

Chapter 4: Program Development

Read this chapter...

- For an overview of activities that are consistent across tribal water quality programs.
- To understand how to identify reservation water resources and tribal water quality program needs.
- To understand how to develop program goals, objectives, and milestones; submit work plans; and conduct community education activities.

Chapter highlights:

- Table of eligible and ineligible Section 106 activities.
- List of eligible ways to use Section 106 funds for ground water protection programs.
- Section on eligible water quality sampling locations.
- Followed by a section on Indigenous Knowledge and integrating it into water quality programs.

This chapter describes some of the activities that are consistent across all tribal water quality programs and form the foundation needed to support the implementation and expansion of a water quality program using Section 106 funding.

Benefits of Developing a Section 106-Funded Water Quality Program

Section 106 provides critical funding for tribal water quality programs. More than 280 Tribes have received treatment in a similar manner as a state (TAS) for purposes of Section 106 to protect, preserve, and restore water quality in Indian Country. Tribes can use Section 106 funds for:

- Water quality planning, assessments, and studies.
- Ambient water quality monitoring.
- Community outreach and education activities.
- Source water, surface water, ground water, and wetland protection activities.
- Nonpoint source (NPS) control planning activities (including NPS assessments and management plans).
- Monitoring for the effectiveness of NPS activities.
- Developing tribal and EPA-approved water quality standards (WQS).
- Developing and implementing a National Pollutant Discharge Elimination System (NPDES) program.
- Evaluating the impacts of climate change on water quality.

After establishing a water quality program, a Tribe may wish to expand the program to include other CWA program activities, including to address NPS pollution and protect wetlands. Chapter 7: Program Expansion – Additional Activities and Chapter 8: Program Expansion – Regulatory Authorities have information on options to expand a program.

Eligible Uses of Section 106 Funds

Section 106 grant funds support tribal water quality programs to prevent and reduce point source and NPS surface and ground water pollution. Table 3 lists examples of eligible Section 106 activities and Table 4 lists examples of ineligible Section 106 activities. Each EPA region's annual tribal Section 106

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funding opportunity announcement may include other important information relevant to the use of program funds.

Table 3. Examples of eligible Section 106 activities

Category	Eligible Activity
Program Management	Building capacity to manage a water quality program.
	Managing the financial aspects of the Section 106 grant including the budgeting and record-keeping.
	Planning, developing, improving, or maintaining a water quality program.
	Supporting personnel and office equipment costs for Section 106 eligible activities.
	Networking and coordinating with watershed stakeholders to protect and restore water quality.
	Completing grant reporting activities.
	Attending training opportunities related to the Tribe's water quality program.
	Conducting water quality planning, assessments, and studies (for example, source water, surface water, ground water, climate change/adaptation, and wetland protection assessments or plans).
	Developing a Section 401 Certification Program.
Monitoring	Developing a Quality Assurance Project Plan (QAPP).
	Developing a Monitoring Strategy.
	Purchasing monitoring and laboratory equipment and supplies.
	Conducting monitoring activities to determine water quality of source water, surface water, ground water, and wetlands.
	Collecting data and performing related quality assurance (QA).
	Managing water quality data and data management systems.
	Conducting or contracting laboratory analysis.
	Conducting data analysis and assessment including to develop an assessment methodology.
	Conducting research, investigations, surveys, and special studies to characterize water quality.
Standards-based Activities	Developing TAS packages for WQS, Listing and Total Maximum Daily Loads (TMDLs), and permitting.
	Developing WQS and conducting triennial reviews.
	Reviewing and commenting on NPDES permits.
	Conducting violation enforcement activities to correct violations, deter future violations, and promote equal treatment of the regulated community.

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Category	Eligible Activity
	Developing TMDLs.
NPS	Attending NPS meetings and training opportunities.
	Developing non-structural controls to reduce NPS pollution (for example, education and outreach, code development).
	Forming partnerships to address NPS issues.
	Developing NPS inventories, assessments, and management plans.
	Conducting watershed-based planning.
	Developing a TAS package for Section 319.
	Monitoring on reservation and trust lands to support the Section 319 program.
Community Related Activities	Conducting community or tribal outreach, education, and public awareness activities, including social media.
	Involving the public in program development.
	Establishing voluntary programs.
	Collecting Indigenous Knowledge to support water quality goals and objectives through interviews and meetings with the tribal community.

Table 4. Examples of ineligible Section 106 activities

Ineligible Activity
Performing activities defined as ineligible in the Uniform Grant Guidance (UGG) (2 CFR 200) .
Constructing, operating, or maintaining wastewater treatment plants, wastewater lagoon systems, and regulatory or required monitoring, including compliance monitoring, of such systems.
Constructing, operating, or maintaining drinking water systems and conducting regulatory or required monitoring (including compliance monitoring) of such systems.
Installing, operating, or maintaining NPS structural controls (or "on the ground" management measures) that require construction.
Performing the same tasks funded under another work plan or grant (for example, Tribes may not use Section 106 funds for tasks that are already financed by other federal grants such as a General Assistance Program (GAP) or Section 319 grant).

Ground Water

Many Tribes use Section 106 funds to develop and implement their ground water protection programs. The following are examples of eligible uses of Section 106 funds for ground water programs:

- Develop ground water protection strategies:

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- Develop a ground water monitoring strategy and program to collect data to make management decisions and evaluate controls.
- Develop or modify a QAPP to include ground water monitoring.
- Conduct ground water assessments: describe hydrologic flow system, describe connections between ground water and surface water and ground water quality, and identify sources of contamination.
- Assess the tribal legal and fiscal resources to analyze effectiveness of existing controls, problems, and gaps.
- Adopt a ground water classification system.
- Identify and develop controls necessary to manage ground water resources; address the legal, fiscal, technical, and institutional aspects; and integrate quality management for surface water and ground water.
- Develop a source water assessment and protection strategy.
- Conduct ground water sampling to determine ambient water quality:
 - Collect samples.
 - Analyze samples.
 - Drill wells to conduct Section 106-funded ground water sampling.
 - Cap wells that were drilled for Section 106-funded ground water sampling.

The following sampling locations may be used to collect raw ground water:

- Private drinking water well (before any treatment, softening, filtering, or aeration).
- Public water system well (before any treatment, softening, filtering, or aeration).
- Monitoring well drilled to collect ground water samples and detect flow direction.

The following are examples of ineligible uses of Section 106 funds:

- Activities primarily related to determining ground water quantity for water allocation purposes.
- Activities for drinking water compliance, including to test private water wells for drinking water quality and to conduct outreach and communication for drinking water compliance.
- Sampling treated ground water (for example, ground water treated with reverse osmosis or softening).

Eligible Water Quality Monitoring Locations

CWA Section 518(e)(2) specifies that Section 106 funds can be used to conduct sampling on waters located within the borders of a reservation or on tribally held trust lands:

The functions to be exercised by the Indian Tribe pertain to the management and protection of water resources which are held by an Indian Tribe, held by the United States in trust for Indians, held by a member of an Indian Tribe if such property interest is subject to a trust restriction on alienation, or otherwise within the borders of an Indian reservation.

The Section 106 Program has interpreted the language in CWA Section 518(e)(2) to allow Section 106 funding to be used for sampling and monitoring on waters that have a direct connection between the waters being sampled and the waters located within the borders or a reservation or on tribally held trust lands.

Some examples of eligible and ineligible sampling locations include:

Waters within the borders of the reservation: Sampling of waters within the borders of an Indian reservation and tribally held trust lands is an eligible activity under Section 106. This would include those tribally held trust lands located outside the border of the reservation. Tribes may not own or control all lands within the borders of an Indian reservation, thus tribal representatives may need to obtain access to sample some waters. Section 106 does not provide authority for access.

Sampling in the watershed in support of 319 projects: Tribes that implement NPS Control (319) Programs often use Section 106 funds for water quality sampling before and after the project. Sampling is eligible for those waters within the borders of the reservation, on waters located on tribally held trust lands outside reservation borders, and where there is a direct connection to waters on these formal or informal reservation waters.

Waters located in ceded territory where Tribes hold reserved rights (but outside reservation borders): These waters are not within the definition of CWA Section 518(e). Section 106 funds cannot be used to sample these waters unless the water being sampled has a direct connection to waters on reservation or trust lands.

Tribally owned land that is outside external boundaries of a reservation and that is not held in tribal trust: Waters located on lands outside the reservation that is owned by Tribes but is not held in tribal trust status would not be eligible for Section 106-funded activities unless the water being sampled has a direct connection to reservation waters. Once such lands have been placed in tribal trust status, Section 106-funded activities for waters located on these lands would be allowed.

All other waters: In addition to the aforementioned examples, Tribes may be allowed to use Section 106 funds to sample and monitor waters located outside reservation and trust lands where the Tribe meets three conditions: 1) demonstrate that there is a direct connection between the water being sampled and the waters within reservation or trust lands (for example, waters that are upstream or downstream of waters on such reservation or trust lands), 2) include a description of such sampling in their Monitoring Strategy, and 3) receive an agreement for access from the relevant regulatory agency (for public lands) or private landowner (for private lands) to conduct sampling/monitoring, if necessary.

Minnesota: The Shakopee Mdewakanton Sioux Community

Section 106 funds support diverse ground water protection activities to maintain high-quality ground water for the drinking water supply of the Shakopee Mdewakanton Sioux Community (SMSC).

The SMSC has over 5,100 acres of trust and fee land. The SMSC relies solely on ground water from one bedrock aquifer for drinking water. The SMSC's public works department frequently monitors raw well water from public supply wells. Monitoring has shown that the local aquifers are producing high-quality water. The ground water quality is important to the continued existence of the SMSC. With a high-quality water supply, the SMSC can continue to provide safe residential land and economic opportunities for SMSC members.

The Shakopee has two community water systems serving about 15,000 people daily. The primary potential sources of contamination for each system are petroleum storage of more than 25 gallons and any unknown abandoned wells that penetrate the aquifer.

The SMSC has received Section 106 funding for a wide range of ground water related activities, including:

- Develop and maintain their own ground water model to plan for well locations and predict aquifer behavior.
- Conduct an analysis of their Wellhead Protection Plan.
- Host a summer education series for area tribal and non-tribal children that stresses the importance of water quality. Usually, 2–4 sessions per summer for the last 20 years.
- Support staff travel to regional and national conferences to keep current on ground water issues.
- Host a variety of water related education activities during “Earth Week” that are geared toward tribal members and employees who may live and work in ground water management areas.
- Support staff time to locate abandoned wells and coordinate proper well sealing.

Establishing a Water Quality Program

When establishing a water quality program, Tribes consider the hiring and training needs for their staff and also identify their priorities for the program. Specifically, they identify their water resources, needs, and goals.

Hiring Staff

When considering staffing needs, Tribes should develop job descriptions that identify the skills needed to achieve their program goals. The program's scope and financial resources will determine how many and what kind of staff the Tribe needs. Depending on the program's size and goals, the Tribe may need the skills of environmental and water quality specialists, biologists, lab technicians, administrative assistants, among others. A single person may carry out multiple program implementation activities.

Major program implementation activities might include:

- **Program Coordination:** Oversee program tasks to ensure they are performed as needed.

- **Quality Assurance:** Ensure the Tribe is carrying out their QA measures according to the QAPP. This could be the program coordinator, lab coordinator, or a person outside of the Tribe’s program.
- **Water Quality Sampling:** Collect and record samples, observations, and measurements in the field and deliver samples to a drop-off point or lab.
- **Data Entry:** Enter the field and lab data into a computer. Work under the supervision of the data management coordinator. May also validate data entered by other staff.
- **Data Management and Analysis:** Assure that all the field and lab data are computerized for summary and analysis. This may include setting up the software for data entry, overseeing staff who enter the data, validating the data, creating an assessment methodology, and producing the Water Quality Assessment against applicable thresholds or criteria.
- **Lab Coordination:** Oversee and coordinate lab analysis of samples and train lab staff. If a Tribe contracts with outside labs to analyze samples, they should identify the person in that lab who is responsible for reporting to the Tribe.
- **Laboratory Analysis:** Analyze and record the results for field samples. Lab technicians work under the supervision of the lab coordinator.

EPA Project Officers may be able to connect Tribes to other nearby tribal water quality programs for technical assistance. Tribes with established water quality programs may be willing to serve as program mentors. EPA Project Officers may also be able to identify volunteer networks to potentially help carry out relevant work plan activities. Volunteer networks may include volunteers from the community, local high schools, tribally sponsored internship programs, community colleges, or university programs.

Using Contractors to Support Water Quality Programs

Tribes can use their Section 106 funds to support program activities through contractor support. Contractors can help Tribes develop their program and perform program functions, such as sample collection. Tribes may find contractor support for complex activities, such as sample analysis, information technology (IT) support, training, and legal analysis, among others, especially helpful in the early stages of program development. Procurement for contractor services must be consistent with 2 CFR Part 200.331(b).

Training Staff

Staff training is important to develop and expand capacity for water quality program management, including QA procedures for sampling, sample collection and analysis, computer use, and data collection and management. EPA Project Officers can verify which training costs qualify as program expenses. Other Tribes, states, EPA Headquarters, EPA regions, colleges and universities, and stakeholder groups offer training opportunities, workshops, and symposia to support water quality staff in acquiring necessary knowledge. Tribes may want to contact neighboring Tribes and states, as well as their EPA regional office, to see if these organizations offer training opportunities.

Identifying Reservation Water Resources

The first step in creating a water quality program is to assess reservation water resources. The most effective programs incorporate all types of waterbodies on the Tribe’s reservation, even if they cannot immediately address every type of waterbody. Types of water resources include:

- **Streams and Rivers:** A stream is a natural body of flowing water; a river is a large stream.
- **Oceans, Coasts, and Coastal Waters:** Coastal waters include shore miles, near coastal waters, and estuaries.
- **Lakes:** Lakes are inland bodies of salt water or fresh water.
- **Wetlands:** Wetlands include swamps, marshes, bogs, and similar areas. Wetlands serve many important functions including flood mitigation, water storage, habitat, and natural water filtration.
- **Ground Water:** Ground water is part of the hydrologic cycle. When rain and snow fall to the earth, some water soaks into the ground and flows downward. Ground water refers to water in the “saturated zone”—the area in which the spaces between rocks, gravel, sand, or soil are filled with water. Aquifers are areas where ground water exists in sufficient quantities to supply wells or springs.

Information and resources are available to assist Tribes in identifying and mapping their water resources, including:

- EPA’s [Watershed Assessment, Tracking, and Environmental Results System \(WATERS\)](#) reach files, a series of national hydrologic data layers that identify and interconnect the stream segments or “reaches” that compose the country’s surface water drainage system.
- EPA’s [How’s My Waterway](#) provides information about the condition of local waters based on data that tribal, state, federal, local agencies, and others have provided to EPA. Water quality information is displayed on three scales in How’s My Waterway: Community, State & Tribal, and National.
- The [United States Geological Survey](#) (USGS), in particular the [National Hydrography Dataset](#) (NHD), which is a comprehensive set of digital spatial data that contains information about surface water features such as lakes, ponds, streams, rivers, springs, and wells. USGS and EPA also maintain [NHDPlus](#), which includes the NHD and other datasets.
- The United States Department of Agriculture’s (USDA’s) [Natural Resources Conservation Service](#) (NRCS).
- The United States Fish and Wildlife Service’s (USFWS) [National Wetlands Inventory](#) (NWI).
- Regulatory agencies for neighboring states or Tribes, such as departments of health, environment, parks and recreation, natural resources, forestry, and fish and wildlife.
- Local colleges or universities.
- EPA Project Officers.

Identifying Tribal Water Quality Program Needs

Identifying a Tribe’s environmental and water quality needs is the most essential part of developing a water quality program. A Tribe’s environmental and water quality needs define the program priorities, scope, staffing needs, direction, and projects and activities to implement.

Tribes may need to start by understanding the environmental condition of their waterbodies (for example, the condition of their rivers and other water resources). There may be resources available as a starting point such as data in the Water Quality Portal and assessments conducted by other federal, state, regional, or volunteer monitoring programs. These existing data sources can then be supplemented to fully represent the quality and condition of tribal waters. To understand the condition of their rivers, Tribes may hire and train staff, develop a Monitoring Strategy, develop a QAPP, and

conduct new or supplementary assessments if any existing assessments do not adequately capture the current water quality. If the community needs to protect ground water for their drinking water, the Tribe might start by determining the location of septic systems, identifying system malfunctions, identifying health and water risks, and implementing a management program to reduce the threats to water quality.

Prioritizing needs helps Tribes determine which activities require urgent attention, what is needed to achieve the priority, which activities they cannot or do not need to address immediately, and how to address changing needs of the program. Some factors to consider include:

- What needs are most important to the Tribe? How do the needs relate to one another? For example, in what order should the Tribe address the needs?
- Do the needs pose a threat to public health, safety, or the environment?
- What are the potential benefits of addressing the needs?
- What is the cost to address the needs?
- What needs do the Tribe have control over versus what needs are from off reservation or out of tribal control such as climate change impacts?

This prioritization will also shape each Tribe's water quality program implementation goals. Tribes will include this prioritization in their Monitoring Strategy as described in Chapter 5: Development and Implementation of a Monitoring Program.

Identifying Program Goals and Objectives

The goal of the CWA is to protect, maintain, and restore the physical, chemical, and biological integrity of the nation's waters. Each tribal water quality program will select the activities that support their own specific goals and objectives consistent with the CWA goals.

Goals are the Tribe's desired outcomes for their program, based on their water quality needs. For example, if a Tribe identified needing to assess the condition of their rivers, one of the program goals should be to develop these assessments.

Objectives are the Tribe's activities to achieve their goals. For example, if a Tribe's goal is to develop a water quality baseline assessment, the objective should be to monitor waterbodies on their reservation. The goals and objectives Tribes identify shape the water quality program by informing the work plan activities they will undertake to develop their program.

In cases where a Tribe's waters are healthy, the Tribe should consider including a goal to protect water quality from degradation. An objective or action to support this goal would be to develop a cost-effective monitoring program to document sustained water quality. Another objective might be to review and consider potential water quality impacts of various activities in and around the water to protect high-quality waters.

Establishing Program Milestones

Milestones are the actions that mark a significant change or stage in a project and a timeline for achieving each of them. Milestones can be an effective tool for tracking progress toward long term goals. Milestones enable Tribes to track significant accomplishments toward achieving tribal goals and objectives. Below is an example of a goal and supporting milestones:

- **Example Goal:** Complete an assessment for all waterbodies on a Tribe's reservation.
- **Example Milestones:** Hire staff, develop a Monitoring Strategy, complete an assessment for 10 percent of waterbodies.

A Tribe's work plan should include milestones, especially if more than one grant cycle is needed to achieve the goals and objectives. Milestones help Tribes and EPA track performance. These milestones may also support Tribes' Monitoring Strategies.

Early Community Outreach on Program Establishment and Direction

Tribes in the early stages of program development should consider informing their communities when they have begun developing a water quality program and share information such as program needs, goals, objectives, and plans for meeting those objectives. Tribes could then continue to inform communities about their milestones and achievements as the program progresses.

Developing a Multi-Year Plan

Tribes may want to consider developing a multi-year plan for their overall water quality program and periodically reassessing their programmatic needs, objectives, and goals. During this process, Tribes may uncover new insights into other needs or problems. Utilizing this information, Tribes can incorporate more complex projects that build on previous work plan results. For instance, a Tribe that identified a nutrient pollution problem may wish to locate the source of those nutrients as a next step in a more complex project. Similarly, Tribes may find climate impacts are beginning to influence their water resources and may want to consider incorporating climate adaptation and mitigation in their multi-year plans.

Developing a multi-year plan helps Tribes focus on meeting their long-term goals. Rather than providing detailed activities, this plan will describe programmatic goals, the tribal needs behind those goals, and how the Tribe will achieve them.