STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

COMMUNITY GUIDE FOR SOURCE WATER PROTECTION PROGRAMS



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Section 1

EXECUTIVE SUMMARY

Source water protection programs (SWPPs) involve activities aimed at safeguarding, maintaining, or improving the quality and quantity of drinking water sources such as rivers, streams, lakes, reservoirs, springs, and groundwater (EPA 2020). While developing a source water protection plan has clear benefits for communities, understanding the process and establishing a funding mechanism are common barriers for effective source water protection. The Idaho Department of Environmental Quality (IDEQ) seeks to make this process easier for Idaho communities by outlining the following in this guide:



- Benefits of developing a SWPP such as improved emergency preparedness, sustainable growth, economic growth, and agricultural benefits
- Where to start and how to maintain a program from an initial vision to implementation and evaluation
- Available funding mechanisms including grants, loans, local fees, and more
- Common challenges and how to overcome them
- Additional resources to help address any remaining uncertainties or questions

This guide also includes spotlights on communities in Idaho and other states that have successfully implemented a SWPP. We discuss what drove them to protect their watersheds, how they fund protection activities, and some key factors in their success in hopes of inspiring more communities to take on this invaluable process.

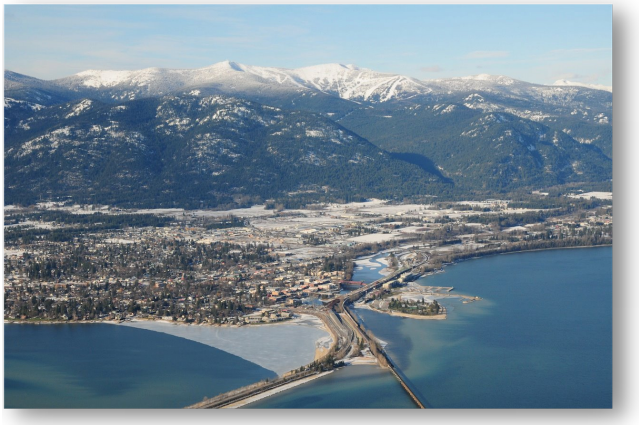
Section 2

INTRODUCTION

What is Source Water and Why Should We Protect it?

Source water refers to the water sources such as rivers, streams, lakes, reservoirs, springs, and groundwater that provide us with drinking supplies. Source water protection involves strategies aimed at safeguarding, maintaining, or improving the quality and/or quantity of drinking water sources and the surrounding area. These strategies differ depending on the type of source (EPA 2020).

The Safe Water Drinking Act authorized the Environmental Protection Agency (EPA) to establish national health-based standards for contaminants in drinking water. Under a later amendment to the Act, states were required to develop drinking water assessment programs that include 1) defining source water protection areas; 2) developing inventories of known contamination sources; 3) determining water system susceptibility to contaminant sources or activities within the source water protection areas; and 4) notifying the public about identified threats. While the state's source water assessment program is required, there is no federal requirement to implement protection from the information found in the source water assessments (AWAA 2018). This means that source water protection activities largely stem from voluntary initiatives at the local level.



Community In Focus

Over a span of decades the city of Sandpoint, Idaho has worked to protect the Little Sand Creek watershed which feeds the city's drinking water system. Through a series of land trades and purchases the city has acquired over 50% of the watershed lands. The city works closely with other landowners and key stakeholders within or associated with the watershed. The city has developed a comprehensive watershed management plan with the most recent iteration of this plan published in January 2021. Beyond ensuring clean and safe drinking water, the watershed provides wildlife habitat, recreation opportunities, and aesthetic value for the community.

What are the Benefits of Source Water Protection?

Source water protection provides many benefits for a community beyond safe and healthy drinking water. It provides social benefits from collaboration as well as improved emergency preparedness and response capacity. It allows for sustainable growth, economic growth, improved water security, and increased property values as a result of the watershed's enhanced aesthetic. Ecosystem management can also help stabilize changing and variable climate patterns which is crucial for agriculture and Idahoans in particular, as agriculture is the single largest contributor to the state's economy (ISDA n.d.). Worldwide, agricultural production is responsible for around 70% of global surface and groundwater withdrawals and contributes significantly more nonpoint source pollutants in our waterways than any other sector (Mateo-Sagasta et al. 2017).

What are the Costs of Source Water Contamination?

The loss of natural vegetation and land degradation can change water flow patterns, leading to unreliable water supplies. Nutrients and sediment from agriculture can raise the cost of water treatment; and water-related losses can cause sustained negative growth of health, income, and property values in a community. Unhealthy water sources pose increased health risks to the public and lead to expanded drinking water monitoring requirements, additional water treatment requirements, and expensive environmental cleanup activities (AWAA 2018). While implementing source water protection programs can seem intimidating and expensive, communities often end up paying much more as a result of not implementing protection programs.



APPROACHES TO SOURCE WATER PROTECTION

The most effective approach to source water protection is usually location-specific, so it is important to take local factors into consideration when designing a program. Common approaches include:

- Land control and land management
- Wastewater, storm water, and septic system management
- Wildlife control
- Infrastructure construction
- Emergency response and preparation
- Collaboration through partnerships and incentives
- Stakeholder outreach and education
- Local ordinances and regulations

The most success comes from a combination of approaches



Given the rurality of much of Idaho, it may be beneficial to place an emphasis on nature-based solutions to manage source water protection. This illustration by the Nature Conservancy outlines how natural infrastructure can be used to improve water quality through actions such as replanting trees on barren hillsides and croplands, using cover crops on fallow fields, and improving road and stream crossings.

Community In Focus

The communities surrounding the Upper Neuse River Basin in North Carolina had noticed their water quality declining, primarily due to population growth and development. By cooperating with multiple water utilities, local government departments, conservation organizations, landowners, local colleges and universities, and the USDA and NRCS, they were able to significantly invest in the region's natural infrastructure. In order to protect the water, they acquired

land surrounding the basin and protected it by forming conservation easements and implementing forestry best management practices that included buffers and field restoration, stream crossing stabilization, and removal of exotic species.

To fund this program, Raleigh Water formed the Upper Neuse Clean Water Initiative by imposing a one-time fee for new water and sewer system hookups, called a "nutrient impact fee", as well as a watershed protection fee on all water bills of $.01 per 100 gallons of water used. The watershed protection fee raised the average water bill $0.40 per month; a fairly small amount of money for individuals which resulted in significant positive impacts for the basin. The nutrient impact fees have raised $7.5 million since 2005, and the watershed protection fees are expected to raise an average of $1.5 million over each of the next five years in Raleigh and $100,000 per year in Durham. Raleigh Water also developed a revenue dashboard for customers to see how big their impact actually is with the small increase of rates. Since the project started in 2006, as of January 2019 the land trusts and other partners have protected 115 properties that include 113 miles of stream banks on 10,491 acres, and another 10 projects with 7 miles of stream banks on 555 acres are in the works.



Section 4

DEVELOPING A SOURCE WATER PROTECTION PLAN AND PROGRAM

Idaho DEQ has an online Source Water Protection Planning Tool to assist public water systems in developing a source water protection plan for their water system. The tool is easy to use and gathers information from existing databases, as well as input from user entry to create a planning document.



Collective Vision

Develop a collective vision of the source water protection program (SWPP) by first working to identify and engage key stakeholders. Stakeholders could include local governments, existing water systems, private landowners, commercial interests, general public and water users, emergency responders (wildfire, spill containment, etc.), and state and federal entities (BLM, USFS, etc.) among others.



Collect Information

Collect information regarding the source water. In Idaho, this can be accomplished through source water assessments. Idaho DEQ completes source water assessments for all public drinking water sources. Source water assessments define the zone of contribution to the well, spring or surface water intake, identify potential sources of contamination in these areas and determines the likelihood that the water supply will be contaminated. Source water assessment data for public water systems in Idaho can be found on the Idaho DEQ website.



Goals and Objectives

Involve key stakeholders in developing goals and objectives. It is important to work to create goals and objectives that are both 'specific' and 'measurable'.



Action Plan

Develop an action plan that incorporates the goals and objectives of the SWPP. The action plan should include key elements. First, it should identify specific actions that will be taken or implemented to achieve the goals and objectives. Next, the plan should include resources that will be needed. Next, the plan should include specific and measurable metrics for evaluation. Finally, the action plan should include a timeline that identifies and specifies evaluation intervals.



Implement

Implement the action plan!!



Evaluate

Conduct periodic evaluation and modify the action plan as necessary.

Section 5

FUNDING APPROACHES

There are numerous funding approaches available to communities working to implement a SWPP. It is important to research different funding mechanisms in order to craft an approach that is uniquely suited to your community. This guide highlights a handful of approaches and some models utilized by communities in Idaho. Beyond the highlighted approaches, there are opportunities for novel and creative approaches to funding programs.

GRANTS & LOANS

Idaho DEQ has collected, organized and summarized many loan and grant programs that are intended to fund SWPPs. Communities should reference the Source Water Protection Matrix which is housed on the Idaho DEQ website to learn more about these opportunities.

Idaho DEQ provides Source Water Protection Grants for projects intended to protect sources of public drinking water. Eligible activities include those that lead to the reduction in risk of contamination of a drinking water source. Projects must contribute to improved protection of one or more public water supply sources.

Eligible applicants include public water systems, state and local government agencies, tribes, special districts (such as soil conservation districts), associations, nonprofit organizations, and educational institutions in Idaho. Federal agencies and owners of privately owned, for-profit public water systems where drinking water is not the main function of their business are not eligible for funding.

FUNDING APPROACHES CONT.

Special district governments are independent, special purpose governmental units (other than school district governments) that exist as separate entities with substantial administrative and fiscal independence from general purpose local governments. (U.S. Census Bureau 2002)

SPECIAL PURPOSE DISTRICT

Special district governments provide specific services that are not being supplied by existing general-purpose governments. Most perform a single function, but, in some instances, their enabling legislation allows them to provide several, usually related, types of services. The services provided by these districts range from such basic social needs as hospitals and fire protection to the less conspicuous tasks of mosquito abatement and upkeep of cemeteries. (U.S. Census Bureau 2002)



Community In Focus

A large portion of Kootenai County in Northern Idaho sits over the Rathdrum Prairie Aquifer which supplies much of the drinking water for the county's residents as well as the city of Spokane in Washington state. In the early 2000s, BSNF Railway constructed a major rail line refueling station over the aquifer near the City of Hauser within Kootenai County The county created the Kootenai County Aquifer Protection District (APD).

The APD was started to ensure monitoring and overall protection of the Rathdrum Prairie Aquifer. The APD partners with various entities to fund aquifer water quality testing, monitoring programs, and various community education efforts. The Kootenai County APD is advised by the Aquifer Protection Board which is comprised of constituents from the community representing various stakeholders. The APD is funded largely through small parcel fees levied on landowners within the district as well as yearly contributions from BSNF.

FUNDING APPROACHES CONT.

TAXES OR FEES

Communities may elect to raise funds for SWPPs through taxes or fees. Local funding sources may include water system rate payers, general tax revenues, capital improvement funds, or other municipal funding. Water systems can also directly fund source water protection activities through modifications to rates or rate structures or special fees.
(American Water Works Association 2018)

Community In Focus

In 2007, Central Arkansas Water examined the water quality of the Lake Maumelle Watershed, one of the two reservoirs used to supply over 450,000 customers with water. They found that although the water quality was very good, the future water quality was at risk of not meeting the goals under build-out scenarios if they did not take action. They collaborated with stakeholders at all levels and decided to use land conservation as a key component in their watershed management plan. Land conservation is one of the most expensive elements of a plan to implement, but the benefits are substantial. Land cover can act as a "pre-treatment" for runoff, as well as help meet target lake water quality goals, reduce chemical costs at treatment plants, and preserve the land's natural characteristics.

The funding mechanisms included revenue bonds and a fixed watershed protection fee on monthly water bills, with a portion of fees dedicated to the purchase of land or conservation easements. The fees depend on the size of the meter, with the majority of fees being $0.45 per month. These fees generate $1 million per year and can be used for any watershed activities designed to protect or improve water quality.



COMMON CHALLENGES

Developing a SWPP requires sustained effort. Communities undertaking this worthwhile effort may benefit from recognizing that there are common challenges that may need to be understood and faced when developing such a program.



01

Leadership

Requires a champion or champions who exhibit vision, sustained effort, and solid communication/diplomatic skills

02

Limited Authority

There may be a lack of jurisdiction over the source water area

03

Resources

Source water protection may require staffing, local expertise, infrastructure investments, and funding for monitoring

04

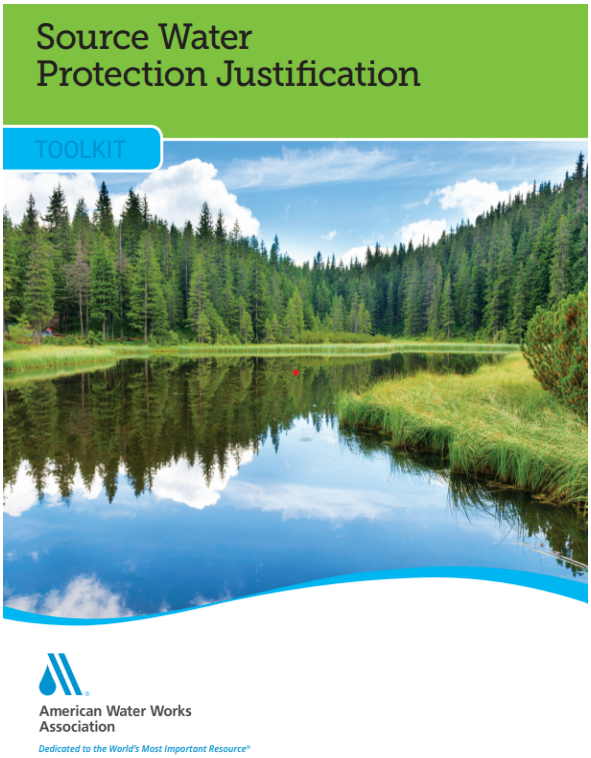
Consensus

There may be competing interests (economic, environmental, community) among stakeholders and there may be resistance to new regulations or fees



While there may be challenges when developing a SWPP, solutions can be found to many of these common challenges. Utilizing existing resources, working to find common ground among stakeholders and community members, educating the community about the benefits of source water protection and pointing to successful examples or models of SWPPs have all proven to be beneficial.

ADDITIONAL RESOURCES





IDAHO Department of Environmental Quality
Source Water Protection Planning Tool





Contact

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208)373-0502 or
(866)790-4337

www.deq.idaho.gov/
https://facebook.com/IdahoDEQ
@https://twitter.com/IdahoDEQ
https://linkedin.com/company/idahodeq

Section 8

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