

Water: Source Water Protection

You are here: [Water](#) » [Water Infrastructure](#) » [Ground Water & Drinking Water](#) » [Source Water](#) » [Source Water Protection](#) » Sole Source Aquifer Protection Program

Sole Source Aquifer Protection Program

EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water. For convenience, all designated sole or principal source aquifers are referred to as "sole source aquifers" (SSAs).

[Background](#)[Designation](#)[Post-Designation](#)[Public Participation](#)[Regional SSA Programs](#)[Limitations](#)[GIS Data](#)

Background SSA Designation

SSA designation is one tool to protect drinking water supplies in areas where there are few or no alternative sources to the ground water resource and where, if contamination occurred, using an alternative source would be extremely expensive. The designation protects an area's ground water resource by requiring EPA to review certain proposed projects within the designated area. All proposed projects receiving federal funds are subject to review to ensure that they do not endanger the water source.

The SSA protection program is authorized by section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et seq.). It states the following:

"If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer."

Petition for Designation

EPA published the Sole Source Aquifer Designation Petitioner Guidance in 1987 to assist those interested in preparing and submitting SSA designation petitions to EPA regional offices. The document provides procedures and criteria for proposing aquifer boundaries, determining whether an aquifer is the sole or principal source of drinking water, and evaluating alternative sources of drinking water.

- [Sole source aquifer designation petitioner guidance](#)

Any person may apply for SSA designation. A "person" is any individual, corporation, company, association, partnership, state, municipality or federal agency. Most petitioners work closely with their EPA regional office in developing an SSA petition. A petitioner is responsible for providing EPA with hydrogeologic and drinking water usage data, as well as technical and administrative information required for assessing designation criteria, as detailed in the Guidance. Following EPA's technical review of a petition, the Agency summarizes the information in a technical support document that is made available for public review. A Federal Register notice is published at the end of the review process to announce EPA's decision to designate the area as a sole source aquifer and explain the basis for the decision.

Post-Designation Review Authority and Coordination

Proposed federal financially assisted projects that have the potential to contaminate a designated sole source aquifer are subject to EPA review. Proposed projects funded entirely by state, local or private concerns are not subject to EPA review. Examples of federally funded projects that EPA has reviewed under the SSA protection program are

- Highway improvements and new road construction
- Public water supply wells and transmission lines
- Wastewater treatment facilities
- Construction projects that involve management of stormwater
- Agricultural projects that involve management of animal waste
- Projects funded through Community Development Block Grants

EPA has developed Memorandums of Understanding (MOUs) with federal funding agencies to establish review responsibilities under the SSA protection program and to list categories of projects that should or should not be referred to EPA for review. MOUs help to ensure that projects that pose serious threats to ground water quality are referred to EPA. Examples of MOUs are:

- [US Department of Agriculture, Rural Development Mississippi Office and EPA Region 4 \(PDF\)](#) (2 pp, 25K)
- [Federal Highway Administration of Florida and EPA Region 4 \(PDF\)](#) (2 pp, 26K)

As a result of EPA review of a proposed federally financed project in the designated SSA, concerns regarding ground water quality protection lead to specific recommendations or additional pollution prevention requirements as a condition of funding. Most projects referred to EPA for review are approved without any additional conditions being imposed because they meet all federal, state and local ground water protection standards. Federal funding has been denied, however, when an applicant has been unwilling or unable to modify a project.

Whenever feasible, EPA coordinates the review of proposed projects with other EPA offices and with other federal, state or local agencies that have a responsibility for ground water quality protection. This coordination helps EPA to understand local hydrogeologic conditions and specific project design concerns, and it ensures that the SSA protection measures enhance and support existing ground water protection efforts.

Public Awareness and Participation

SSA designations help to increase public awareness of the nature and value of local ground water resources by demonstrating the link between an aquifer and a community's drinking water supply. The realization that an area's drinking water originates from a vulnerable underground supply can lead to increased interest in protection measures.

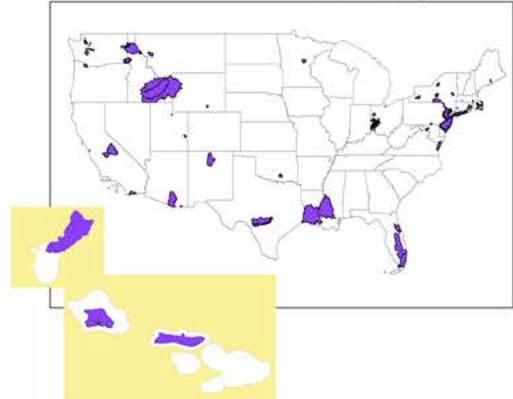
The public has an opportunity to participate in the SSA designation process by providing written comments to EPA or by participating in an EPA-sponsored public hearing before a designation decision is made.

Sole Source Aquifer Designation Regional Program Web sites

To learn more about the 77 existing designated SSAs, see the list of links below for regional contacts and more information:

- [Region 1](#)
 - [Region 2](#)
 - [Region 3](#)
 - [Region 4](#)
 - [Region 5](#)
 - [Region 6](#)
 - [Region 7](#)
 - [Region 8](#)
 - [Region 9](#)
 - [Region 10](#)
- [Source water protection case studies](#) for systems using SSAs are also available.

National Sole Source Aquifers



Limitations of the Program

The designation of an SSA provides limited federal protection of ground water resources and by no means constitutes a complete protection strategy. Effective protection of sources of drinking water requires the integration of federal, state and local efforts, as called for under the Comprehensive State Ground Water Protection Program approach. For example, local wellhead protection programs designed to protect the recharge areas of public water supply wells should work in concert with contaminant source control and pollution prevention efforts at all levels of government. This coordination ensures that source water activities meet the same protection goal without duplication of time, effort and resources.

Many valuable and sensitive aquifers have not been designated because nobody has petitioned EPA for such status or because they did not qualify for designation because of drinking water consumption patterns. Ground water's value as drinking water and its vulnerability to contamination can vary considerably between and within designated aquifers. As a result, EPA does not endorse using SSA status as the sole or determining factor in making land use decisions that might affect ground water quality. Rather, site-specific hydrogeological assessments should be considered along with other factors such as project design, construction practices and long-term management of the site.

Sole Source Aquifer Data Used in Geographic Information Systems (GIS)

A seamless national layer including all available coverage for Sole Source Aquifers (SSA) that can be used in Geographic Information Systems (GIS) is now available to other federal agencies, states, and the public.

Information Available

For the first time, 89 polygons for the 78 sole source aquifers designated can be used to delineate GIS layers for stream flow zones, aquifer recharge areas and other features at the land surface which are all important for the SSA designation. The GIS layers, indexes, and the metadata ("data about data") can be found at <http://www.data.gov/geodata/q780496>.

The availability of data on the Sole Source Aquifer Program provides a vector polygon GIS layer showing available materials representing extents at the land surface related to the designated Sole Source Aquifers (SSA).

Information on SSAs is widely used in assessments under NEPA, and this new SSA geospatial data set publicized through Data.gov will see extensive use by other federal agencies, contracting firms, and the public.

- [New Drinking Water Geographic Information Systems \(GIS\) Data \(PDF\)](#)
(2 pp, 118K, [About PDF](#))