

# Protecting Drinking Water at the Source

Information for Our Agricultural Partners

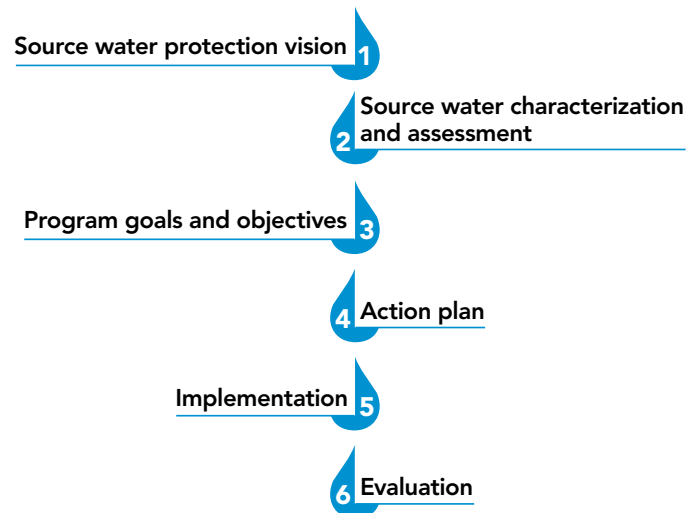


**American Water Works  
Association**

*Dedicated to the World's Most Important Resource®*

# Source Water Protection

What does source water protection involve, and why is it important? The American Water Works Association (AWWA) has put together this brochure to provide a concise overview and suggest ways to protect an invaluable natural asset.



**Figure 1** Components of a Successful Source Water Protection Program

Source: Source Water Protection Justification Toolkit. AWWA, 2018.

## AWWA Definitions

- **Source water** is a raw, untreated supply of water—typically surface water or groundwater—used for current or potential future drinking water.
- **Source water protection** is a proactive approach to safeguarding, maintaining, or improving the quality and/or quantity of drinking water sources and their contributing areas.

**Stakeholders** are any group or individual interested in, affected by, or having an impact on source water protection activities.

## AWWA's Standard

AWWA has established the ANSI/AWWA G300 Standard for Source Water Protection, which outlines six key components of a local source water protection program.

**Figure 1**, from AWWA's Source Water Protection Justification Toolkit, outlines the components of a source water protection program.

## Water Use by the Numbers

The US Geological Survey lists these estimates of water use in the United States in 2015:

- Public drinking water supply withdrawals totaled **39 billion** gallons per day.
- **87%** of the US population—approximately 283 million people—relied on a public water supply.
- **61%** of the US public water supply came from surface water sources; **39%** came from groundwater.
- **98%** of private, self-supplied withdrawals were from groundwater.

According to the US Environmental Protection Agency, there are more than **148,000** public water systems in the United States.

Sources: Water Use in the United States. US Geological Survey. | Drinking Water Requirements for States and Public Water Systems: Information About Public Water Systems. US Environmental Protection Agency, 2020.

## Background

Section 2503 of the 2018 Agriculture Improvement Act (AIA) identifies, for the first time, source water protection as an explicit goal of agricultural conservation programs. Source water protection involves many activities that address water quality and quantity concerns in general. However, it is specifically focused on current or future drinking water supplies.

Why is source water protection important? Water utilities rely on sustainable sources of water that can be treated to provide reliable, high-quality drinking water. Source water protection is one of the first critical barriers to drinking water contamination. It provides many benefits, including public health protection, watershed improvements, and socioeconomic benefits.



## Potential Agricultural Impacts

These are some of the potential impacts on drinking water quality from agriculture:

- **Sediment and bacteria** may cause treatment issues that could result in taste and odor concerns.
- **Nutrient-enrichment and excessive organic matter** may contribute to Drinking Water Standards exceedances, treatment issues, and/or secondary issues such as harmful algal blooms and cyanotoxins.
- Many **herbicides and pesticides** are not removed through conventional treatment processes and present a public health hazard when consumed in drinking water.

Agricultural conservation practices can help reduce these impacts, leading to better protection of public health and reduced costs for treatment. They can be counted toward the mandated allocation of no less than 10% of US Department of Agriculture funds to source water protection under the 2018 AIA.

## Source Water Protection Criteria for Conservation Practices

These statements in AWWA's comments to docket USDA-2019-0001 (March 1, 2019) outlined the criteria to be used in determining whether conservation practices contribute to source water protection:

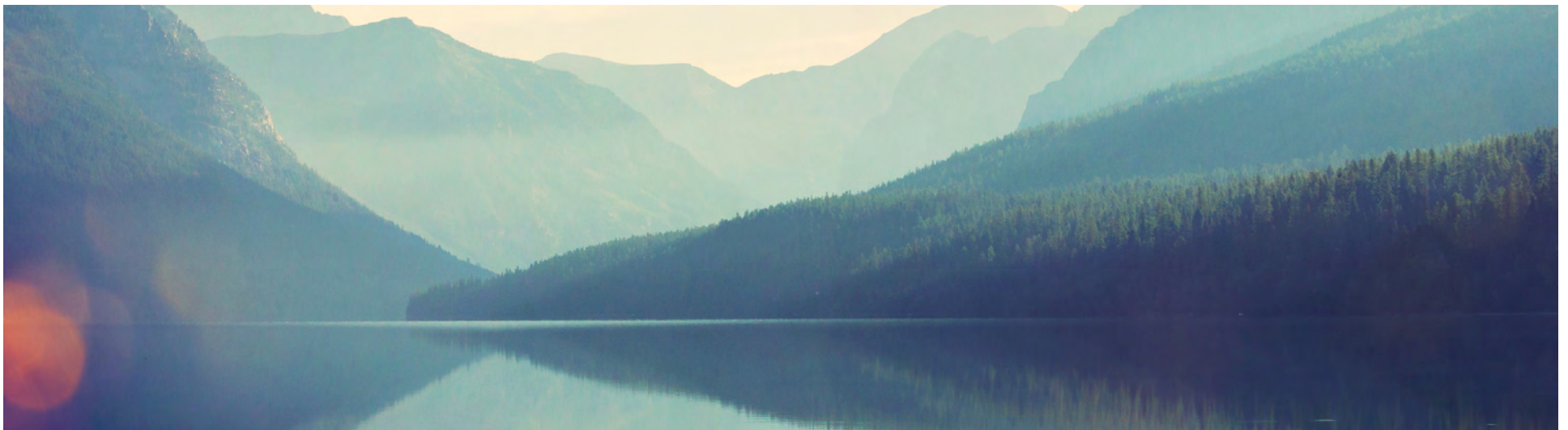
- The practices must provide the source water benefits needed locally. Although there are some commonalities across all utilities, the specific items of concern will vary across different source water protection areas.
- The practices must take place in locations that have source water protection benefit. Although many areas have downstream water supplies (or water supplies pulling from a local aquifer), many areas do not. To be source water protection, there must be a direct benefit to a downstream or down-aquifer drinking water source or supply.

## Regulatory Framework

The 1996 Amendments to the Safe Drinking Water Act (SDWA) established a regulatory framework for source water protection. The revised SDWA required states to develop source water assessment programs that defined source water protection areas for water systems, took inventory of potential contaminant sources, determined water system susceptibility to contaminant sources, and provided the assessment results to the public.

There is no federal requirement to implement local source water protection programs based on these assessments. States take varying approaches to subsequent source water assessment and protection measures, ranging from voluntary to required for surface water and/or groundwater.

Other federal statutes and programs such as the Clean Water Act; Resource Conservation and Recovery Act; Toxic Substances Control Act; Comprehensive Environmental Response, Compensation, and Liability Act; Sole Source Aquifer Program (under SDWA); and Underground Injection Control Program (under SDWA) provide protections from potential pollutants that could impact drinking water supplies.



## Source Water Protection Areas

A source water protection area is the land upstream of a surface water intake, or within the recharge zone of a drinking water well, that is most likely to influence the quality of source water (ANSI/AWWA G300, under revision). The size of the area can vary significantly on the basis of physical, environmental, and regulatory considerations. The 1996 SDWA Amendments required delineation of source water protection areas for each water system. Some systems may have updated their delineations since the original assessments were completed. **Figure 2** shows an example of a source water protection area.



**Figure 2** Example of a source water protection area

Source: Source Water Protection (SWP): Delineate the Source Water Protection Area. US Environmental Protection Agency, 2020.

## Partners in Source Water Protection Efforts

- Natural Resource Conservation Service state and field offices
- Drinking water systems and utilities
- State drinking water primacy agencies
- State environmental agencies
- Watershed organizations
- Soil and water conservation districts
- National Source Water Collaborative and its member agencies

## References

- [ANSI/AWWA G300 Source Water Protection](#)
- [Source Water Protection Justification Toolkit](#)
- [AWWA Source Water Protection Resource webpage](#)
- [Source Water Collaborative](#)
- [Agriculture Improvement Act](#)

## Call to Action

- Work with utilities and state drinking water partners to identify priority areas and issues and encourage involvement and open communication for State Technical Committees.
- Incorporate source water protection into conservation practices and ranking criteria.

