights Act of 1964***

Title VI of the Civil Rights Act of 1964 requires federal agencies to ensure that no programs or activities receiving federal financial assistance discriminate on the basis of race, color, or national origin. Courts have ruled that Title VI guarantees the fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Communities rely on Title VI as a means to address racial discrimination in the permitting and siting of facilities that release hazardous pollutants and cause environmental health risks.

Title VI contains two provisions that have different standards for discrimination. Section 601 prohibits only intentional discrimination, a very high standard that is difficult to meet in most circumstances. Section 602 is more broad, allowing agencies to prohibit activities that have discriminatory effects, regardless of the motivation for the activity. In 2001, however, the Supreme Court held that private individuals can only sue under §601, not §602.<sup>5</sup> Instead, the individual must file an administrative complaint with EPA's External Civil Rights Compliance Office and allow the agency to pursue an investigation. See "[How to File a Complaint of Discrimination](#)" for more information.

**CLEAN WATER ACT CONNECTION:** Since the early 1990s, the EPA has received increasing numbers of complaints that state pollution control permits violate Title VI by dumping a disproportionate amount of contamination into communities of color or low income communities. Policies or practices that seem neutral, but result in discriminatory effects, violate Title VI regulations unless it is shown that the policies or practices are justified and that there is no less-discriminatory alternative.

### 4 **Emergency Planning and Community Right-to-Know Act of 1986**

Congress passed the Emergency Planning and Community Right-to-Know Act (EPCRA) to help communities deal safely and effectively with the many hazardous substances that are used in their neighborhoods, towns, and watersheds. The Act outlines reporting requirements for the storage of hazardous chemicals and requires communities to develop emergency plans to respond to chemical accidents. The law created the [Toxic Release Inventory \(TRI\)](#), which is an online database that allows users to simply type in their zip code and get details about the release of certain toxic chemicals (sidebar at right). It is based on the notion that the public has a "right to know" what pollutants are added to the environment, especially in their own neighborhoods.

#### MAJOR AMENDMENTS:

- 2018 – [America's Water Infrastructure Act](#)
- 2020 – [National Defense Authorization Act](#)

**CLEAN WATER ACT CONNECTION:** Emergency plans developed to respond to chemical accidents and spills should include protection of water bodies. Reports on hazardous substances and storage facilities provide local governments and the public with information about possible chemical hazards in local watersheds. This information can be used to determine whether existing or designated uses are supported, if criteria are met, if permits are sufficiently protective (especially in mixing zones), where communities are inordinately burdened by numerous toxic releases, and whether TMDLs include all relevant sources.



#### [Toxics Release Inventory](#)

On an annual basis, the EPA and states are required to collect information regarding the releases and transfers of certain toxic chemicals from industrial facilities. This information is available to the public through the Toxics Release Inventory (TRI). Information is available on chemicals for many industries including manufacturing, metal and coal mining, electric utilities, and commercial hazardous waste treatment. You can search for releases by zip code. The 2018 amendments required that community water systems receive prompt notification of any reportable release of particular hazardous substances and have access to hazardous chemical inventory data.



## 5 Environmental Rights Laws (State Level)

### PENNSYLVANIA

Under the Constitution of Pennsylvania, “The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the commonwealth shall conserve and maintain them for the benefit of all the people.”

#### CLEAN WATER ACT CONNECTION:

The state constitution places a duty on the Pennsylvania government as trustee of all public natural resources. The Pennsylvania Department of Environmental Protection’s Bureau of Clean Water is responsible for protecting and preserving the waters of Pennsylvania, including 86,000 miles of streams and lakes.

### CALIFORNIA

With the passage of AB 685 in 2012, California became one of the first states to recognize the human right to water. California now has a comprehensive law guaranteeing the right to safe, affordable water without discrimination, prioritizing water for personal and domestic use, and delineating the responsibilities of public officials at the state level.

#### CLEAN WATER ACT CONNECTION:

Since the 1950s, the state Department of Water Resources has managed and protected water through planning and conservation efforts and the State Water Board has administered water rights and regulated water quality.

### NEW YORK

In 2021, New York approved an environmental rights amendment to its state constitution, explicitly protecting every person’s fundamental right to clean air, clean water, and a healthful environment. The amendment recognized that even when environmental laws exist and are being applied, they do not protect low-income communities and communities of color where environmental conditions have been unhealthy for generations.

#### CLEAN WATER ACT CONNECTION:

New York’s Environmental Rights Amendment was intended to fill gaps in the state’s existing regulatory scheme and address environmental justice issues. For example, for decades residents of Hoosick Falls near Albany were drinking water contaminated with the carcinogens per- and poly-fluorinated alkyl substances (PFAS). The state was unable to intervene because there were no water quality standards for these carcinogens and therefore the contaminated water did not violate the law.

### WASHINGTON

The Healthy Environment for All (HEAL) Act passed in 2021 was the first statewide law designed to reduce environmental and health disparities in the state and improve the health of all its residents. The law created an Environmental Justice Council to bring forward the voices of disproportionately impacted communities to inform the state’s environmental justice efforts.

#### CLEAN WATER ACT CONNECTION:

The HEAL Act will ensure that water quality standards are applied evenly across Washington’s 74,000 miles of rivers and streams, 4,000 lakes, and 3,000 square miles of marine estuaries.

## 6 **Public Trust Doctrine**

The Public Trust Doctrine is a common law doctrine, which is a law based on legal precedents established by the courts rather than through legislation. The legal right of the public to use certain submerged lands and waters is the essence of the Public Trust Doctrine. The right may be concurrent with private ownership. The legal interest of the public is not absolute; it is determined by a balancing of interests. Under the Public Trust Doctrine, polluters are liable to compensate the public for lost use or reduced functions of tidal lands, waterways, groundwater, wetlands, wildlife, and fisheries that rightly belong to the people.

**CLEAN WATER ACT CONNECTION:** The CWA requires that the health and use of the nation's waters must be protected for the public. Individuals can use the Public Trust Doctrine to challenge state decisions and actions that are harmful to water bodies. In doing so, they can force state agencies to consider the natural resources held in the public trust more carefully.

## 7 **Resource Conservation and Recovery Act of 1976**

The Resource Conservation and Recovery Act (RCRA) gave the EPA the authority to control hazardous waste from “cradle to grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA established three distinct programs to address solid waste, [hazardous waste](#), and [underground storage tanks](#). RCRA focuses only on active and future facilities and does not address abandoned or historical sites.

The Resource Conservation and Recovery Act (RCRA) is the bedrock federal statute regulating the disposal and management of hazardous chemicals. However, in the 1980s, the EPA specifically excluded oil, gas, and geothermal wastes (drilling fluids, produced waters, and other wastes associated with the exploration and development of crude oil, natural gas, or geothermal energy) from being considered “hazardous” under RCRA. (Note that if exempt (e.g. oil and gas wastes) and nonexempt hazardous wastes are mixed, this will often cause the entirety of the waste to be deemed nonexempt.) Solid wastes generated from crude oil and natural gas exploration and production are generally subject to regulation under Subtitle D of RCRA and state regulations. Despite sweeping federal exemptions beyond Subtitle D, some [state governments](#) have specific regulations and guidance for exploration and production wastes.

**CLEAN WATER ACT CONNECTION:** The 1986 amendments to RCRA enabled the EPA to address water contamination that could result from leaking underground tanks storing petroleum and other hazardous substances. All RCRA cleanups must be performed to reduce the likelihood that hazardous and nonhazardous substances will ever leach into groundwater or run over the ground to contaminate larger surface water bodies. RCRA activity may jeopardize existing or designated uses, and therefore water quality standards should be considered in all decisions regarding the cleanup and management of contaminated sites. Discharge permits and TMDLs must take RCRA activity into account when evaluating cumulative impacts and watershed-wide sources of contamination. Coal ash may be dealt with as nonhazardous under RCRA or hazardous under CERCLA. As mentioned above, oil and gas wastes are mostly regulated by RCRA. At former nuclear weapons sites, billions of dollars in cleanup funds are spent annually under RCRA to remove radioactive and hazardous contaminants that threaten water bodies at levels that violate Clean Water Act standards.

### MAJOR AMENDMENTS:

- 1984 – [Hazardous and Solid Waste Amendments of 1984](#)
- 1986 – [addressed non-hazardous waste, underground petroleum storage tanks, and other hazardous materials](#)
- 1991 – [Federal Facility Compliance Act of 1991](#)
- 1996 – [Land Disposal Program Flexibility Act of 1996](#)
- 2005 – [Energy Policy Act of 2005 and Underground Storage Tanks \(USTs\) | US EPA](#)
- 2012 – [Hazardous Waste Electronic Manifest Establishment Act](#)

## 8 **Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Superfund)**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) created the federal “Superfund” program to pay for the cleanup of uncontrolled or abandoned hazardous waste sites, as well as the cleanup of accidents, spills, and other emergency releases of pollutants and contaminants into the environment. The Act empowers EPA to identify all parties responsible for any release and seek their cooperation in the cleanup. The EPA cleans up orphan sites when responsible parties cannot be identified or located, or when they fail to act. The law created a tax on polluters to fund cleanup of abandoned sites, but Congress stopped collecting the tax in 1995. Between 1999 and 2013, annual appropriations to the Superfund program decreased from \$2 billion to \$1.1 billion. As a result, the EPA has been limiting taxpayer-funded cleanup activities under CERCLA. Instead, EPA has focused its efforts on requiring the responsible parties to clean up contaminated sites through orders, consent decrees, or other settlements. Once a “response action” has been completed, the EPA recovers cleanup costs from financially viable individuals and companies.

The law also led to the revision of the National Contingency Plan for responding to releases and threatened releases of hazardous substances, pollutants, or contaminants, and that plan established a [National Priorities List](#) for long-term remedial response actions.

**CLEAN WATER ACT CONNECTION:** CERCLA requires the cleanup of toxic sites, which frequently are located in or next to waterways and which often have contaminated a ground or surface water source that may still be in use. The two laws overlap substantially at sites involving contaminated sediment—surface water discharges can exacerbate sediment contamination and contaminated sediment can provide a continuous source of pollutants to the waterway. Superfund sites may jeopardize existing or designated uses, and therefore water quality standards should be considered in the cleanup and management of sites. Discharge permits and TMDLs

must take CERCLA activity into account when evaluating cumulative impacts and watershed-wide sources of contamination. NPDES permits can also create a CERCLA liability shield for dischargers. Under CERCLA §9607, costs associated with damage from a “federally permitted release,” such as a discharge authorized by a NPDES or §404 permit cannot be recovered under CERCLA.

### MAJOR AMENDMENTS:

- 1986 – [Superfund Amendments and Reauthorization Act](#)
- 2001 – [Small Business Liability Relief and Brownfields Revitalization Act of 2001](#)

## 9 **Oil Pollution Act of 1990**

The Oil Pollution Act (OPA) of 1990 requires oil storage facilities and vessels to submit plans to the federal government that explain how they will respond to catastrophic oil spills. Area Contingency Plans must also be developed to plan oil spill response regionally. EPA published regulations for [aboveground storage facilities](#), also known as [bulk storage containers](#). The [Coast Guard](#) has done so for oil tankers. A tax on oil contributes to a trust fund that is available for oil spill clean up when the responsible party is incapable or unwilling to do so.

**CLEAN WATER ACT CONNECTION:** Oil Pollution Act of 1990 amended CWA regarding oil and hazardous substance spill response. CWA Section 311 authorizes [Spill Prevention, Control, and Countermeasure Rule](#), which requires prevention, preparedness, and response to oil discharges at specific non-transportation-related facilities to prevent the oil from reaching navigable waters and adjoining shorelines. [Facility Response Plans](#) are required of facilities that store and use oil in order to plan for a worst-case oil discharge into waters of the U.S.

## 10 **Electric Consumers Protection Act (ECPA) of 1986**

Thousands of hydropower dams operated by private developers, stockholder-owned utilities, or state or local governments are regulated by the Federal Energy Regulatory Commission (FERC). This federal agency issues 30- to 50-year licenses that specify how dams are to be operated, what minimum levels of water must be allowed to flow through the dams, what forms of fish passage must be installed and, in some cases, how watershed lands are managed. The ECPA of 1986 (an amendment to the Federal Power Act of 1920) requires the Commission to give “equal consideration” to both non-power values (such as the environment, recreation, fish, and wildlife) and power objectives (development, efficiency, etc.) in making a licensing decision. The law also requires FERC to base mitigation for adverse effects on the recommendations of federal and state fish and wildlife agencies and to negotiate with the agencies if disagreements occur.

### **CLEAN WATER ACT CONNECTION:**

The water quality standards that are in place upstream and downstream from hydropower dams should be taken into consideration in the relicensing of a dam. In addition, whether those waters are impaired or meeting those standards, and how the operations of the dam impact the upstream and downstream water quality, especially in the face of climate change, must be included in any license to continue operation.

### **MAJOR AMENDMENTS:**

- [\*\*Energy Policy Act of 1992\*\*](#)
- [\*\*America’s Water Infrastructure Act of 2018\*\*](#)

## 11 **Energy Policy Act of 2005/Natural Gas Act of 1938**

The Natural Gas Act was passed to take control of interstate natural gas transmission and wholesale sales. The Federal Power Commission, which was created in 1920, was given the job to regulate gas rates. The FPC became the Federal Energy Regulatory Commission (FERC) in 1977 and was given additional responsibilities over natural gas sales in intrastate markets, and later over siting and abandonment of interstate natural gas facilities, including pipelines, storage, and environmental matters related to natural gas. In 2005, the Energy Policy Act gave FERC more responsibilities that included exclusive jurisdiction over the siting, construction, and operation of every liquefied natural gas (LNG) terminal.

### **MAJOR AMENDMENT/RELATED LAW:**

- [\*\*Natural Gas Pipeline Safety Act of 1968\*\*](#)
- [\*\*Natural Gas Policy Act of 1978\*\*](#)

### **CLEAN WATER ACT CONNECTION:**

Application of the Clean Water Act to any phase of the natural gas development—exploration through closure—requires the understanding of FERC’s role and responsibilities in siting and abandonment of facilities. FERC’s authority over LNG does not preempt state authority under Clean Water Act section 401 or the Coastal Zone Management Act.

## 12 **Toxic Substances Control Act of 1976**

Thousands of chemicals with unknown toxicity are manufactured each year. Under the Toxic Substances Control Act (TSCA), EPA requires chemical manufacturers to submit a pre-manufacture notice for new chemicals before commercial production begins. When EPA determines that a new or existing chemical poses a health concern, TSCA allows the agency to require manufacturers or importers of the substance to conduct tests that can further inform EPA risk assessments. A 2016 amendment to TSCA specifically addresses the risks posed by emerging contaminants that can bioaccumulate, requiring EPA to take expedited action to reduce the risks of and exposure to certain “persistent, bioaccumulative, and toxic chemicals.”

**CLEAN WATER ACT CONNECTION:** Results from TSCA-required testing can and should be used in the development of numeric and narrative water quality criteria by the EPA and states. These criteria must protect existing and designated uses, including human health and aquatic life and habitat, from toxic contamination.

### **MAJOR AMENDMENTS:**

- 2008 – [\*\*Mercury Export Ban of 2008\*\*](#)
- 2010 – [\*\*Formaldehyde Standards for Composite Wood Products Act\*\*](#)
- 2016 – [\*\*Frank R. Lautenberg Chemical Safety for the 21st Century Act\*\*](#)

### 13 **Federal Insecticide, Fungicide, and Rodenticide Act of 1947**

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides federal control over pesticide distribution, sale, and use. All pesticides used in the U.S. must be registered (licensed) by the EPA. Registration assures that pesticides will be properly labeled and, if used in accordance with specifications, will not cause unreasonable harm to the environment.

**CLEAN WATER ACT CONNECTION:** FIFRA does not address the cumulative impacts of pesticides in our waterways. FIFRA documentation should be used in developing protective water quality criteria at the federal and state levels for all pesticides on the market. Recent court decisions require NPDES permits for pesticide application in waterways ([Poor Cropland Practices, p. 157](#)).

#### MAJOR AMENDMENTS:

- 1972 – [Federal Environmental Pesticide Control Act](#)
- 1988 – [Federal Insecticide, Fungicide, and Rodenticide Act Amendments of 1988](#)
- 1996 – [Food Quality Protection Act](#)
- 2003 – [Pesticide Registration Improvement Act of 2003](#)
- 2007 – [Pesticide Registration Improvement Renewal Act](#)
- 2012 – [Pesticide Registration Improvement Extension Act of 2012](#)
- 2018 – [Pesticide Registration Improvement Extension Act of 2018](#)

### 14 **Endangered Species Act of 1973**

The Endangered Species Act (ESA) provides for the conservation of threatened and endangered plants and animals and their habitats. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries maintain a list of endangered and threatened species. The Act prohibits any action that results in the “taking” (harassing, harming, or killing) of a listed species, or adversely affects habitat (Section 9). It also requires federal agencies to consult with the relevant management agency before taking action or granting a permit that would jeopardize a species (Section 7). Protection or improvement of habitat on state or private lands may be addressed through the development and implementation of Habitat Conservation Plans (Section 10).

**CLEAN WATER ACT CONNECTION:** ESA Sections 7, 9, and 10 are tools that can be used to protect the aquatic habitats of threatened and endangered species on both public and private lands. Lawsuits have relied on the ESA to stop, change, or curtail some activities including timber sales, grazing, and hydroelectric operations. In the Northwest, the ESA has been used as a tool to protect and improve habitat for several listed salmon species. Water quality criteria must be designed to protect the most sensitive uses, which often include threatened or endangered species. The antidegradation policy requires protection of existing uses such as threatened and endangered species, and it can lead to designation of outstanding waters to protect the ecological significance of critical habitat. Federal lawmakers have proposed combining the ESA’s Habitat Conservation Plan process with TMDLs. While they should be coordinated, they each have specific requirements that could be lost in the streamlining.

### 15 **Coastal Zone Management Act of 1972**

The Coastal Zone Management Act (CZMA) requires the National Oceanic and Atmospheric Administration (NOAA) to preserve, protect, develop, and where possible, restore and enhance the resources of coastal zones. This mandate is to be accomplished in cooperation with the 29 states and five territories that have coastal management programs. The Act’s federal consistency provision “requires that federal actions within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone be consistent with the enforceable policies of a state’s federally approved coastal management program.” Federal actions include agency activities, license or permit programs, and financial assistance.<sup>7</sup>

**CLEAN WATER ACT CONNECTION:** In 1990, through Coastal Zone Act Reauthorization Amendments (CZARA), Congress created the Coastal Zone Management Program, requiring states to develop and implement programs to reduce polluted runoff and more effectively manage nonpoint source pollution. The CZARA provides a hook for regulating nonpoint sources of pollution in coastal states. This tool can come into play when developing and implementing TMDLs that address problems in estuarine species and habitat.

#### MAJOR AMENDMENTS:

- 1990 – [Coastal Zone Act Reauthorization Amendments](#)

## 16 National Wild and Scenic Rivers Act of 1968

The Wild and Scenic Rivers Act serves to protect designated free-flowing rivers that have “outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values.” The Act says these rivers “shall be preserved in the free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” Rivers are designated as wild, scenic, or recreational typically by Congress, however, there are provisions in the Act for state designated waters to be included in the national program.<sup>8</sup>

As of 2019, 13,413 miles of 226 rivers are protected in 41 states and Puerto Rico.

**CLEAN WATER ACT CONNECTION:** This law states that by maintaining rivers in a free-flowing condition, it can “protect the water quality of such rivers and...fulfill other vital national conservation purposes.” For example, at the time Oregon’s Klamath River was protected under the Wild and Scenic Rivers Act, a 15-year battle over the proposed Salt Caves Hydro Project came to an end. The dam would have increased water temperatures in a river system that was already seriously stressed by other uses. A Wild and Scenic designation becomes an existing use of a river that needs to be protected in water quality standards by a designated use such as “aesthetics” or “recreation.” The use can be protected against harm through the most basic antidegradation protection of existing uses as well as through designation as an Outstanding National Resource Water (ONRW).

### MAJOR AMENDMENTS:

- 1977 – [Surface Mining Control and Reclamation Act of 1977](#)
- 1978 – [National Parks and Recreation Act of 1978](#)
- 1980 – [Alaska National Interest Lands Conservation Act](#)
- 1987 – [West Virginia National Interest River Conservation Act of 1987](#)
- 1988 – [Omnibus Oregon Wild and Scenic Rivers Act of 1988](#)

## 17 Agriculture Improvement Act of 2018 (Farm Bill)

The Farm Bill is a multi-year law that includes agriculture and food programs, and is generally reauthorized every five years. The [Conservation programs](#), one of twelve titles, directs funding that is intended to address environmental resource concerns on private land. These programs represent just 7% of the bill’s projected mandatory spending over ten years. In 2018, the Farm Bill reallocated mandatory funding among the larger Conservation title programs:<sup>9</sup> [Conservation Reserve Program](#) (CRP), [Environmental Quality Incentives Program](#) (EQIP), and [Conservation](#)

[Stewardship Program](#) (CSP). [Agricultural Conservation Easement Program](#) (ACEP), [Regional Conservation Partnership Program](#) (RCPP), and [Wetland and Watershed Programs](#) (“Swampbuster”) were also part of this reauthorization.

**CLEAN WATER ACT CONNECTION:** Tracking the annual federal appropriations directed at conservation programs in your watershed is worthwhile to analyze the impact of these investments. Are they improving agricultural and forestry practices on private land and water quality of nearby streams? It is also useful to examine the use of subsidy programs in your watershed because the Farm Bill allocates billions of dollars to encourage the use of fertilizers and pesticides and to support industrial feedlot operations.

## 18 National Forest Management Act of 1976

The National Forest Management Act (NFMA) is a cornerstone of environmental law intended to protect biodiversity in National Forests and to ensure public involvement in forest planning and management. It provides for multiple use, including extractive industry, while recognizing “the fundamental need to protect, and where appropriate, improve the quality of soil, water, and air resources.” The NFMA requires the Forest Service to develop plans to oversee the management of the 154 national forests and 20 national grasslands. In 2012, a new rule was passed that made significant updates to the way the Forest Service drafts these forest plans. This 2012 rule outlines a collaborative and science-based approach to plan updates and includes a strong set of requirements associated with maintaining and restoring watersheds and aquatic ecosystems, water resources, and riparian areas in plan areas.

**CLEAN WATER ACT CONNECTION:** NFMA is supposed to ensure that timber will be harvested from National Forests “only where...soil, slope, or other watershed conditions will not be irreversibly damaged.” It also specifies that “protection is provided for streams, stream-banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat...” With the 2012 rule’s requirements for protecting water quality and resiliency, forest plan update processes are a good avenue for advocating for better water quality protections in your watershed.

### MAJOR AMENDMENTS:

- 2012 – [2012 Planning Rule](#)
- 2021 – [Repairing Existing Public Land by Adding Necessary Trees Act](#)

## 19 Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act (SMCRA) was passed in order “to protect society and the environment from the adverse effects of surface coal mining operations,” among other things. The Act establishes minimum requirements for surface coal mining activities and the reclamation of coal-mined lands. Coal mining on state and federal lands is prohibited without a permit, and a reclamation plan must be part of the permit application process. Disturbances to, and adverse impacts on, fish, wildlife, and other environmental values are to be minimized by mine operators. In reclamation planning, land and water resource restoration is a priority. The Act also creates an Abandoned Mine Reclamation Fund. Money from the fund is used to reclaim and restore land and water resources that have been adversely affected by coal mining. The Act outlines monitoring and inspection provisions as well. (<http://www.osmre.gov/>)

**CLEAN WATER ACT CONNECTION:** Active mines are required to obtain a mining permit under SMCRA as well as a NPDES permit for their activities. SMCRA is very important to the protection of water quality, particularly for acid-producing coal mines. There are many aspects of SMCRA that regulate mining impacts on the “hydrological balance.” It is important that reclamation plans address water quality standards and adequately reclaim the land. SMCRA prohibits mining in specified federal areas, including those which are part of the Wild and Scenic Rivers System. To better address toxins from mining, individuals can insist that permit requirements prevent water pollution and that a Section 404 cumulative impacts analysis be completed.

### Major amendments:

- 2006 – [Surface Mining Control and Reclamation Act Amendments of 2006](#)
- 2019 – [Bipartisan American Miners Act of 2019](#)

## 20 The Marine Protection, Research, and Sanctuaries Act of 1972

The Marine Protection, Research, and Sanctuaries Act (MPRSA), also known as the Ocean Dumping Act, prohibits all ocean dumping without a permit in any ocean waters under U.S. jurisdiction by any U.S. ship or by any ship sailing from a U.S. port. The ban includes the dumping of radiological, chemical, and biological warfare agents, high-level radioactive waste, medical waste, and sewage sludge. Permits for dumping of materials other than dredge spoils can be issued by the EPA if the agency determines (through a full public notice and process) that the discharge will not unreasonably degrade or endanger human health or welfare or the marine environment. The law also has provisions related to creating marine sanctuaries, conducting ocean disposal research, and monitoring coastal water quality.

**CLEAN WATER ACT CONNECTION:** The MPRSA has been strengthened in recent years, particularly to address sewage sludge dumping, which is not covered by the Clean Water Act. Water quality standards are set by states and are not enforceable outside of state waters (3 miles from shore). Therefore, the Ocean Dumping Act adds significant protections for waters outside state jurisdiction by prohibiting the dumping of any materials in any U.S. water without a permit.

### MAJOR AMENDMENTS:

1988 – [Ocean Dumping Ban Act of 1988](#)

1 *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1329 (D.C. Cir. 2021).  
 2 *Executive Order 12898* was issued by President Clinton in 1994.  
 3 *Standing Rock Sioux Tribe v. United States Army Corps of Engineers*, No. 20-5197 (D.C. Cir. 2021).  
 4 255 F. Supp. 3d 101 (D.D.C. 2017).  
 5 *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1329 (D.C. Cir. 2021).

6 *Alexander v. Sandoval* (99-1908) 532 U.S. 275 (2001).  
 7 *NOAA CZMA Consistency page: Coastal Zone Management Act of 1972*, Section 307  
 8 Designating Rivers Through Section 2(a)(ii)  
 9 *Congressional Research Service, 2018 Farm Bill Primer: Title II Conservation Programs*, May 3, 2019.

# FINDING AVAILABLE DATA AND INFORMATION

WHAT ARE YOU LOOKING FOR?	SITE NAME	LINKS	DESCRIPTION
CLEAN WATER ACT TEXT – SEARCHABLE	Cornell Law School – Legal Information Institute	<a href="http://www.law.cornell.edu/uscode/text/33/chapter-26">www.law.cornell.edu/uscode/text/33/chapter-26</a>	To search for particular citations
CLEAN WATER ACT TEXT – PRINT	Federal Water Pollution Control Act	<a href="http://www.epa.gov/sites/default/files/2017-08/documents/federal-water-pollution-control-act-508full.pdf">www.epa.gov/sites/default/files/2017-08/documents/federal-water-pollution-control-act-508full.pdf</a>	Full current text for printing
CLEAN WATER ACT REGULATIONS	National Archives Code of Federal Regulations	<a href="http://www.ecfr.gov/current/title-40">www.ecfr.gov/current/title-40</a>	To search for particular citations
CONDITION OF PARTICULAR WATERS	How's My Waterway	<a href="http://www.epa.gov/waterdata/how-s-my-waterway">www.epa.gov/waterdata/how-s-my-waterway</a>	EPA site with lots of valuable linked geospatial information, including state-specific summaries
OTHER INFO	How's My Waterway	<a href="http://www.epa.gov/waterdata/how-s-my-waterway">www.epa.gov/waterdata/how-s-my-waterway</a>	EPA site with lots of valuable linked geospatial information, including state-specific summaries
THREATS TO DRINKING WATER SOURCES	EPA Drinking Water Application to Protect Source Waters	<a href="http://www.epa.gov/sourcewaterprotection/drinking-water-mapping-application-protect-source-waters-dwmmaps">www.epa.gov/sourcewaterprotection/drinking-water-mapping-application-protect-source-waters-dwmmaps</a>	Map-driven access to permits and data on threats to source waters
DESIGNATED USES IN PARTICULAR WATERS	State water quality standards	<a href="http://www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa">www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa</a>	Map-driven access to state water quality standards
ANTIDegradation POLICIES AND PROCEDURES	State water quality standards	<a href="http://www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa">www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa</a>	Map-driven access to state water quality standards
SPECIFIC NPDES PERMITS	State website or ECHO database	<a href="http://echo.epa.gov/">echo.epa.gov/</a>	EPA and state NPDES permit data; searchable by facility and location
POLLUTION DISCHARGES, ADMINISTRATIVE AND ENFORCEMENT ACTIONS IN A PARTICULAR AREA	ECHO database	<a href="http://echo.epa.gov/">echo.epa.gov/</a>	EPA and state NPDES permit data; searchable by facility and location
STATE ASSESSMENT RESULTS	Search for state Integrated Report ATTAINS Data Services	Multiple locations <a href="http://www.epa.gov/waterdata/attains">www.epa.gov/waterdata/attains</a>	Raw data, summary data, and sometimes visual mapping; queries
AERIAL SURVEYS; LIDAR	Search for organizations that provide this service near you. Check with state and local governments	Multiple locations including <a href="#">Southwings</a> , <a href="#">LightHawk</a>	Aerial flights over pollution sources to help conservation organizations; light detection and ranging (LIDAR)
ENVIRONMENTAL JUSTICE DATA	EPA EJScreen: Environmental Justice Screening and Mapping Tool	<a href="http://www.epa.gov/ejscreen">www.epa.gov/ejscreen</a>	Combines environmental and demographic indicators in maps and reports
ENVIRONMENTAL JUSTICE DATA	White House Council on Environmental Quality Climate and Economic Justice Screening Tool	<a href="http://screeningtool.geoplatform.gov/en/#3/33.47/-97.5">screeningtool.geoplatform.gov/en/#3/33.47/-97.5</a>	Help agencies identify disadvantaged communities to ensure that everyone is receiving the benefits intended from federal programs.



<b>ENVIRONMENTAL JUSTICE DATA</b>	River Network's summary of Water and Equity Mapping Tools	<a href="http://www.rivernetwork.org/wp-content/uploads/2022/03/water-and-equity-mapping-tools-federal-and-state-examples.pdf">www.rivernetwork.org/wp-content/uploads/2022/03/water-and-equity-mapping-tools-federal-and-state-examples.pdf</a>	Summary chart
<b>TMDLS COMPLETED AND IN PROGRESS</b>	Search for state TMDLs How's My Waterway	Multiple locations <a href="http://www.epa.gov/waterdata/how-s-my-waterway">www.epa.gov/waterdata/how-s-my-waterway</a>	State lists of completed TMDLs and prioritized list of others with anticipated dates of completion
<b>DREDGE AND FILL PERMIT INFORMATION</b>	Army Corps location map	<a href="http://permits.ops.usace.army.mil/orm-public#">permits.ops.usace.army.mil/orm-public#</a>	Entrance into Corps website to find specific permits by watershed
<b>JURISDICTIONAL DETERMINATIONS – WHETHER WATER IS PROTECTED BY CWA</b>	Army Corps Jurisdictional Determinations and Delineations	<a href="http://www.sac.usace.army.mil/Missions/Regulatory/Jurisdictional-Determinations-and-Delineations/">www.sac.usace.army.mil/Missions/Regulatory/Jurisdictional-Determinations-and-Delineations/</a>	Specific determinations by the Corps by region
<b>JURISDICTIONAL DETERMINATIONS – WHETHER WATER IS PROTECTED BY CWA</b>	EPA map of Army Corps Jurisdictional Determinations and Delineations	<a href="http://watersgeo.epa.gov/cwa/CWA-JDs/">watersgeo.epa.gov/cwa/CWA-JDs/</a>	Geographic interface of specific determinations by the Corps by region
<b>WETLANDS DATA</b>	USFWS National Wetlands Inventory	<a href="http://www.fws.gov/program/national-wetlands-inventory">www.fws.gov/program/national-wetlands-inventory</a>	Includes <a href="#">Wetlands Mapper</a> and <a href="#">Status and Trends</a>
<b>PLANS FOR HOW CWSRF IS GOING TO BE USED</b>	State CWSRF programs	<a href="http://www.epa.gov/cwsrf/state-cwsrf-program-contacts">www.epa.gov/cwsrf/state-cwsrf-program-contacts</a>	Intended Use Plans
<b>WATER QUALITY CURRENT CONDITIONS</b>	USGS National Water Dashboard	<a href="http://dashboard.waterdata.usgs.gov/">dashboard.waterdata.usgs.gov/</a>	USGS Water Quality Data for the Nation
<b>WATER QUALITY INFORMATION</b>	USGS National Water Information System: Web Interface	<a href="http://waterdata.usgs.gov/nwis/qw">waterdata.usgs.gov/nwis/qw</a>	USGS Water Quality Data for the Nation
<b>WATER QUALITY SAMPLE DATA</b>	The Water Quality Portal	<a href="http://www.waterqualitydata.us/">www.waterqualitydata.us/</a>	Water Sample Data from EPA, USGS, USDA, and others
<b>NATURAL RESOURCE DATA AND INFORMATION</b>	USDA Natural Resources Conservation Service (NRCS) Maps, Data, Mobile Apps	<a href="http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1049255">www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=stelprdb1049255</a>	Data on climate, soils, water, air, energy, and other natural resources
<b>SCIENCE AND DATA RELATED TO ESTUARIES AND COASTAL WATERS</b>	NOAA Fisheries Science and Data	<a href="http://www.fisheries.noaa.gov/science-and-data">www.fisheries.noaa.gov/science-and-data</a>	By region and through database and mapping
<b>HOW TO DEVELOP YOUR MONITORING PROGRAM</b>	EPA Volunteer Stream Monitoring: A Methods Manual	<a href="http://www.epa.gov/wetlands/volunteer-stream-monitoring-methods-manual">www.epa.gov/wetlands/volunteer-stream-monitoring-methods-manual</a>	Guidance for volunteer programs
<b>HOW TO DEVELOP YOUR MONITORING PROGRAM</b>	National Water Quality Monitoring Council	<a href="http://www.epa.gov/awma/national-water-quality-monitoring-council">www.epa.gov/awma/national-water-quality-monitoring-council</a>	Advance the monitoring community through collaboration and information exchange

You may also wish to look for similar resources created by your state or tribe, or at the regional or local levels. Examples include the [Delaware River Basin Commission](#), [Texas Map-Based Data Viewers](#), and [Portland, OR project map](#).

# GLOSSARY

**acute toxicity.** The ability of a substance to cause severe biological harm or death soon after a single exposure or dose (see chronic toxicity, toxicity).

**advanced wastewater treatment.** Any treatment of sewage that goes beyond the secondary biological water treatment stage and may include the removal of nutrients such as phosphorus and nitrogen and a higher percentage of suspended solids (see primary treatment, secondary treatment).

**anti-backsliding.** A provision in the Federal Regulations (CWA 303(d)(4); CWA 402(c); CFR 122.44(l)) that requires a reissued permit to be as stringent as the previous permit with some exceptions.

**antidegradation.** One of three components of state water quality standards. Calls for all existing uses to be protected, for degradation to be avoided or at least minimized when water quality meets or exceeds levels necessary to support the propagation of fish, shellfish, and wildlife and recreation on and in the water, and for the quality of outstanding waters to be maintained and protected.

**arbitrary and capricious.** The standard applied by the courts when reviewing agency decision-making. This is a very agency-friendly standard. Typically, a decision is only arbitrary and capricious if the agency: (1) relied on factors Congress did not intend it to rely on, (2) failed to consider an important aspect of the problem, (3) offered an explanation for its decision that runs counter to the evidence, or (4) offered an explanation that is so implausible that it cannot be ascribed to a difference in view or the product of agency expertise.

**assessed waters.** Waters in which states, tribes, and other jurisdictions have monitored physical, chemical, and biological parameters to determine whether or not the waters meet water quality standards and support designated beneficial uses.

**assimilative capacity.** The capacity of a natural body of water to receive wastewaters or toxic materials without deleterious effects such as harm to aquatic life or humans who swim in and drink the water.

**BAT – Best Available Technology Economically Achievable.** Technology-based standard established by the Clean Water Act as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

**BCT – Best Conventional Pollutant Control Technology.** Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, oil and grease. The BCT is established in light of a two-part “cost reasonableness” test, which compares the cost for an industry to reduce its pollutant discharge with the cost to a POTW for similar levels of reduction of a pollutant loading. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT (see below). EPA must find limits which are reasonable under both tests before establishing them as BCT.

**BMPs – Best Management Practices.** Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**BPT – Best Practicable Control Technology Currently Available.** The first level of technology-based standards established by the CWA to control

pollutants discharged to waters of the U.S. BPT effluent limitations guidelines are generally based on the average of the best existing performance by plants within an industrial category or subcategory.

**BPJ – best professional judgment.** The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

**BOD – biochemical oxygen demand.** A measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually five days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

**biocriteria.** Short for “biological criteria.” Numerical and narrative measures of biological health of waters, such as the number and kind of benthic, or bottom-dwelling, insects living in a stream. Biocriteria are sometimes part of a state’s water quality standards.

**bypass.** Intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).) This is typically done as a temporary measure during extreme conditions, but it can cause a significant pulse of pollution to a water body.

**chronic toxicity.** The capacity of a substance to cause long-term adverse health effects in humans, animals, fish, and other organisms (see acute toxicity, toxicity).

**citizen suit.** A lawsuit brought by nongovernment officials under Section 505 of the CWA. Such suits can be brought against either (a) dischargers who are violating effluent limits imposed by the CWA or (b) EPA for failing to perform a nondiscretionary duty. The term citizen, in this case, is defined as “a person or persons having an interest which is or may be adversely affected” who is not required to be a U.S. citizen. (CWA 505(g))

**classification.** Process of assigning uses to a water body. This term is often used instead of designation, especially to describe a grouping of designated uses.

**CFR – Code of Federal Regulations.** The document that codifies all rules of the executive departments and agencies of the federal government. It is divided into fifty volumes, known as titles. Title 40 of the CFR (referenced as 40 C.F.R. §) lists most environmental regulations.

**CSO – combined sewer overflows.** A combined sewer system carries both sewage and stormwater runoff. Normally, its entire flow goes to a waste treatment plant, but during rainfall or snowmelt, the volume of water may exceed the capacity of the treatment plant and cause overflows of untreated mixtures of stormwater and sewage into receiving waters. Stormwater runoff may carry toxic chemicals from industrial areas or streets into the sewer system.

**comment period.** Time provided for the public to review and comment on a proposed federal, state, or local action, permit, or rulemaking.

**compliance monitoring.** Collection and evaluation of data, including self-monitoring reports, to verify whether pollutant concentrations and loads in permitted discharges are in compliance with the limits and conditions specified in the permit.

**CAFO – concentrated animal feeding operation.** Large-scale animal feeding operations (e.g., poultry, hog, sheep, lamb, cattle, horse) that have created significant water quality problems in hundreds of watersheds around the country. Discharge of very high levels of nitrogen, phosphorus, and bacteria associated with poorly designed and managed CAFOs have led to severe ecological and human health problems.

**concentration limit.** A limit that is expressed as an amount of pollutant per unit of volume, typically milligrams of pollutant per liter of effluent. In contrast, load limits are expressed as an amount of pollutant per unit of time, typically pounds per day.

**conventional pollutants.** Pollutants typical of municipal sewage and for which municipal secondary treatment plants are typically designed; defined by federal regulation (40 C.F.R. § 401.16) as BOD, TSS, fecal coliform bacteria, oil and grease, and pH.

**cumulative effects.** Effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. (40 C.F.R. § 1508.1(g)(3).)

**cumulative exposure.** The summation of exposures of an organism to chemicals or adverse conditions over a period of time.

**delegated state.** A state that has received authority to administer an environmental regulatory program in lieu of a federal counterpart.

**de minimis degradation.** The amount of new pollution that is sometimes defined and allowed before antidegradation review is triggered. Some states have developed a broad conception of de minimis degradation, creating large loopholes that allow new discharge activities with little or no antidegradation review.

**designated uses.** One of three components of state water quality standards. Water uses identified in water quality standards that must be achieved and maintained as required under the Clean Water Act.

**discharge of a pollutant.** Any addition of any pollutant to navigable waters from any point source. (CWA § 502(12).)

**DMRs – discharge monitoring reports.** Monthly reports of self-monitored effluent data collected by NPDES permittees and submitted to the permit issuer. These reports are available to the public on EPA's website and sometimes on state websites.

**downgrading.** The process of weakening a water body's designated use and associated protections. Downgrading is not allowed if the current designated use is an existing use or if it can be attained by implementing applicable permits. Downgrading cannot occur without development of a Use Attainability Analysis.

**dredge material.** Materials that have been excavated or dredged from the waters of the United States. (40 C.F.R. § 232.2.)

**dredging.** Removal of material from the bottom of water bodies. This can disturb the ecosystem and cause silting that can kill or harm aquatic life. Dredging of contaminated materials can expose biota to heavy metals and other toxics. Dredging activities are subject to regulation under Section 404 of the Clean Water Act.

**EA – Environmental Assessment:** An environmental analysis prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

**effluent.** Wastewater, treated or untreated, that flows out of a sewage treatment plant, an industrial outfall, a stormwater outfall, or any other point source of pollution.

**EIS – Environmental Impact Statement.** A document required of federal agencies by the National Environmental Policy Act for federal actions that would have significant adverse effects on the environment. A tool for decision-making, it describes the positive and negative effects of the undertaking and cites alternative actions.

**EPA – United States Environmental Protection Agency.** The EPA oversees the implementation of and compliance with the Clean Water Act.

**fill material.** Material placed in the waters of the United States that has the effect of replacing any portion of the water with dry land or changing the bottom elevation of any portion of the water. (40 C.F.R. § 232.2.)

**fishable.** The term used to represent an interim goal stated in the Clean Water Act for all waters of the U.S.: water quality which provides for recreation in and on the water shall be achieved by July 1, 1983. (CWA, Section 101(a)(2).)

**general permit.** A permit that authorizes a category of discharges under the CWA within a geographical area. A general permit is not specifically tailored for an individual discharger.

**high-quality waters.** Waters whose quality exceeds that necessary for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, regardless of the use designation. These waters are protected by Tier 2 of the antidegradation policy.

**impaired waters.** Water bodies not fully supporting their uses.

**Integrated Report.** A combination of the 305(b) report and 303(d) list of impaired waters. These reports are prepared by states and submitted to EPA every two years. EPA guidance suggests that reports place each state water in one of five categories based on the achievement or impairment of water quality standards.

**LA – load allocations.** Limits on nonpoint sources of pollution calculated for TMDLs and required to achieve water quality standards.

**load limit.** A limit that is expressed as an amount of pollutant per unit of time, typically pounds per day. In contrast, concentration limits are expressed as an amount of pollutant per unit of volume, typically milligrams of pollutant per liter of effluent.

**mine tailings.** A byproduct of mining operations, tailings are a mixture of crushed rock and process wastewater that remains after the economically valuable materials have been extracted.

**mixing zone.** An area in the receiving water body where an effluent discharge undergoes dilution. A mixing zone is an allocated part of that receiving water body where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.

**MOS – margin of safety.** A component of the TMDL process. A margin of safety must account for any uncertainty in predictions of how pollution reduction will result in compliance with water quality standards.

**MS4 – municipal separated storm sewer system.** A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

“Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district, or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act (CWA) that discharges to waters of the United States; Designed or used for collecting or conveying stormwater;

- Which is not a combined sewer; and
- Which is not part of a publicly owned treatment works (POTW).”

(40 C.F.R. § 122.26(b)(8).)

**narrative criteria.** Statements that establish water quality goals such as desirable biological conditions or express conditions that should or should not exist. For example, many states’ narrative standards say waters should be “free from substances that may cause adverse effects to aquatic life or human health.”

**navigable waters.** Traditionally, waters sufficiently deep and wide for navigation; such waters in the United States come under federal jurisdiction and are protected by the Clean Water Act. This term also does extend to smaller tributaries, headwaters, and waters hydrologically connected to traditionally “navigable” waters.

**NOI – notice of intent.** There are two applications of this acronym. (1) As an application for coverage under a general NPDES permit or (2) As a 60-day notice of intent to sue under the citizen suit provision of the CWA.

**nonconventional pollutants.** All pollutants that are not included in the list of conventional or toxic pollutants in 40 C.F.R. Part 401. Includes pollutants such as chemical oxygen demand (COD), total organic carbon (TOC), nitrogen, and phosphorus.

**nondiscretionary duty.** A duty that EPA is required to perform by statute. A person or persons can challenge EPA’s failure to perform a nondiscretionary duty under §505 of the CWA, while discretionary actions must be challenged under the Administrative Procedure Act. Statutory directives that begin with “EPA *shall*” typically indicate a nondiscretionary duty, whereas directives beginning with “EPA *may*” indicate a discretionary duty.

**nonpoint source pollution.** Any pollution that enters the waters of the United States but does not come from a point source (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). Typically, nonpoint source pollution refers to runoff caused by rainfall or snowmelt that moves over the ground and carries pollutants into nearby waters.

**NOT – notice of termination.** This is a notification that a time-limited general permit activity is completed and no longer will have discharges that need to be permitted. Examples include construction sites or fossil fuel extraction.

**NPDES – National Pollutant Discharge Elimination System.** A national program under Section 402 of the Clean Water Act that prohibits discharge of pollutants from a point source into waters of the United States unless a permit is issued by EPA, a state, or, where delegated, a tribal government on an Indian reservation. This provision also encourages elimination of pollutant discharges.

**numeric criteria.** Measurable water quality benchmarks expressed in quantitative limits such as maximum concentrations or mass loadings, as opposed to narrative statements.

**nutrients.** Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements. In surface waters, excess algal growth resulting from nutrient pollution is a major concern.

**outfall.** The place where effluent is discharged into receiving waters.

**ONRW – Outstanding National Resource Water.** Also called Tier 3 waters. Waters that are in National and State parks and wildlife refuges, or waters of exceptional recreational or ecological significance. ONRW water quality must be maintained and protected.

**pH.** An expression of the intensity of the basic or acidic condition of a liquid. The pH may range from 0 to 14, where 0 is most acidic, 14 is most basic, and 7 is neutral. Natural waters usually have a pH between 6.5 and 8.5.

**point source.** Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff. (40 C.F.R. § 122.2.)

**pollutant.** Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. (CWA, Section 502(6).)

**pollutant cap.** The total amount of pollutants a water body can absorb without violating water quality standards. Developed as a part of the TMDL process.

**pollution.** The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water. (CWA, Section 502(19).)

**primary treatment.** The practice of removing some portion of the suspended solids and organic matter in wastewater through sedimentation. Common usage of this term also includes preliminary treatment to remove wastewater constituents that may cause maintenance or operational problems in the system (i.e., grit removal, screening for rags and debris, oil and grease removal, etc.).

**Priority Pollutant List.** EPA developed the [Priority Pollutant List](#) in 1977 to make implementation of the Toxic Pollutant List more practical for water testing and regulatory purposes, yet both lists are somewhat outdated. (Appendix A to 40 C.F.R. Part 423.)

**receiving waters.** All distinct bodies of water that receive runoff or wastewater discharges, such as streams, rivers, ponds, lakes, and estuaries.

**reference conditions.** As close to preindustrial conditions as possible. This is the standard that impaired conditions are compared against.

**sanitary sewer.** A sewer that transports only wastewaters (from domestic residences and/or industries) to a wastewater treatment plant.

**secondary treatment.** Technology-based requirements for direct discharging municipal sewage treatment facilities. Standard is based on a combination of physical and biological processes typical for the treatment of pollutants in municipal sewage. Standards are expressed as a minimum level of effluent quality in terms of: BOD5, suspended solids, and pH (except as provided for special considerations and treatment equivalent to secondary treatment).

**Section 303(d) list.** A statewide list of impaired or threatened waters where the effluent limits imposed by NPDES permits are not sufficient to achieve state water quality standards. Under CWA § 303(d), states are required to rank impaired waters in terms of priority and establish total maximum daily loads (TMDLs) for all waters on the list. Tribes may also gain authority to compile and report their Section 303(d) list, but they are not required to do so by the statute.

**Section 305(b) report.** Report on the health of all waters that each state must prepare and submit to EPA every two years. These reports serve as the basis for identifying and prioritizing waters on the Section 303(d) list and for the development of total maximum daily loads (TMDLs). EPA recommends that states combine the Section 303(d) list with the Section 305(b) report to create an Integrated Report.

**septic system.** An on-site system designed to treat and dispose of domestic sewage. A typical septic system consists of a tank that receives waste from a residence or business and a subsurface dispersion system for disposal of the liquid effluent that remains after the solids decompose in the tank. Residual solids or sludge in-tank must be pumped out periodically.

**SRF – State Revolving Fund.** State-administered, low-interest loans for specific water pollution control purposes. Annual federal grants and loan repayments, including interest, are used to make new loans for additional water pollution control activities. The 1987 Amendments to the Clean Water Act established the SRF program in place of the CWA's original Construction Grants Program.

**SSOs – sanitary sewer overflows.** Untreated or partially treated sewage overflows from a sanitary sewer collection system that are often caused by water leaking into old pipes, pipe blockages, pipe breaks, power failures, or insufficient capacity in the system.

**storm sewer.** A system of pipes (separate from sanitary sewers) that carries water runoff from buildings and land surfaces.

**stormwater.** Rain or snowmelt that runs off of industrial sites, construction sites, streets, roads, parking lots, and other impervious surfaces. Stormwater can carry pollutants from these areas into water bodies.

**surface water.** All water naturally open to the atmosphere (rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries).

**swimmable.** The term used to represent an interim goal stated in the Clean Water Act for all waters of the U.S.: water quality which provides for the protection and propagation of fish, shellfish, and wildlife be achieved by July 1, 1983. (CWA, Section 101(a)(2).)

**TBEL – technology-based effluent limit.** Minimum pollutant control standards for numerous categories of industrial discharges, sewage discharges, and for a growing number of other types of discharges. In each industrial category, they represent levels of technology and pollution control performance that the EPA expects all dischargers in that category to employ.

**threatened waters.** Water whose quality supports beneficial uses now, but may not in the future unless action is taken.

**Tier 1.** The minimum antidegradation provision that requires the maintenance and protection of water quality necessary to support existing uses.

**Tier 2.** Antidegradation provision that requires that any degradation of waters that currently meet or exceed standards must be necessary, minimized, and socially and economically justified.

**Tier 2.5.** A hybrid designation created by some states. In some cases, where a state is unwilling to designate ONRWs, a Tier 2.5 designation allows new discharges into a special water body, but protects it more strictly than a Tier 2 designation. In other states, a Tier 2.5 designation is less protective than Tier 2.

**Tier 3.** Antidegradation provision that requires maintenance and protection of Outstanding National Resource Waters.

**TMDL – total maximum daily load.** The term represents both a pollutant cap and a watershed restoration or management plan. The cap is the sum of the individual wasteload allocations (WLAs) for point sources of pollution, load allocations (LAs) for nonpoint sources of pollution, natural background levels of contaminants, and a margin of safety (MOS) to account for uncertainty. TMDLs should be expressed in terms of mass per unit of time, or other appropriate measure that relates to state water quality standards.

**toxic pollutant list.** This [list](#) was developed in 1976 and subsequently added to the Clean Water Act by Congress in 1977. The list was intended to be used by EPA and states as a starting point to ensure that Effluent Guidelines regulations, water quality criteria and standards, and NPDES permit requirements addressed the problems of toxics in waterways. However, this list consisted of broad categories of pollutants rather than specific, individual pollutants, and is outdated. See priority pollutant list.

**triennial review.** Public hearings to analyze, debate, and revise state water quality standards. These hearings, which must be held at least every three years, offer the public the chance to comment on the state's designated uses, the criteria associated with designated uses, and the segments into which water bodies are divided for classification.

**TSS – total suspended solids.** The dry weight of solids suspended in the water column that do not pass through a standard glass filter.

**turbidity.** A measure of a liquid's clarity. Samples with high turbidity appear cloudy due to suspended particles.

**UAA – Use Attainability Analysis.** A structured scientific assessment of the physical, chemical, biological, and economic factors affecting the attainment of a designated use. (40 C.F.R. § 131.3.)

**urbanized area.** An urbanized area is a land area comprising one or more places—central place(s)—and the adjacent densely settled surrounding area—urban fringe—that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. This term is part of the definition of MS4s, yet after the 2020 census, it ceased to be used.

**wastewater.** The used water and solids from a community or from industrial processes that flow to a treatment plant or are treated onsite. Stormwater and groundwater infiltration also may be included in the wastewater that enters a municipal wastewater treatment plant.

**water quality-based permit.** A permit with any effluent limits more stringent than technology-based requirements. Such limits may be necessary to protect the designated uses of receiving waters (e.g., recreation, aquatic life protection).

**water quality criteria.** One of three components of state water quality standards. Composed of numeric and narrative criteria that are set to protect existing and designated uses. Numeric criteria are scientifically derived concentrations developed by EPA or states for pollutants of concern. Narrative criteria are statements that describe the necessary water quality conditions.

**water quality standards.** State-adopted and EPA-approved standards for water bodies that include designated uses, water quality criteria, and antidegradation requirements.

**WLAs – wasteload allocations.** Limits on point sources of pollution calculated for TMDLs and required to achieve water quality standards.

**WQBEL – water quality-based effluent limit.** Effluent limits based on the quality of receiving waters and applied to dischargers when technology-based limits would be inadequate to prevent violations of water quality standards.

**WQLS – water quality limited segment.** Water body requiring more than minimum technology-based treatment or controls (advanced treatment or nonpoint source controls) to meet or maintain water quality standards. Water quality limited segments are considered threatened or impaired waters and should be on the 303(d) list.

**WWTP – wastewater treatment plant.** A facility that receives wastewater (and sometimes runoff) from domestic and/or industrial sources, and through a combination of physical, chemical, and biological processes reduces (treats) the wastewaters to less harmful byproducts; known by the acronyms, STP (sewage treatment plant) and POTW (publicly owned treatment works).

**zone of initial dilution (ZID).** The portion of the receiving water directly surrounding the point of discharge. ZIDs are designated portions of a mixing zone where even more water quality rules are waived.

## Glossary Sources

U.S. EPA website ([www.epa.gov](http://www.epa.gov))

Code of Federal Regulations (40 C.F.R.) definitions

Clean Water Act definitions

The Clean Water Act: An Owner's Manual, 2nd ed., 2005.



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[www.rivernetwork.org](http://www.rivernetwork.org)

River Network envisions a future with clean and ample water for people and nature, where local caretakers are well-equipped, effective, and courageous champions for our rivers. We believe that everyone should have access to affordable, clean water and healthy rivers.