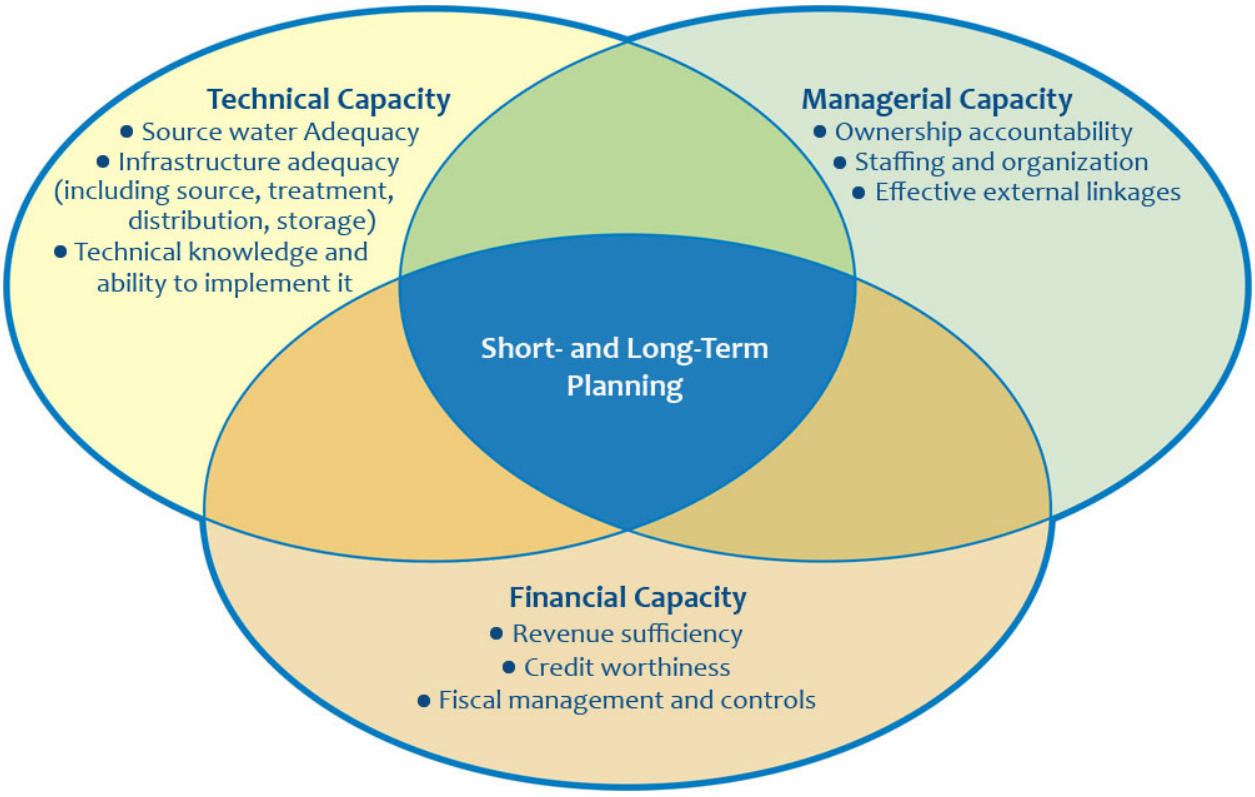
Small Water System Management Program Guide



A planning tool for community water systems to build technical, managerial, and financial capacity

October 2011 (revised)
DOH 331-134

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

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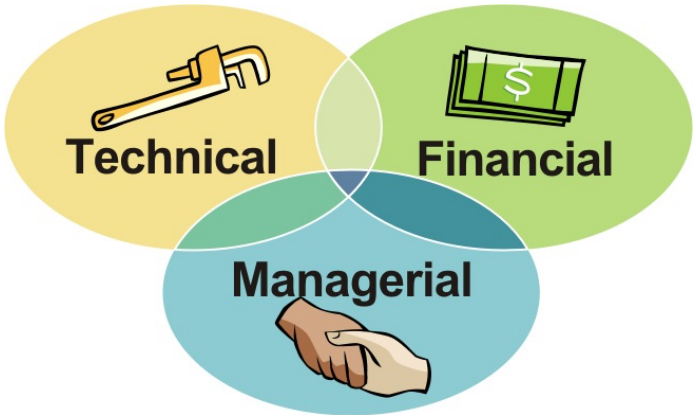
The time to repair a roof is when the sun is shining.

- President John F. Kennedy



SWSMP Tables

Excel Spreadsheets

Table 2-6
http://www.doh.wa.gov/ehp/dw/Publications/swsmp2-6.xls

Table 3-1B
http://www.doh.wa.gov/ehp/dw/Publications/swsmp3-1B.xls

Table 3-3
http://www.doh.wa.gov/ehp/dw/Publications/swsmp3-3.xls

Securing Your Water System's Future

> *There is in the act of preparing, the moment you start caring.*
> - Winston Churchill

If you are the owner, governing board member, or operator of a small community water system, this guidebook is for you. It will lead you to the knowledge, skills, and resources you need to ensure that your water system continues to meet its obligations to your community. If you have never engaged in a structured process to develop and implement a planning tool to prepare your water system for the challenges of today and tomorrow, now is the time to start.

This guidebook will direct you to collect information, assess it, and determine the type and level of action needed to secure your system's future. If you've done some of this work already, it will challenge you to revisit your past work, update it as needed, and maintain it in one place so the next generation of board members and operators can carry on your legacy of service.

While preparing this technical, managerial, and financial planning document, be sure to involve governing board members, current and previous operators, administrative assistants, accountants, vendors, contractors, and consumer representatives. It's a big job to organize and harness the talent and energy of all these people. But, don't turn away from the task; it's too important. Your community's economic wellbeing and the health of its members depend on the water system functioning properly—from the pumps and pipes that deliver the water, to its management structure, and the financial capacity that make it all possible.

Using this Document

We divided this guidebook into three chapters: managerial, technical, and financial. These terms describe the main attributes of successful water system operations. There is nothing magical about how we assigned the content within the sections. The attributes are interrelated and interdependent.

By failing to prepare, you are preparing to fail.

- Benjamin Franklin

Each chapter includes a section called "Next Steps." You can use these sections to keep track of unaddressed items and future actions you want to take to improve your system. If your latest sanitary survey identified items to correct, include those items in your list of next steps. **Our goal is to help you develop a living document to govern the managerial, technical, and financial aspects of your water system.**

Try to develop each section with input from your system's governing board and operators. Invite community members to contribute to this effort by allowing them to share their views on the appropriate level of water system planning, desired level of infrastructure reliability (such as maintaining pressures above required minimums, frequency of outages, or taste and odor control), and how to allocate the cost of service to customers (including future improvements). **Tap into the energy of the community you serve!**

This guidance is general, but the content you add should reflect your system's specific circumstances. Each section is a required element unless it says it is optional. Think about how you'll use this document before you begin. It should hold the basic information shown in the Table of Contents. But, decide whether you also want it to serve as a:

- Operations manual.
- File for operating records, sampling results, reports, correspondence, and engineering designs.
- Placeholder for policies and governing ordinances or by-laws.
- Record of the governing board and operator's duties and responsibilities.
- Institutional memory of the water system.

Your decisions will determine how you build this document, where you keep it, how you maintain it, and who needs a copy to do their job.

This document contains tables and links to Excel spreadsheets. The steps in each section explain how to use them. Some of the tables include check boxes.

☒ You can fill-in the check boxes by double clicking on the box and selecting "Checked" as the default value.

Our Perspective on Planning

The Department of Health Office of Drinking Water (DOH) is committed to appropriate planning by all water systems. Here's why:

1. Safe and reliable drinking water doesn't happen by itself. Dedicated people committed to appropriate system planning, design, operation, and management make it happen.

2. Many small system governing board members receive little or no compensation for their time and oversight. The members often don't fully understand their proper role and responsibility for providing safe and reliable drinking water when they take on these duties.

3. Many small system operators have responsibilities that extend beyond the water system. They often have limited time and resources to do the job that needs to be done.

4. People who govern or operate small community water systems have giant responsibilities.
   a. **Safe drinking water is a 24/7 activity.** Serious illness may result from a single unanticipated event in the system.
   b. **Economic considerations.** The value of a community's homes and businesses is connected to the safety and reliability of the water system that serves them.
   c. **High expectations.** Water system customers have expectations as high as those they place on phone and electric power utilities.
   d. **Serious legal obligations.** There are serious legal and financial liabilities associated with owning and operating a public water system.

5. Small systems face tremendous financial pressures because they spread their costs across fewer customers. This means each regulation and new task imposes a disproportionately high cost to each customer.

6. Nothing lasts forever. Eventually, you will need to replace every single part of your water system. Managerial and technical planning tools will not help if the infrastructure is failing. This guide emphasizes the importance of evaluating your short-lived and long-lived assets to prioritize their replacement and to begin planning now how you will pay for it.

Planning Expectations

All water purveyors should do the appropriate level of planning for their systems. System owners and operators should work together in such an important effort. The guidebook will help you develop a Small Water System Management Program (SWSMP). The SWSMP is the planning document described in WAC 246-290-105. The other planning document is a comprehensive water system plan (WSP) described in WAC 246-290-100. All community water systems that are not required to complete a WSP must develop and implement a SWSMP.

A SWSMP is for community water systems that are not "expanding." It's the right document if you are restricting service to your existing service area and you are not going to construct new infrastructure (such as a well or reservoir) to increase your system's capacity to serve more connections than it is currently approved to serve. See your Water Facilities Inventory (WFI) for the number of approved connections.

If you plan to expand your service area or construct new infrastructure to grow your number of approved connections, call your DOH regional office and speak with the regional planner for your county. You may need to submit other planning or engineering documents.

You do not need to hire a professional engineer to complete this SWSMP. You may choose to do so, but it is not required.

We may require you to submit your SWSMP for our review and approval for any of the following reasons:

- Significant non-compliance with drinking water regulations
- Significant operational, technical, managerial, or financial problems
- Obtaining approval of your water system, if it's never been approved (if your operating permit is BLUE, it's possible that your system was never approved)
- Satisfying a condition for a Drinking Water State Revolving Fund (SRF) application

Submitting your SWSMP for DOH approval. Take note of the following if you intend to submit your SWSMP for approval:

1. **Contact your DOH regional office to request a "preplan meeting"** with our regional planning and engineering staff. This is your opportunity to discuss the proper focus of your SWSMP. You must address each required section, but we can work with you to determine the scope and level of detail depending on your system's needs and unique circumstances.

2. You must include a **Small Water System Management Program Submittal (331-396)** form.

3. **You must submit at least two copies.** Ask your DOH regional planner how many printed copies you need to submit. In most cases, we will forward one copy to the Department of Ecology. We encourage you to include an electronic copy with the printed version, but you are not required to do so.

Technical Assistance

Here are technical assistance providers that may be able to help you develop your SWSMP.

Third Party Technical Assistance Providers	
Rural Community Assistance Corporation 1403 South Grand Blvd, Suite 203 S. Spokane, WA 99203 http://www.rcac.org/	***Evergreen Rural Water of Washington*** P.O. Box 2300 Shelton, WA 98584 (360) 462-9287 http://www.erwow.org/

Washington State Department of Health Office of Drinking Water http://www.doh.wa.gov/ehp/dw/default.htm	
Headquarters Town Center 3 (243 Israel Road SE, Tumwater) P.O. Box 47822 Olympia, WA 98504-7822 (360) 236-3100 or (800) 521-0323 http://www.doh.wa.gov/ehp/dw/Staff_Lists/hq_staff.htm	**Northwest Regional Office** 20435 72nd Ave. S., Suite 200 Kent, WA 98032 (206) 395-6750 (Island, King, Pierce, San Juan, Skagit, Snohomish and Whatcom counties) http://www.doh.wa.gov/ehp/dw/Staff_Lists/northwest_regiona.htm
Eastern Regional Office 16201 E Indiana Ave, Suite 1500 Spokane Valley, WA 99216 (509) 329-2100 (Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman and Yakima counties) http://www.doh.wa.gov/ehp/dw/Staff_Lists/eastern_ro.htm	**Southwest Regional Office** Town Center 3 (243 Israel Road SE, Tumwater) P.O. Box 47823 Olympia, WA 98504-7823 (360) 236-3030 (Clallam, Cowlitz, Clark, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston and Wahkiakum counties) http://www.doh.wa.gov/ehp/dw/Staff_Lists/southwest_region.htm

We designed this guidebook with internet access in mind

This guidebook is available in electronic format only. You can download it or request a copy in CD format. Each section has links to additional guidance material, forms, and other resources.

Our publications are online at https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm

Our forms are online at http://www.doh.wa.gov/ehp/dw/forms/forms.htm

If you need this publication in alternate format, call (800) 525-0127. For TTY/TDD, call (800) 833-6388.

Managerial Chapter Overview

Managerial capacity refers to the ability of the system decision makers to conduct necessary activities such as staffing, planning, maintaining accountability, and interacting with customers and regulatory agencies.

> *Planning without action is futile, action without planning is fatal.*
>
> - Unknown

Your Mission Statement

We encourage you to place your system's mission statement at the start of this section. If you don't have a mission statement, take the time to develop one by involving a cross-section of your water system staff and your community. Your mission statement doesn't have to be complicated, just a clear statement that explains why your organization exists and its values.

Here are some examples:

- To provide our community with quality water and great customer service.
- To provide a safe and reliable drinking water supply to our customers.
- To provide a high quality water supply that meets current and future customer needs.
- To provide an adequate and reliable water supply of desired quality—now and for future generations—in a manner that integrates economic growth, environmental protection, and social development.

Formal Adoption

We encourage you to have your governing body formally adopt your SWSMP after it's completed. This extra step clarifies that you intend to use your SWSMP and signals the importance of delivering safe and reliable drinking water to your community.

Management Elements

The managerial chapter addresses the following topics. Each section includes its purpose, background, specific instructions or guidance, ideas for further action, and links to additional resources. Some sections provide a template that meets minimum requirements.

- Management structure and the governing board
- Service area and facilities map
- Service policies
- Cross-connection control program
- Source water protection program
- Emergency response plan

Technical Chapter Overview

Technical capacity refers to the physical system, including source, treatment, storage and distribution plus the ability of personnel to operate the system adequately.

> *Even if you're on the right track, you'll get run over if you just sit there.*
>
> - Will Rogers

Technical Elements

The technical chapter addresses the following topics. Each section includes its purpose, background, specific instructions or guidance, ideas for further action, and links to additional resources. Some sections provide a template that meets minimum requirements.

- Certified operator
- Operation and maintenance program
- Water quality monitoring program
- Component inventory and assessment
- Water rights self-assessment
- Water production
- Current water consumption
- Future water consumption
- Water use efficiency program

This chapter offers an optional Excel spreadsheet to help you calculate your water production, consumption, and distribution system leakage.

Financial Chapter Overview

Financial capacity refers to the system's ability to generate sufficient revenue, maintain credit worthiness, and manage funds through budgeting, accounting, and other methods of fiscal control.

> *One step at a time is good walking.*
>
> - Chinese Proverb

A Looming Crisis

EPA recently estimated that, over the next 20 years, our state will need $2.4 billion for structural improvements to community water systems with fewer than 1,000 connections. This represents an average of $1.2 million per system to replace and repair system infrastructure.

The Funding Squeeze

Loan and grant funding is extremely competitive. Local, state, and federal budget deficits are creating a higher demand for these funds, while the pool of available funds is shrinking. It is common for our state revolving loan fund program to receive applications requesting five times more money than we have available to loan.

Every funding agency (public or private) will expect a complete financial picture of your organization. Funding agencies will not grant or loan money on favorable terms to a water system that cannot tell its complete financial story.

If you intend to obtain financing to maintain and improve your system, start planning now! You will need to show what your true cost of service is, how you allocate the cost to your customers through rates and fees, how successful you are at collecting rates and fees, and where the money is actually spent. **Commit to operating your system like a business enterprise.**

The bottom line is that your total annual revenues must cover your total annual operating expenses, debt payments, taxes, fees, and budgeted payments into reserve accounts. Water systems should have dedicated reserve accounts for an operating cash reserve, emergency reserve, and short-lived and long-lived asset replacement reserves. This guidebook provides the basic building blocks for creating the right budget for your system's short- and long-term needs.

Financial Elements

The financial chapter addresses the following topics. Each section includes its purpose, background, specific instructions or guidance, ideas for further action, and links to additional resources.

- Short-lived asset replacement and other planned improvements
- Long-lived asset replacement
- Six-year budget
- Water rates

This chapter offers two optional Excel spreadsheets to help you create a complete budget.

How often do you check the vent and hatch on your reservoir?

Are your wells secure from contamination?

Are your treatment processes up to the task of ensuring safe water every day?

Are you in a position to respond in an emergency?

How effective is your cross-connection control program?

Is your water supply vulnerable to severe drought?

How will you finance replacement of your pipelines?

How should you prepare for this?

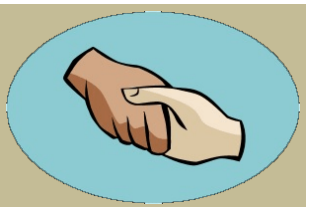
Small Water System Management Program

Sun Vista/Sunlight Beach HOA

85160

3/21/2013
Updated Directors and Rates 2/2/2023
See Pages 17 and 25

Chapter 1: Managerial



Managerial capacity refers to the ability of system decision makers to conduct activities such as staffing, planning, maintaining accountability, and interacting with customers and regulatory agencies.

What is sufficient managerial capacity?

Ownership Accountability	• Owners, governing board members, and managers have clearly identified responsibilities. These individuals are accountable for the management of the system. • Governing board members and managers are actively involved in capital improvement and financial planning to meet the short- and long-term needs of the system. They develop and periodically revisit strategic plans, including source water protection and emergency preparedness.
Staff Knowledge and Training	• System staff have necessary licenses and certifications and adequate knowledge to manage operations and understand regulatory requirements. • System staff receive ongoing training to stay current on new regulatory requirements and best practices.
Effective External Linkages	• Governing board members, managers, and system staff interact with their customers and with regulatory agencies. • Governing board members, managers, and system staff build relationships with customers, technical assistance providers, and regulatory agencies to increase their ability to solve problems quickly.

Mission Statement *(Optional)*

Insert your mission statement.

Statement of Adoption *(Optional)*

Describe how and when your governing board adopted (or will adopt) this document.

At the next stated meeting

Governing Board Members *(Optional)*

Directors Updated 2/2/2023

List the names and titles of current governing board members.

Member	Office
Richard Townsley	President and CEO
Nathan Ware	Vide-President
Cheri Filion	Secretary
Karen Johnson	Chief Financial Officer
Richard Townsley	Director/Conservation
Norman Ledbetter	Director/Finance
Nathan Ware	Director/Compliance
Robert Winquist	Director/Governance
Tim Hillman	Director/Operations
Ed Sheets	Director/Planning Com
Barbara Bennett	Director/Planning Com

1.1 Management Structure and the Governing Board

Purpose

To document the system's management and ownership structure.

Background

A water system's governing body is legally obligated to deliver safe drinking water to its customers. Such a responsibility must not be taken lightly. System decision makers play as important a role in delivering safe drinking water as system operators do because they set the system's priorities and policies. It is important to document who makes decisions and how they make them, and communicate this information to system staff and customers.

How to complete this section

Answer the questions in Table 1-1 on how your system is owned and managed and how decisions are made. Your sanitary surveyor may go over these answers during your sanitary survey.

Some questions ask you to attach copies of relevant documents. This will keep important information in one place. You can attach copies in this section, in Chapter 4 (Other Documents), or add a reference to explain where they are.

Table 1-1
Ownership and Management

Water system name	Sun Vista/Sunlight Beach HOA	
Type of system *Check all that apply.*	☒ Homeowners association ☐ Partnerships ☐ Local government (Town*, County*, Public Utility or Water District) ☐ Other ☐ Single private owner ☐ Corporation **If your system is a town or county, ask your regional planner if a SWSMP is the right planning document for you.*	
Name and phone number for person(s) or association that owns system	Name Sun Vista/Sunlight Beach HOA	Phone 808-479-7008
Do you have articles of incorporation or a certificate of registration with the Department of Revenue?	☒ Yes. If yes, attach a copy ☐ No.	

Do you have a document that establishes the legal authority to make decisions for the system? *For example, by-laws, resolutions, ordinances?*	☒ Yes. If yes, attach a copy. ☐ No	
Do you have any insurance policies for the system?	☒ Yes. ☐ No.	
Who makes the major decisions? *For example, who decides when to make improvements, how to finance improvements, when to allow additional connections.*	☐ Single party ☒ Board 7-9 (how many members) ☐ System customers or a representative subset of customers ☐ Commissioners (how many commissioners) ☐ Other	
How long are the terms of service for members of the decision-making body?	3 years	
How often do those responsible for making decisions meet?	☐ Monthly ☐ When necessary	☐ Annually ☒ Quarterly
	☐ Other	
Are customers notified about these meetings?	☒ Yes ☐ No	If yes, how are they notified? Web site
Is there an organizational chart?	☐ Yes. If yes, attach a copy. ☒ No	
Does the system have any paid employees?	☐ Yes ☒ No	If yes, do you have personnel policies? ☐ Yes ☐ No
Identify the persons or positions responsible for making financial transactions. *For example, who maintains records, pays bills, and receives payments?*	Treasurer President	
Do you have a process to record and respond to customer complaints?	☒ Yes ☐ No.	If yes, explain your process. As needed

Further action

- Have any of these questions caused you to think about changing your current practices?

  ☐ Yes. If yes, list the issue in Section 1.7 (Next Steps).

  ☒ No.

For more information

- **Owning and Managing a Drinking Water System (331-084)** outlines how to get started, regulations, obligations, helpful tips, and responsibilities.

1.2 Service Area and Facilities Map

Purpose

To document the existing service area and location of critical system facilities.

Background

A map showing your service area and location of system facilities will help system personnel conduct operational activities such as making repairs, taking samples, or reading meters. A service area map identifies where you currently serve customers and where you intend to serve future customers (if your system has DOH approval for additional connections). A facility map shows the locations of your system's facilities. It will be useful for preparing your emergency response plan and when explaining to new customers where and how you provide service.

How to complete this section

Follow the instructions below to create a service area map and facilities map. Attach a copy of each map to complete Table 1-2. You can use one map to serve both purposes if you prefer.

Step 1 **Get two copies of your system map.** You can use these documents to create a service area map and a facility map. Your final engineering documents or "as-built drawings" should have a map of the system. If you can't get these documents, you can use a street map, but a more detailed map is better. Your local county planning department or assessor's office may be able to help you.

Step 2 **Service area map.** Identify the existing service area on the map. This is the area where the system already provides service and can serve additional lots within the existing distribution system. Include township and range, and streets or roads on this map. This map should be at least 11" x 17" sized paper.

Step 3 **Facilities Map.** Identify the location of the facilities listed below. If your system does not have a particular type of facility, you can indicate this with "N/A."

- Sources (well name, DOH source #)
- Storage facilities (name and capacities)
- Treatment facilities with capacities
- Pressure zones
- Booster pumps (name and capacities)
- Hydrant
- Distribution lines (include type of material and diameter of pipe)
- Valves (pressure reducing, isolation, air relief, or blow off)
- Sampling points (source and distribution)

Step 4 **On each map, indicate who produced it and when.**

Table 1-2
Service Area and Facilities Map

Attach a copy of each map	Date produced	Produced by
Service area map.	2013	John Lovie
Facilities map.	1995	George Bratton

Municipal Water Law. All Group A community water systems with 15 or more **residential** connections are "municipal water suppliers." Municipal water suppliers can expand the place-of-use boundary in their water right(s) to match their service area in a DOH-approved planning document. To receive this benefit:

1. Identify your service area as your water right place-of-use boundary on your service area map.
2. Ask each local planning agency with jurisdiction over your service area to review your SWMSP and complete a **Local Government Consistency Review Checklist**. The checklist has instructions to help you through the process, but we recommend that you contact your DOH regional office planner before you start.
3. Include the completed checklist with your SWSMP when you submit it to DOH for approval.

Further action

- Is there another water system nearby?

  ☒ Yes.

  ☐ No.
  Reach out to adjacent water systems. Share a copy of your service area map. Gauge interest in the possibility of sharing emergency equipment, the cost of new equipment that both systems can use, or even installing an emergency intertie between systems.

For more information

- **Municipal Water Suppliers: Service areas in planning documents (331-432)** explains the new service area requirements and service area definitions municipal water suppliers should understand when they develop their planning document.
- **Municipal Water Law: Expanding a water right place of use (331-367)** explains how a municipal water supplier can expand its water right's place of use to a service area identified in a DOH-approved planning or engineering document.
- Visit our Municipal Water Law webpage at http://www.doh.wa.gov/ehp/dw/municipal_water/mw-law.htm

1.3 Service Policies

Purpose

To document the system's service policies.

Background

Having effective service (or system) policies will help achieve your system's mission and reduce liability exposure. Service policies define expectations for customers to receive service. If DOH approved your system for more connections than it currently serves, your policies should describe the process and requirements for new customers to connect to the system and how the way you will respond to requests for new service.

What to consider when creating or updating your service policies:

- Policies and fees for beginning and terminating water service (such as hook-up fees for new service connections or late payment fees for existing customers).
- Customer responsibilities for new service requests (such as meter specifications and material charges).
- System responsibilities to provide service in the service area and how it meets this responsibility.
- Rate structure and fee structure and procedures for updating them.
- Funding or financing to replace worn-out equipment or to make other capital improvements.
- Cross-connection control devices and requirements for inspecting and testing them.
- Customer consent for inspections and repair activities that may disrupt water service.
- Policies for responding to a water shortage (such as when a well or other source runs dry).
- Water use efficiency goals.

How to complete this section

Answer the questions in Table 1-3 about your service policies. If you answer, YES, briefly describe the policy or attach a copy in this section.

Table 1-3
Service Policies

Do you have a written policy for the following?	Has it ever been updated?	Brief description **Rates Updated 2/2/2023**
Water rate structure and fees.	☒ Yes ☐ No If yes, when was last update? 2013	Cubic feet / Rate Base charge $ 75.00 0-2499 $ 0.01 2500 - 3499 $ 0.05 >3500 $ 0.15
System improvement funding. *For example, how you will allocate the cost of future replacements or improvements to customers.*	☒ Yes ☐ No If yes, when was last update?	6 year budget
Customer responsibilities. *For example, consent agreements for inspections or requirements to install and test backflow assemblies.*	☒ Yes ☐ No If yes, when was last update?	
New customer responsibilities. *For example, hook-up fees, other assessments, or service meter requirements.*	☒ Yes ☐ No If yes, when was last update?	

Further action

- Do you periodically review your policies to make sure they continue to meet the system's needs?
  ☒ Yes ☐ No.
  If no, consider making this commitment and identifying follow-up action in Section 1.7 (Next Steps).

For more information

- **Service area policies (331-438)** explains what to consider when developing service area policies.

1.4 Cross-Connection Control Program

Purpose

To develop and implement a cross-connection control (CCC) program to protect the water system from contamination.

Background

Cross-connection control is a public health issue. In the U.S., cross connections caused half of all waterborne disease outbreaks related to distribution systems according to community water system outbreak data from 1981-2002. (A Public Health Perspective on Distribution Systems, Stig Regli, Total Coliform Rule/Distribution System Stakeholder Technical Workshop, January 30, 2007, USEPA).

A cross connection is any actual or potential physical connection between a public water system (or customer's plumbing system) and any source of non-potable liquid, solid or gas that could contaminate the potable (drinking water) supply by backflow. Common residential cross-connection hazards include irrigation systems, auxiliary water supplies (wells), boilers, and swimming pools.

Each water system must develop and implement a CCC program to protect the distribution system from contamination via cross connections (WAC 246-290-490). The current CCC rules have been in place since 1999. Washington State first adopted CCC rules for public water systems in 1970.

Table 9 in WAC 246-290-490 describes typical severe and high-hazard customers (premises). Table 9 includes wastewater treatment plants and lift stations, hospitals and medical centers, labs, car washes, commercial laundries, and mortuaries. If your system serves a **high-hazard** connection, a DOH-approved reduced pressure principle backflow assembly (RPBA) or air gap must be installed for premises isolation. **Severe** hazard facilities require either an air gap for premises isolation or a combination of a premises isolation RPBA and an in-plant air gap.

For connections **without** Table 9 hazards, you can rely on either premises isolation backflow assemblies or preventers installed at the point of hazard (fixture protection). To rely on fixture protection, you must meet certain conditions in the WAC.

The Uniform Plumbing Code (amended for Washington) establishes backflow prevention requirements for plumbing fixtures and equipments, such as swimming pools and irrigation systems. The Pacific Northwest Section of the American Water Works Association provides a CCC manual that includes detailed fixture protection information.

How to complete this section

The instructions below will guide you on how to develop and implement a complete CCC program. Use Table 1-4 to track your progress and identify target completion dates for remaining steps.

Note: Some steps direct you to include a copy of relevant documents so that your SWSMP contains minimum CCC program information. You can also build your entire CCC program in your SWSMP.

The CCC program requires initial and ongoing tasks. You can separate the tasks into three categories:

1. CCC program development
    a. Retaining qualified personnel
    b. Establishing legal authority
    c. Establishing administrative and technical procedures

2. CCC program initial implementation
    a. Developing a record keeping and reporting system
    b. Conducting initial hazard evaluations
    c. Ensuring assembly installation

3. CCC program ongoing implementation
    a. Ensuring annually assembly testing
    b. Educating customers
    c. Re-evaluating existing and new service connections

Here are some tips before you begin:

- Developing a CCC program may feel overwhelming. If you don't have a CCC program Plan, focus on the steps in Category 1 (above). Take these steps before requiring any customers to install backflow prevention assemblies.

- Public education can play a key role in implementing a successful CCC program. Customers may be more willing to comply with your CCC policies when they understand their roles and your responsibility to prevent and control cross connections.

- Establish your legal authority and program policies and procedures **before** you implement your CCC program plan.

CCC Program Development

Step 1 Retain a cross-connection control specialist (CCS). Retain an experienced DOH-certified CCS to help draft your legal authority document, develop CCC program policies and procedures, conduct initial hazard assessments, and lead your ongoing CCC program implementation tasks. If you don't have a CCS on staff, you can hire a contract CSS or have your operator become certified. You may find a contract CCS to be more cost-effective.

For guidance on hiring a contract CCS, see Section 7.1.3 of **Cross-Connection Control for Small Water Systems (331-234).**

For a public list of CCSs, see http://www.backflowgroup.org/resources/CCSListPub2006-09-28.pdf.

Step 2 Establish the legal authority to implement a CCC program. Adopt an ordinance, resolution, by-law, or other legal document that:

1. Establishes your legal authority to implement a CCC program.
2. Describes the operating policies and technical provisions of your CCC program.
3. Describes the enforcement actions you will use to ensure that customers comply with your CCC program.

- Include a copy of your legal document in this section.

See a sample legal document in Appendix A of the **Cross-Connection Control for Small Water Systems (331-234)** guidance manual.

Step 3 Establish administrative and technical procedures. The legal document in Step 2 should include **general** CCC program policies and procedures. After the legal document is adopted, your CCS must develop a CCC program plan that includes **detailed** technical and administrative policies and procedures (WAC 246-290-490(3)). Be sure to have the governing body approve the completed CCC program plan **before** you start implementing the program.

CCC Program Initial Implementation

Step 4 Develop a record-keeping and reporting system. Develop a CCC record-keeping system to track the following:

- Hazard evaluation results (by connection).
- Inventory information for backflow preventers that protect your system.
- Test report information for backflow preventers that protect your system.

See a sample completed CCC program in Appendix A of the **Cross-Connection Control for Small Water Systems (331-234)** guidance document.

Reminders:

- All water systems must complete Annual Summary Report (ASR) forms (available on our website) and submit them to DOH upon request. The ASR is an effective tool to evaluate and document the status of your CCC program and to determine your next steps.
- If a backflow incident occurs, you must submit a completed **Backflow Incident Report Form (331-243)** to DOH.

Tips:

- Many small systems can use "off the shelf" software (like Microsoft Excel) to manage their CCC program data.
- Keep all original CCC records in your water system files, even if you hired a contract CCS.

Step 5 Conduct initial hazard evaluations. After you setup your record-keeping system, direct your CCS to:

- Evaluate each service connection for cross-connection hazards.
- Determine the type of protection needed (if any).
- Notify your customers of the results of the evaluations.
- Be sure to install approved backflow assemblies (if needed).
- Ensure that assemblies are tested annually.
- Keep required CCC records.

Review billing records for potential high-hazard connections. Mail a "water use questionnaire" to your customers. Use the results to identify connections with specialized plumbing or onsite activities that could pose a risk to your system. Ask your CCS to conduct hazard evaluations starting with the highest priority (Table 9 type). **Your CCS must make the final hazard assessment for each connection.**

See a sample water use questionnaire in Appendix "D" of our **Cross-Connection Control for Small Water Systems (331-234)** guidance manual.

CCC Program Ongoing Implementation

Step 6 Ensure assembly testing. Ensure that a DOH-certified backflow assembly tester (BAT) inspects and tests backflow preventers in place on the system as follows:

- Upon installation, repair, or relocation.
- After a backflow incident.
- Annually thereafter.

Develop an assembly testing quality assurance and quality control (QA/QC) program. It should include documentation of BAT certification and field test kit calibration. See a list of **DOH-certified backflow assembly testers** willing to provide services to the public.

Step 7 Educate customers. Educate your customers about cross-connection health hazards and how to control or eliminate them. Periodically send water bill inserts or brochures on CCC or include information in your Consumer Confidence Report. See sample CCC education brochures at http://www.doh.wa.gov/ehp/dw/Programs/ccc-brochure.htm

- Briefly describe how you will educate customers:
  Letters, Annual meeting, visits if needed

Step 8 Re-evaluate existing connections and review new service requests. Periodically reevaluate existing connections (without RPBAs) and review any changes in water use, particularly if there has been an ownership change for the service connection. Evaluate new service requests and ensure that the appropriate backflow protection is installed (if needed) **before** you serve water to the connection. Your CCS should help with these tasks because the CCS must make the final hazard assessment for each connection.

Table 1-4
Cross-Connection Control Program

Identify the steps you completed and target completion dates for remaining required tasks.

Completed	Task	Completion Date
☒	**Step 1**: Retain a DOH-certified cross-connection specialist (CSS).	2012
☐	**Step 2:** Establish legal authority to implement a program. Attach a copy.	
☐	**Step 3:** Develop administrative and technical procedures.	
☒	**Step 4:** Develop a record-keeping and reporting system.	2012
☐	**Step 5:** Conduct initial hazard evaluations and ensure backflow preventers are installed.	
☐	**Step 6:** Ensure assembly testing.	
☐	**Step 7:** Educate consumers about cross connections.	
☐	**Step 8:** Reevaluate existing services and review new applications for service.	

Further action

- Include required tasks not yet completed in Section 1.7 (Next Steps).

For more information

- See our **Cross-Connection Control and Backflow Prevention** webpage for comprehensive guidance, backflow incident report and annual summary report forms, and other resources.

Training scholarships available

- Want to become a certified CCS? The Pacific Northwest Section of the American Water Works Association (PNWS-AWWA) offers **CCS Training Scholarships** for employees of public water systems with 300 to 2,500 connections that meet other requirements.

1.5 Source Water Protection Program

Purpose

To develop a source water protection (SWP) program to protect groundwater or surface water sources that supply the system.

Background

The watershed or drainage basin surrounding your drinking water source is the source water protection area. It's important to protect and manage this area to ensure safe and reliable drinking water over the long term. All drinking water sources are at some risk of contamination and loss of supply if not carefully protected. Source water protection focuses on maintaining, safeguarding, and improving the quality and quantity of your system's source of supply.

State law establishes source water protection requirements (WAC 246-290-135). Your SWP program should emphasize preventing contamination and loss of supply. Prevention is far less costly than responding to problems after they occur. The most successful SWP programs are short, straightforward, and have a schedule for implementation.

How to complete this section

The instructions below will help you develop your SWP program. Document your progress in Table 1-5 and set target completion dates for remaining tasks. Many tasks require you to seek further guidance from our **Wellhead Protection Program Guidance Document (331-018).**

Note: Some steps direct you to include a copy of relevant documents so that your SWSMP contains minimum SWP program information. You can also build your entire SWP program in your SWSMP.

Step 1 **Complete a susceptibility assessment form for each groundwater source.** Most Group A water systems completed a susceptibility assessment form for each source and returned them to their **DOH regional office**. This form helps us determine how susceptible your well is to contamination. It also has information that will help you delineate and protect your water supply. Contact your **DOH regional office** if you cannot locate your completed form(s) or you need help completing one. Consider updating your susceptibility assessment form(s) if you haven't done so for more than five years.

- Send a copy of your completed susceptibility form(s) to DOH if you haven't done so.
- Include a copy in this section for easy reference.

Step 2 **Delineate (geographically define) your source water protection area and create a map.** Most Group A water systems already delineated their source water protection areas. Visit our **SWAP database**, turn on the appropriate layers, check the information for accuracy, and print the map. If your protection areas are not delineated, you can begin with a calculated fixed radius (CFR) method. See pages 20-34 of our **Wellhead Protection Program Guidance Document (331-018)**.

- Include a map that shows all sources, sanitary control areas, and wellhead protection zones in this section. Delineate the 6-month and the 1-, 5- and 10-year time-of-travel zones for wells, and watersheds for surface sources. The map should show your source water protection area in relation to other geographic features such as cities, towns, rivers, lakes, and roads.

  Tip: When you know your source water protection boundaries, consider forming a dedicated team to help your SWP program be successful. Invite your operator, board members, customers, local businesses and landowners, and agency representatives. Meet once or twice to establish priorities, outline the SWP program, assign tasks, develop a schedule, and track progress. Make a list of team members and document the priorities and decisions that your team creates.

Step 3 **Secure control of your sanitary control area or watershed control area.** All Group A water systems must maintain a sanitary control area around each groundwater source to protect it from contamination. You must have legal authority over your sanitary control area. The sanitary control area must have a radius of 100 feet for wells or 200 feet for springs. For guidance, see the publications **Sanitary Control Area Protection (331-453)** and **Covenants for public water supply protection (331-048)**.

- Attach a copy of deeds, declarative or restrictive covenants, or written agreements in this section.

Note for systems using surface water: Water systems with surface water sources must document how they control the watershed. You can accomplish this through surveillance, land ownership, easements, or written agreements. Watershed control requirements for filtered surface water systems are in WAC 246-290-135(4).

Step 4 **Conduct contaminant source inventory.** Survey your source protection area to identify past, present, and future activities that may pose a contamination threat to your source(s). You can do this by driving or walking around the area and noting areas of concern. Examples of what to look for start on page 37 of the **Wellhead Protection Program Guidance Document (331-018).** Your county or city planning department also has information about land uses and facility locations.

- Include a copy of your list of potential contaminants (inventory) in this section.

Step 5 **Notify regulatory agencies, local governments, landowners, and facility operators.** Federal, state, and local agencies make decisions about where to allow certain land uses, activities, or facilities. Landowners and facility operators of possible contaminant sources might alter their practices if they know the location of your source water protection area.

- Write letters to landowners and facility operators of possible contaminant sources to let them know their activities are in your source water protection area and to encourage them to protect your drinking water supply. See our **Wellhead Protection Program Guidance Document (331-018)** for sample letters. Focus on activities in the 6-month and 1-year time of travel zones first.

- Write letters to regulatory agencies, local emergency responders, and local governments with authority over land use decisions to inform them that activities or businesses they regulate occur within your source water protection area. Sample letters and agency contact information are in our **Wellhead Protection Program Guidance Document (331-018).** Groundwater and surface water systems can use these samples.

- Include a sample copy of your notification letters in this section.

Step 6 **Develop a contingency plan.** All Group A water systems must have a contingency plan to provide water if the source of supply becomes temporarily or permanently unavailable. Completing an emergency response plan (Section 1.6) satisfies this requirement. Be sure to address what you'll do if you need to replace your source(s) due to contamination or loss of supply. Describe your coordination with local emergency responders and include the results of your susceptibility assessment and contaminant inventory findings.

Table 1-5
Source Water Protection Program

Identify completed steps and target completion dates for remaining tasks.

Completed	Task	Completion Date
☒	**Step 1:** Complete a susceptibility assessment form for each source and submit to DOH.	
☒	**Step 2:** Create a map showing all sources, sanitary control areas, and source water protection areas. Include the 6-month, and 1-, 5-, and 10-year time of travel zones. Attach a copy.	
☒	**Step 3:** Secure control of your sanitary control area or watershed control area. Attach a copy of your legal documentation.	
☒	**Step 4:** Conduct survey to identify contaminant sources in your source water protection area and develop a contaminant inventory list. Attach a copy.	
☐	**Step 5:** Send letters to landowners and facility operators in your inventory area, regulatory agencies, local governments with land use decision authority, and emergency responders. Attach a sample copy of each letter.	
☐	**Step 6:** Develop a contingency plan to provide an alternate source of potable water as part of your emergency response plan.	
☐	**Continuous:** Update contaminant inventory list every two years and resend notification letters as needed.	Ongoing

Further action

- Create a source protection area map more precise than the simple calculated fixed radius method. For help, see pages 20-34 of the **Wellhead Protection Program Guidance Document (331-018).**

- Create a contaminant inventory map showing locations of potential contaminant sources in relation to your source water protection area. For help, see pages 35-41 of the **Wellhead Protection Program Guidance Document (331-018).**

- Join with nearby water systems, landowners, and local government and regulatory agencies to create a multi-system, watershed-wide SWP program. Designate a lead facilitator to ensure efficient meetings and follow-up.

- Identify actions to improve protection of your sanitary control area and source water protection area. For ideas, see page 46 of the Wellhead Protection Program Guidance Document **(331-018).**

For more information

- See the **Wellhead Protection Program Guidance Document (331-018).**

- See our **SWAP database** for information about potential contaminant sources in your area.

- See our **DOH Source Water Protection** website for links to other helpful information.

1.6 Emergency Response Plan

Purpose

To identify and document responses to routine and uncommon emergencies that may affect system operations, and establish procedures to notify customers.

Background

Most water systems have routine operating emergencies such as pipe breaks, pump malfunctions, and power outages. More serious, less common emergencies result from chemical spills, floods, earthquakes, windstorms, or droughts. Even these can be manageable if you are prepared and have an emergency response plan you can put into action quickly.

Each emergency has unique effects on a water system. Floods can cause widespread bacterial contamination. Earthquakes can damage sources and distribution systems. Storms can disrupt power supplies resulting in contamination due to a loss of system pressure. The common element is the threat posed to the system's ability to deliver safe and reliable drinking water.

All water systems must take reasonable security measures to protect raw water intake facilities, water treatment facilities, storage facilities, pump-houses, and distribution systems from possible damage or intruders (WAC 246-290-415).

Emergency response planning includes managers and system operators as they explore the system's vulnerabilities and establish procedures to follow in an emergency based on the system's priorities. You don't need to go it alone. Consider how you can involve community members or other groups who may be able to help you notify customers or provide other support. Consider forming partnerships with neighboring water systems and be familiar with local emergency response agencies.

How to complete this section

Table 1-6 is a template to help you create a simple emergency response plan. It has six short sections. You can modify, rearrange, or expand sections. If you've already completed an emergency response plan, attach a copy in this section.

Table 1-6
Emergency Response Plan

Section 1 – System Information
Document basic system information. This should be readily available to system personnel, local emergency responders, repair contractors, and DOH.

Basic description and location of system facilities *For example: We have two wells of 180' and 223' depth. The wells pump through a pump house and disinfection facilities into two storage reservoirs, one at the north end and one at the south end of the system.*	See attached	
Population served and number of service connections	People:	Connections:
Person(s) responsible for maintaining and implementing the emergency plan *At least two people should share this responsibility to ensure backup coverage.*	Name: Title:	Phone Number: Cell Number:

Section 2 – Chain of Command
Document lines of authority and responsibility. This will eliminate confusion and speed up emergency response time. The first step is to inform the person responsible for making key decisions. Put this person at the top of the list. Other responsibilities include:

- Notifying DOH
- Notifying system customers
- Assessing system facilities and operations in the field
- Making repairs or notifying an appropriate contractor

Name and title	Responsibilities during an emergency	Contact numbers

Section 3 – Emergency Reference List
List important parties to contact.

Emergency contact	Phone Number(s)	Emergency contact	Phone number(s)
Fire/Police/Medical		Certified operator(s)	
County emergency services		System engineer or engineering consultant	
County local health contact		Electrician	
Department of Ecology spill response		Electric utility	
Water testing laboratory		Pump service	
DOH water quality contact		Excavation contractor	
DOH regional engineer		Call before you dig	
DOH emergency after hours contact	1-877-481-4901	Equipment rental	
Other		Neighboring water system	

Section 4 – Emergency Notification
Identify how you will notify customers.

The system notifies its customers as follows: *Check all that apply.*	**How does the system provide customers with system contact information?** *Check all that apply.*
☐ Phone calls. Include phone list location: ☐ Media release ☐ Door to door ☐ Other	☐ Billing ☐ Newsletter ☐ Other

Emergency Notification (Priority Customers)
If you have priority customers or serve vulnerable populations, maintain a list of these customers so you can notify them first. You should review and update this list annually.

Does the system serve priority customers? *Check all that apply. Include names and addresses.*	
☐ Hospitals and clinics	
☐ Nursing homes	
☐ Schools	
☐ Other	

Section 5 – Response Actions for Specific Events
Identify action to take in the following events. You may want to refer to your facilities map (Section 1.3) to help determine the effects of possible events and the best response action.

	Immediate actions to take *(assess damage, contact DOH, contact repair service)*	**Who should be notified** *(DOH, customers, repair service, county)*
Power outage		
Transmission or line break		
Chlorine treatment failure		
Source pump failure		
Coliform MCL		
Severe reduction or loss of water in source		
Flood		
Earthquake		
Other:		

Section 6 –Alternative Water Supplies
Identify alternative water supplies that may be available if your supply becomes unexpectedly disrupted or contaminated. Alternative supplies can include emergency sources and emergency interties. They can also include the temporary use of bottled water or tanker trucks.

Note: You must obtain DOH approval before putting any emergency source or alternative supply of water into service. Requirements for using and maintaining emergency drinking water are in **Emergency drinking water sources (331-317)**.

Emergency sources
List available emergency sources and existing emergency interties.

Emergency source name	**WFI source number**	**Maintained in operable condition?**	**Availability** *How much water can be produced each day, how soon can it begin?*	**Is the water safe for drinking?**

Short-term alternative supplies
List bottled water suppliers or tanker trucks that may be able to deliver bulk water in your area.

	Vendor or supplier	**Phone number**	**Availability** *How much water can be delivered each day, how soon can it begin?*	**Is the water safe for drinking?**

Long-term potential alternative supplies
List any potential interties with an adjacent water system. Do not include existing interties.

Water systems located within one-quarter mile	**Feasibility of connecting?**	**Has any contact been made with this system?**

Further action

- Share this or similar information with neighboring water systems and local emergency responders. Reaching out is the first step toward forming partnerships with those who may lend assistance during an emergency.

- Remain familiar with your emergency response plan by practicing it on a regular basis.

For more information

- **Emergency Response Planning Guide for Public Drinking Water Systems (331-211)** includes instructions and templates water systems can to use to produce their own emergency response plan.

- **Truck Transportation: Emergency water supply for public use (331-063)** provides guidance for water systems that truck or receive potable water for the public during emergencies.

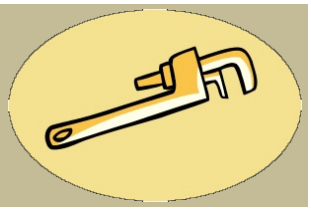
- **Emergency Disinfection of Small Systems (331-242)** explains when emergency disinfection is needed and how to do it. Tables show how much chlorine bleach to use for disinfecting wells and storage reservoirs.

1.7 Next Steps to Improve Managerial Capacity

List the follow-up action(s) you committed to take in previous sections. Include any estimated costs in the future expenses portion of your budget.

Item to address	Responsible party	Target start date	Target completion date	Estimated cost

Chapter 2: Technical



Technical capacity refers to the physical system, including source, treatment, storage and distribution plus the ability of personnel to operate the system adequately.

What is sufficient technical capacity?

Source Water Adequacy	• The source is adequate to meet current and future demands. • The source meets all applicable water quality standards and is appropriately sampled and protected. • The system is operating within water right limitations.
System Operations	The system has a certified operator who: • Understands the benefits of public health protection. • Knows the applicable drinking water standards. • Understands the system's technical and operation characteristics. • Implements the system's operation and maintenance plan successfully.
Infrastructure Adequacy	The system can reliably produce and deliver water that meets all drinking water standards because its infrastructure, from source to distribution, is in good condition and has not exceeded its useful life.

2.1 Certified Operator

Purpose

To identify the system's certified waterworks operator(s) and their responsibilities for system operations and maintenance.

Background

The operator in responsible charge is the certified operator the purveyor or owner designates to make decisions on the daily operations of a public water system, water treatment facility, or distribution system. These decisions directly affect the quality or quantity of drinking water.

Operator certification requirements for water systems are in chapter 246-292 WAC. Every community water system must have at least one certified operator. The certified operator may be a contract operator or an employee of the water system, a DOH-approved satellite management agency, or a public utility district.

It's important that the governing board and the operator understand and agree on the scope of services and the cost of providing those services.

Typical Operator Duties:

1. Ensure the system's daily operational and maintenance activities are conducted according to acceptable public health practices and water industry standards.
2. Conduct water quality monitoring, maintain adequate records, and take necessary follow-up action to comply with drinking water regulations.
3. Implement a preventive maintenance program, inspect treatment and other system components for malfunctions, and make repairs.
4. Analyze and review recording-instrument readings and laboratory tests, determine sites and causes of any malfunctions, adjust various treatment processes or other components accordingly, maintain a record of these activities.
5. Implement a cross-connection control program.
6. Determine and implement actions in emergencies. This includes following directives DOH issues to address the situation.
7. Be available 24 hours per day (voicemail, cell phone).
8. Cooperate during a special purpose investigation or sanitary survey.
9. Provide system records and reports upon request.

How to complete this section

In Table 2-1 below, identify your certified operator(s), certification level, and the date they began in the position.

Table 2-1
Certified Operator

Position	Name	Certification class and level	Employed by your system since (date)
Certified Operator (lead)	Clive Defty	Water Distribution Manager 1	
Certified Operator (assistant or backup)	Clive Defty	Water Treatment Plant Operator 2	
Cross-Connection Control Specialist	Clive Defty		

Further action

- Do the governing board and certified operator agree that it is the operator's responsibility to perform the "typical operator duties" listed in this section?
  ☒ Yes ☐ No.
  If no, modify the employment agreement or include the issue in Section 3.0 (Next Steps).

- Do the governing board and certified operator meet on a regular basis to discuss past activities, the system's current operational status, regulatory requirements, and planning for future system needs?
  ☒ Yes ☐ No.
  If no, modify the employment agreement or include the issue in Section 3.0.

- If the certified operator is unavailable during an emergency, is a back-up operator available?
  ☐ Yes ☐ No.
  If no, develop a short-term coverage plan or include the issue in Section 3.0. A good place to start is by talking with a neighboring water system.

- If the certified operator leaves, do you have a plan for obtaining a new one?
  ☐ Yes ☐ No.
  If no, develop a succession plan or include the issue in Section 3.0. A good place to start is by talking with a neighboring water system.

For more information

- See our **Waterworks Operator Certification** webpage.

2.2 Operations and Maintenance Program

Purpose

To identify the operating parameters and maintenance duties to maintain effective operations and compliance with drinking water regulations.

Background

The best way to keep your water system running effectively is to have the operational activities and schedule of preventive maintenance activities documented and easily accessible. This information is critical when personnel changes occur or when two or more people share responsibility for system operations. It is also useful for defining expectations for the system's operator and other staff.

Operations and maintenance requirements for water systems are in WAC 246-290-415. All systems must operate under a comprehensive operations and maintenance program.

How to complete this section

Follow the instructions below to document your operations and maintenance activities into Table 2-2. You can use Table 2-2 as your operations and maintenance (O&M) program. If you already have an O&M program, you can attach a copy rather than completing the form. Compare your program against the activities in Table 2-2 to ensure that your O&M program covers all aspects of system operations.

Step 1 Have the person responsible for maintenance summarize the current maintenance activities and how frequently these activities are performed.

Step 2 Indicate normal settings, positions, or readings for pump controls, electrical switches, valves, and gauges. If seasonal adjustments are needed, document the adjustments and the approximate period (or other trigger) to make them.

Step 3 Develop a list of supplies and spare parts that must be kept on-hand. Include the name and phone number of the person or vendor who provides the supplies.

Step 4 Develop a list of specialty service providers. This includes electricians, excavators, pipe fitters, welders, tank-inspectors, and well pump and control valve vendors.

Step 5 Have a technical assistance provider check this list for completeness. Your sanitary surveyor will also review the system's maintenance schedule.

Table 2-2
Operations and Maintenance Program

Section 1 – Routine Maintenance Schedule

Maintenance and operational activity	Applicable? (check box)		Responsible party	Frequency
	Yes	No		
Measure and record production from each source and any interties	☒	☐	Operator	3x per week
Recalibrate source meters	☒	☐	Operator	
Read service meters	☒	☐	Operator	Quarterly
Replace service meters	☒	☐	Operator	
Measure water level in each well (static and pumping level)	☒	☐	Board member	
Measure chlorine residual in distribution system	☒	☐	Operator	
Flush dead ends	☒	☐	Operator	
Exercise main line valves	☒	☐	Operator	
Record use of treatment chemicals (corrosion control, disinfection, iron or manganese removal)	☒	☐	Operator	
Maintain chemical feed pumping equipment	☒	☐	Operator	
Conduct leak detection in the distribution system	☒	☐	Operator	
Recalibrate water quality monitoring instruments	☒	☐	Operator	
Inspect reservoir hatches, vents, and overflow outlets for tight seals and intact screens	☒	☐	Operator	

Maintenance and operational activity	Applicable? (check box)		Responsible party	Frequency
	Yes	No		
Inspect and clean reservoir interior	☒	☐	Operator	
Inventory spare parts, chemcial supplies, and equipment.	☐	☐		
Check air-water level in hydropneumatic tank(s)	☐	☐		
Test cross-connection control devices (by a backflow assembly tester)	☐	☐		Must be completed once a year
Conduct safety training needed to comply with OSHA and WISHA standards	☐	☐		
Conduct routine and repeat coliform monitoring	☒	☐	Operator	
Review coliform monitoring plan to ensure it reflects current customer base and service area	☐	☐		
Review water system security features and processes (fencing, locks)	☒	☐	Board member	
Conduct source chemical monitoring as described in your water quality monitoring report	☒	☐	Operator	
Test all alarm functions	☐	☐		
Complete and distribute consumer confidence report	☒	☐	Board	Must be completed once a year
Others?	☐	☐		

Section 2 - Control Position for Valves, Switches, Relays, and Timers

Indicate normal settings, positions, or readings for pump controls, electrical switches, valves, or gauges. Describe any seasonal differences in pump, reservoir, and valve control settings.

Type of switch, valve or control	Normal and seasonal settings

Section 3 - Suppliers List

Develop a list of supplies you periodically order and include the supplier's name and phone number.

Type of supply, spare part, or specialty service	Name of supplier or contractor	Phone number(s)

Further action

- Have any parts of Table 2-2 caused you to think about changing your current O&M practices?
  ☐ Yes. ☐ No.
  If yes, list the issue in Section 3.0 (Next Steps).

For more information

- **Preventive Maintenance Program: Guide for small public water systems using groundwater (331-351)** provides a schedule of routine O&M tasks for small drinking water systems using groundwater.

2.3 Water Quality Monitoring Program

Purpose

To identify the type, frequency, and location of required water quality monitoring (testing).

Background

Federal drinking water regulations set water quality standards for public water systems. State rule establishes:

- Water quality standards known as the maximum contaminant levels (WAC 246-290-310).
- Water quality monitoring requirements (WAC 246-290-300).
- Follow-up monitoring requirements (WAC 246-290-320).

There are three types of monitoring:

- **Initial monitoring:** Applies to new sources and newly regulated contaminants. It is required until your system fulfills the initial monitoring requirements or receives a waiver from the initial monitoring requirements.
- **Baseline monitoring:** Is long-term routine monitoring assigned to a source. It's based on the source type, initial monitoring results, and susceptibility of the source to contamination.
- **Follow-up monitoring:** Reflects an increase in monitoring frequency from the baseline if a contaminant is detected above a trigger level or MCL.

There are three categories of samples:

1. **Samples collected from the distribution system.**
   - Coliform (routine, repeat, and investigative)
   - Chlorine residual (for systems that add chlorine)
   - Disinfection by-products (for systems that add a disinfectant)
   - Fluoride (for systems that add fluoride)
   - Lead and copper

2. **Samples collected at entry to the distribution system after all forms of treatment and prior to distribution** (also called chemical source samples).
   - Complete inorganic chemicals (the full suite of inorganic chemicals)
   - Individual inorganic chemicals (nitrate, nitrite, arsenic, iron, manganese)
   - Volatile organic chemicals (VOCs)
   - Synthetic organic chemicals (SOCs, such as pesticides, herbicides and fumigants)
   - Radionuclides

3. **Samples collected at the source prior to treatment (also called raw source samples).**
   - Coliform (raw source samples triggered by an unsatisfactory routine sample as required under the Groundwater Rule)

Each year DOH sends a Water Quality Monitoring Report (WQMR) to every Group A community and nontransient noncommunity (NTNC) water system. The WQMR identifies distribution monitoring and chemical source monitoring requirements for the calendar year and the current three-year compliance period. Water systems supplied solely by an intertie with another system do not receive a WQMR because they do not have their own source. They are not required to do chemical source monitoring, but they must do distribution system monitoring. Distribution monitoring includes coliform, disinfection by-products, and lead and copper monitoring.

The WQMR and Water Facilities Inventory (WFI) provide a reminder of your water quality sampling requirements based on your system's type, its source(s), and monitoring history. If DOH grants a waiver for a source or monitoring requirements change because of a detection above a trigger value (moving from baseline monitoring to follow-up), we will notify the system contact and update the WQMR for the next year.

You can use your WQMR and WFI to help create an annual sampling schedule as part of a water quality monitoring program for your system. If you are unsure of your annual monitoring requirements, call the water quality staff at your **DOH regional office**.

Tip: Use your WQMR to help you determine future sampling requirements that extend beyond the current year so that you can build them into the future expenses portion of your budget.

For each test conducted, the laboratory report should include:

- Results of the analysis for each of the required compounds
- A list of trigger levels and MCLs for each compound analyzed

If a test result exceeds the trigger level, confirmation or increased follow-up monitoring may be required. If a test result exceeds the MCL, you must:

- Contact your **DOH regional office**. We may advise you collect a confirmation sample.
- Satisfy public notification requirements
- Start a follow-up (increased) monitoring program

Note: Keep a copy of all laboratory sample results. **Records Retention Reminder (331-431)** explains how long public water system owners and operators must keep records at their utility.

How to complete this section

Follow the instructions below to complete Table 2-3. This section provides general instructions and other resources to help you develop a water quality monitoring program.

Step 1 Attach a copy of your WQMR in this section. The WQMR contains the baseline testing frequency for each contaminant for this calendar year. Include any subsequent DOH correspondence on increased monitoring or follow-up monitoring requirements.

Step 2 Transfer the testing dates into your O&M program (Section 2.2) and into specific water quality monitoring programs as you develop them. Refer to the documents below for specific guidance on how to collect samples, pick site locations, and develop monitoring plans.

- **Preparation of a Coliform Monitoring Plan for Group A Public Water Systems (331-036)** explains how to create and submit a coliform monitoring plan.
- **Disinfectants and Disinfection Byproduct Stage 1 Rule (331-254)** discusses disinfectants, byproducts, and monitoring plans.
- **Lead and Copper Monitoring (331-111)** discusses distribution system monitoring requirements, action levels for lead and copper, selecting sample sites, and sample collection procedures.

Step 3 Transfer the testing costs into your budget (Section 3.3)

Step 4 Attach a copy of your coliform monitoring plan and site-sampling map in this section.

Step 5: Revise your testing schedule if additional follow-up testing is required, or you receive a waiver for a specific monitoring requirement.

Table 2-3
Water Quality Monitoring Program

Completed	Task	Completion Date
☒	**Step 1:** Attach a copy of your WQMR.	**2013**
☐	**Step 2:** Transfer testing dates into your O&M program and into your specific water quality monitoring programs.	
☐	**Step 3:** Transfer testing costs into your budget.	
☐	**Step 4:** Attach a copy of your coliform monitoring plan and site-sampling map.	
☐	**Step 5:** Revise testing schedule if monitoring requirements change.	Ongoing

Further action

- Do you keep copies of sampling results for at least 10 years?
  ☐ Yes. ☐ No.
  If no, begin doing so or list the issue in Section 3.0 (Next Steps).

For more information

- See drinking water accredited laboratories and the containments they can analyze at http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html

2.4 Component Inventory and Assessment

Purpose

To create an inventory of system components (infrastructure), separate them into short-lived and long-lived assets, and determine each component's remaining useful life.

Background

The inventory is a list of your system's components. The assessment is an evaluation of each component to determine if you need to replace it in the next six years. Take the time to include the estimated cost to replace each component so you can include the outcome of this exercise in your financial planning activities (Chapter 3).

You will need to submit a project report and construction documents if you determine that your system needs to install or construct a facility involving source, storage, treatment, or distribution, (WAC 246-290-110 and -120). A professional engineer must prepare these documents, and they **may** trigger development of a water system plan (WAC 246-290-100).

Note: Beginning in 2012, amendments to these statutes include new requirements for a water system that is a homeowners association or a condominium association (RCW 64.34 or RCW 64.38). The legislation requires homeowner and condominium associations to conduct a reserve study (with input from a reserve study professional) on their association's assets unless they meet certain conditions. **Your water system is an asset of your association.** You can use this section of your SWMSP to help you meet this new requirement.

How to complete this section

Follow the instructions below to complete Forms 2.4A (short-lived assets) and 2.4B (long-lived assets). Here are some things to consider before you begin:

- Just because a component is approaching (or has passed) the life expectancy listed, does not mean you will have to replace it in the near future. Consult with an experienced professional if you believe you can continue to operate an existing component that has reached or passed its expected useful life.

- A relatively new component might be causing trouble and may need replacement even if it is not near its life expectancy. Over time, continued maintenance and emergency repair often costs more than replacement.

- Keep current design documentation for your infrastructure, such as pump specifications, treatment designs, and as-built drawings together in one section of your SWSMP.

Step 1 **Component information (short-lived assets).** Take an inventory of each short-lived system component. These are your system assets with a service life of about **six years or less**. In the space provided in Table 2-4A, list each component's size, length, or capacity, the number of such components, the year installed or its current age, and the estimated cost to replace.

Step 2 **Component information (long-lived assets).** Take an inventory of each long-lived system component. These are your system assets with a service life of about **10 years or more**. In the space provided in Table 2-4B, list each component's size, length or capacity, the number of such components, the year installed or its current age, and the estimated cost to replace.

If you do not know the specifics of your system (for example, size or capacity of storage tank), call your **DOH regional office** to arrange a time to review your system's files.

Step 2 **Decide which components to replace.** Compare each component's age to the estimated life expectancy shown in the table. Decide which (if any) should be replaced in the next six years. Check YES or NO for each component. If you check YES, write down the year that you expect to make the improvement in the space provided.

Step 3 **Financial planning (short-lived assets).** Transfer each component in Table 2-4A that you need to replace in the next six years into Table 3-1 in Chapter 3. This will create a record of future replacement projects for short-lived assets that you will draw from when you create a budget.

Step 4 **Financial planning (long-lived assets).** Transfer each component in Table 2-4B that you need to replace in the next six years into Table 3-2 in Chapter 3. This will create a record of future replacement projects for long-lived assets that you will draw from when you create a budget.

Table 2-4A
Short-Lived Asset Component Inventory and Assessment (service life is 6 years or less)

Short-Lived Asset Component	Size, Length, Diameter, and/or Capacity Where necessary, list each individual component separately	Year Constructed or Installed	Estimated Life Expectancy	Current Age	Estimated Cost to Replace	Replace in Next 6 Years?
Hypo-Chlorination System			3-5 Years			☐ No ☐ Yes If Yes, Year
UV Light			1 Year			☐ No ☐ Yes If Yes, Year
Major Tools			5-9 Years			☐ No ☐ Yes If Yes, Year
Software (billing, SCADA, cross-connection control)			5-9 Years			☐ No ☐ Yes If Yes, Year
Safety Equipment			5-9 Years			☐ No ☐ Yes If Yes, Year
Filters and Filter Media			5-9 Years			☐ No ☐ Yes If Yes, Year
Pressure Tanks (bladder)			6-9 Years			☐ No ☐ Yes If Yes, Year
Building Heat and Cooling			5-9 Years			☐ No ☐ Yes If Yes, Year
Instrument Switches and Gauges			5-9 years			☐ No ☐ Yes If Yes, Year
Other			years			☐ No ☐ Yes If Yes, Year

Table 2-4B
Long-Lived Asset Component Inventory and Assessment (service life is longer than 10 years)

Long-Lived Asset Component	Size, Length, Diameter, and/or Capacity Where necessary, list each individual component separately	Year Constructed or Installed	Estimated Life Expectancy	Current Age	Estimated Cost to Replace	Replace in Next 6 Years?
EXAMPLE Well	Well #1 8-inch diameter and 200 feet deep	Drilled 1924	50-100 years	87 years		☐ No ☒ Yes (Well #1) If Yes, Year 2014
	Well #2 12-inch diameter and 145 feet deep	Drilled 1986		25 years		
EXAMPLE Submersible Well Pump	Well #1 10 hp	Installed 1996	10-15 years	15 years		☒ No ☐ Yes If Yes, Year ____
	Well #2 25 hp	Installed 2006		5 years		
Well			50-100 years			☐ No ☐ Yes If Yes, Year
Submersible Well Pump			10-15 years			☐ No ☐ Yes If Yes, Year
Turbine Well Pump			25-50 years			☐ No ☐ Yes If Yes, Year
Source Meter			15-30 years			☐ No ☐ Yes If Yes, Year
Well and Pump House			25-100 years			☐ No ☐ Yes If Yes, Year
Reservoirs			50-100 years			☐ No ☐ Yes If Yes, Year
Altitude, Pressure Reducing, Pump Control, Surge Anticipation Valves			20 years			☐ No ☐ Yes If Yes, Year

Long-Lived Asset Component	Size, Length, Diameter, and/or Capacity Where necessary, list each individual component separately	Year Constructed or Installed	Estimated Life Expectancy	Current Age	Estimated Cost to Replace	Replace in Next 6 Years?
Pressure Tanks (hydropneumatic)			50 years			☐ No ☐ Yes If Yes, Year
Booster Pumps			10-20 years			☐ No ☐ Yes If Yes, Year
Distribution Pipe and all in-line valves and valve boxes			40-100 years			☐ No ☐ Yes If Yes, Year
Hydrants and Blow-Offs			50 years			☐ No ☐ Yes If Yes, Year
Back-up Power Generator			15-30 years			☐ No ☐ Yes If Yes, Year
Service Meters			15 years			☐ No ☐ Yes If Yes, Year
Vehicle			20 years			☐ No ☐ Yes If Yes, Year
Electrical Service/Breaker			20 years			☐ No ☐ Yes If Yes, Year
Motor Starter/Control Relays			10-20 years			☐ No ☐ Yes If Yes, Year
Telemetry or SCADA			20 years			☐ No ☐ Yes If Yes, Year
Fencing			20-40 years			☐ No ☐ Yes If Yes, Year
Other			years			☐ No ☐ Yes If Yes, Year

2.5 Water Rights Self-Assessment

Purpose

To document that the system can legally withdraw and use water consistent with current and projected water needs.

Background

Water can only be put to use after a person has a water right permit from Ecology (state water code, 1917 for surface water and 1945 for groundwater). All public water systems using surface water or groundwater with wells pumping 5,000 or more gallons per day, or irrigating one-half or more acres must have a water right. After water is put to use according to the conditions of a permit, Ecology will issue a water right certificate.

How to complete this section

Complete each of the water right self-assessment forms provided in this section. Table 2-5A is the self-assessment form for your water right existing status. Table 2-5B is the self-assessment form for your six-year forecast.

Below is a description of each field or column and general instructions. You can find the requested information on your water right permit or certificate

Note: If you have a claim to a water right that existed before the state water code, you can follow the same instructions with a few exceptions. **Instructions for Completing the Water Rights Self Assessment Forms**, available on our website, provides complete instructions, including how to describe your water right claim.

Water Right Permit and Certificate Inventory

1. **Permit or certificate number**: This is the number Ecology assigns upon receipt of a water right permit application. It's on the very top of the permit or certificate. (This may differ on old water rights.)

2. **Name of right holder**: This is the person who obtained the original water right permit or certificate. It may differ from the name of the current right holder. Use the name listed on the permit or certificate even if it may no longer be current.

3. **Priority date**: This is the date listed at the top of the permit or certificate (next to the permit or certificate number).

4. **Source name and number**: Many water right permits and certificates were issued for water from more than one source. If any permits or certificates are for multiple sources, identify the individual sources used (well#1, well #2) as it appears on water right documents. Use a separate line for each source. Do not use DOH-assigned source numbers.

5. **Maximum instantaneous flow rate (Qi):** This is the amount of water that can be taken from the source during a peak operation period. For surface water, the flow rate is expressed in cubic feet per second (cfs). For groundwater, the flow rate is expressed in gallons per minute (gpm). One cfs equals 448.8 gpm. Indicate the units of measurement you are using for each source. You must note any situations where the allowed flow rate will be limited.

6. **Maximum annual quantity (Qa):** This is the amount of water that can be taken from the source on an annual basis. It is expressed in terms of acre-feet. An acre-foot is the amount of water it takes to submerge one acre of land to a depth of one foot. One acre-foot equals 43,560 cubic feet or 325,851 gallons of water.

7. **Primary or supplemental**: Use this column to indicate whether a particular source is for primary or supplemental use. This information is usually in the "quantity, type of use, period of use" section on permits and certificates. If not, you'll need to understand how your system operates to explain how each source is used in conjunction with others.

8. **Water obtained through interties**: You must account for water obtained through interties (where a separate purveyor holds the water rights) for non-emergency supply purposes. This is to ensure consideration of all supply sources when evaluating water right adequacy. Identify the maximum volume of water allowed for purchase through such interties. Purveyors must account for any limiting conditions or temporary agreements that affect the long-term use of the intertie when evaluating water right adequacy. Finally, purveyors who receive water through an intertie must ensure that the underlying water rights are adequate for water purchases through the intertie. This includes ensuring that place of use descriptions authorize the distribution of water through the intertie.

9. **Other information**: Include any other supporting information or materials related to your water right as necessary. This may include supporting written materials needed to describe any water right limiting parameters that affect your proposed project.

10. **Water right totals**: Identify the total maximum instantaneous and annual withdrawal rates specified on system water rights. Make sure you fully understand how your rights relate to one another. In many cases supplemental water rights are not issued in addition to existing rights (not all such rights are additive). Contact your **Ecology regional office** if you aren't sure how to quantify your water right permits and certificates.

Table 2-5A
Water Rights Self Assessment – Existing Status

Permit certificate or claim number	Name on document	Priority Date (List oldest first)	Source Name and Number	Any portion supplemental? (If yes, explain in footnote)	Existing Water rights		Existing consumption		Current water right status (Excess/Deficiency)	
					Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
Permits/ Certificates 1.										
2.										
3.										
4.										
Claims 1.										
2.										
3.										
4.										
TOTAL										

Intertie name or Identifier	Name of purveyor Providing water	Existing limits on intertie use		Existing consumption through intertie		Current intertie supply status (Excess/Deficiency)	
		Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
1.							
2.							
3.							
4.							
TOTAL							

Pending water right application (New/Change)	Name on application	Date submitted	Any portion supplemental? (If yes, explain in footnote)	Pending water rights	
				Maximum Instantaneous Flow Rate (Qi) Requested	Maximum Annual Volume (Qa) Requested
1.					
2.					
3.					
4.					

Table 2-5B
Water Rights Self Assessment – 6 Year Forecast

Permit certificate or claim #	**Name on document**	**Priority Date** (List oldest first)	**Source Name or Number**	**Any portion supplemental?** (If yes, explain in footnote)	**Existing Water rights**		**Forecasted water use from sources** (6-year Demand)		**Forecasted water right status** (Excess/Deficiency)	
					Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
Permits/ Certificates 1.										
2.										
3.										
4.										
Claims 1.										
2.										
3.										
4.										
TOTAL										

Intertie name/ Identifier	**Name of purveyor Providing water**	**Existing limits on intertie use**		**Forecasted consumption through intertie**		**Forecasted intertie supply status** (Excess/Deficiency)	
		Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)	Maximum Instantaneous Flow Rate (Qi)	Maximum Annual Volume (Qa)
1.							
2.							
3.							
4.							
TOTAL							

Pending water right application (New/Change)	**Name on application**	**Date submitted**	**Any portion supplemental?** (If yes, explain in footnote)	**Pending water rights**	
				Maximum Instantaneous Flow Rate (Qi) Requested	Maximum Annual Volume (Qa) Requested
1.					
2.					
3.					

2.6 Water Production

Purpose

To document how much water the system's sources produce.

Background

A record of source water pumped can tell you if your system is functioning properly. It will also help you examine use trends, support water use efficiency and preventive maintenance programs, and determine whether your system's water usage is within allowed water right limits. Much of the water resource analysis in the rest of this guidebook depends on knowing the total amount of water pumped from each of your sources.

Water systems must record total annual water produced by each source (WAC 246-290-496). While this information can be estimated through run-hour meters or power records, only a totalizing source meter on each source is sufficiently accurate.

Note: All water systems must have a totalizing source meter on each source. If you do not have a source meter installed on each source, include your plan and schedule to install one in Section 3.0 (Next Steps) and in Section 3.1 (Short-lived Asset Replacement and Other Planned Improvements)

How to complete this section

Table 2-6 is an Excel spreadsheet you can save to your computer and use to help you calculate the amount of water your sources are producing. You will continue to use Table 2-6 to calculate your customer's current consumption (Section 2.7) and to automatically obtain your distribution system leakage based on your input (Section 2.9).

You must provide your source production values in this section. If you don't use the Excel spreadsheet, you can print the table and use it as a model.

WATER PRODUCED

Follow the instructions below to complete the top of Table 2-6. This section of the table is titled ***"PRODUCTION: Total Water Produced Per Source."***

Step 1 Click on **Table 2-6** to open the Excel spreadsheet as a separate document.

Step 2 Identify the year you are reporting data for in the top right corner of the table under "***Reporting Year."*** Try to use the most recent full year of water production data. The 12-month reporting period of production data does not have to coincide with the calendar year, but you must use the same 12-month period when describing your consumption data (Section 2.7).

Step 3 Convert your raw source production data into gallons. We provided conversion tables below.

Step 4 Calculate the total gallons produced at each source for each month. Insert the values in the line for each source under ***"Total Volume Pumped-Source _____."*** If you have more than three sources, combine all additional source production values into the fourth line. For instance, *Total Volume Pumped-Combined Sources 4, 5, and 6*.

Step 5 If you purchased water from another water system, insert the total gallons purchased in each month under "***Total Volume Purchased."*** The table will calculate the total water produced and total water purchased for each month and the year.

Unmetered source data. If you do not have a meter installed on each source, describe how you estimated source production values in the table below.

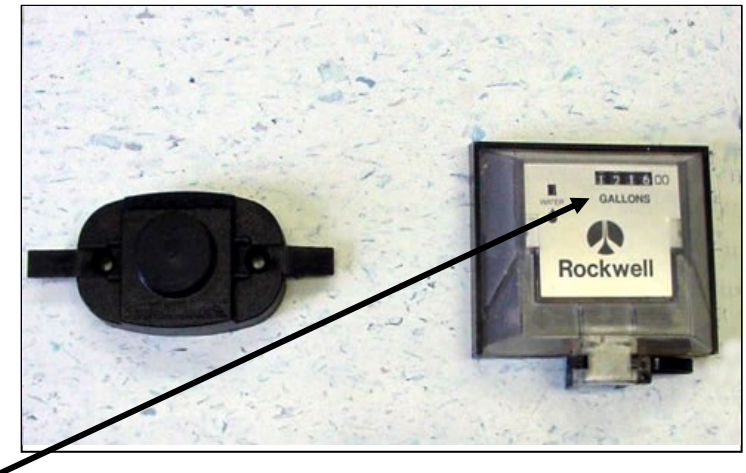
Source number	How did you estimate total production values?

Conversion Table

Convert from	To	By
Cubic feet of water	Gallons of water	Multiplying the number of cubic feet by 7.485 to arrive at gallons
Acre-ft of water	Gallons of water	Multiplying the number of acre-ft by 325,851 to arrive at gallons
Gallons of water	Acre-ft of water	Divide the number of gallons by 325,851 to arrive at acre-ft

Hints on reading your meter:

This fixed zero indicates that this meter counts 10 gallons at a time. The total volume recorded on this meter is 1,401,230 gallons.



The two fixed zeros at the end of the counter indicate that this meter counts 100 gallons at a time. The total volume recorded on this meter is 121,600 gallons.

Table 2-6
Water Production, Consumption, and Distribution Leakage (DSL)

Water Production, Consumption and Distribution System Leakage (DSL) -2012													
Production: Total Water Produced Per Source:													
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Total Volume Pumped Well #1	498,392	390,232	509,837	437,505	606,852	564,815	894,384	893,112	945,472	698,034	472,661	484,704	7,396,000
Total Volume Pumped Well #2	0	0	0	0	0	0	0	450,072	0	0	0	0	450,072
Total Volume Purchased Intertie	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Produced	**498,392**	**390,232**	**509,837**	**437,505**	**606,852**	**564,815**	**894,384**	**1,343,184**	**945,472**	**698,034**	**472,661**	**484,704**	**7,846,071**
Quarterly Total Produced			**1,398,461**			**1,609,172**			**3,183,039**			**1,655,399**	**7,846,071**
Authorized Consumption (Metered):													
Single Family Residential			881,159			1,317,138			2,734,613			1,158,502	6,091,413
Backwash			166,100			169,700			179,700			225,000	740,500
Other													
Total Metered:			**1,047,259**			**1,486,838**			**2,914,313**			**1,383,502**	**6,831,913**
Authorized Consumption (Unmetered, estimated):													
Tank cleaning			150,000										150,000
Total Unmetered			**150,000**										**150,000**
Total Authorized Consumption			**1,197,259**			**1,486,838**			**2,914,313**				**6,981,913**
Authorized Consumption (Unmetered, estimated):													
Total Volume for DSL													**864,158**
Percent DSL													**11.01%**

2.7 Current Water Consumption

Purpose

To document the amount of water the system's customers currently use.

Background

Knowing how much water your current customers use on an annual basis will help you to ensure that your water supplies and distribution facilities can meet the demand. All water systems must include consumption data as part of their SWSMP.

All municipal water suppliers must have service meters installed on all existing direct connections by January 22, 2017 (WAC 246-290-496). Effective January 22, 2007, service meters are required on all **new** service connections upon activation. After your system is fully metered, you must read the service meters at least once a year (preferably more often) to calculate your distribution system leakage (DSL).

Tip: If your system is unmetered and it is approved for more connections, consider listing the need to establish standards for meter installation as a next step (Section 3).

How to complete this section

Continue using Table 2-6 to calculate the total amount of water consumed, called "authorized consumption." Table 2-6 has a section for metered water used by each customer class and a section for estimated annual amount of unmetered water used by customers without service meters or used for other authorized purposes. These uses are considered "authorized consumption."

METERED WATER

Follow the instructions below to complete the middle portion of the Table 2-6 called, ***"AUTHORIZED CONSUMPTION: Metered Water."*** This section will help you calculate how much water your customers are consuming.

Note: You must use the same 12-month period for reporting consumption data in this section as you used for reporting production data in Section 2.6.

Step 1 Click on **Table 2-6** to open the Excel spreadsheet as a separate document.

Step 2 If your customers aren't metered, or you don't read the meters at least once a year, go to the UNMETERED WATER instructions below. **Municipal water suppliers must have service meters on all connections by January 22, 2017.** If you do not have service meters, include this issue as a planned improvement in Section 3.1.

Step 4 Determine total consumption by customer class (residential and non-residential) for each billing (or service meter-reading) period, and convert the consumption data into gallons. If you need to convert cubic feet into gallons, see the conversion tables in Section 2.6.

Step 5 Insert total gallons consumed in each billing (or service meter reading) period by each customer class. If you read service meters only twice per year, record the consumption totals in the actual two months that service meters are actually read**.**

UNMETERED WATER

Follow the instructions below to calculate the next section in the Table 2-6 called, ***"AUTHORIZED CONSUMPTION: Unmetered Water (Estimates)."*** This will help you calculate the amount of authorized, unmetered consumption. This includes purposes such as street cleaning, flushing lines, and providing water to unmetered customers.

You must provide your authorized consumption data (metered and unmetered uses) in this section. If you don't use the Excel spreadsheet, you can print the table and use it as a model.

Step 1 Use data from the same period used for water production in Section 2.6.

Step 2 Estimate the total authorized consumption in gallons for each category for each billing (or service meter reading) period.

Step 3 Insert the total estimated gallons of authorized consumption for each category of use listed in this section of the form. If your customers are primarily single-family homes, you can insert an amount equal to the "***total water produced and purchased"*** for each month in the line for "***unmetered customers."*** You should not attempt to calculate distribution system leakage without metered consumption data.

Step 4 Save the Excel spreadsheet to your computer.

Step 5 Note the value in the lower right corner of Table 2-6. This is your distribution system leakage (DSL) total volume, and your DSL percentage of all water produced and purchased.

2.8 Future Water Consumption

Purpose

To prepare a water demand forecast based on current water usage.

Background

Knowing how much water your customer base will use in the future will help you ensure that your supply and distribution facilities can meet the demand. Forecasting water consumption by current and possible future customers will also tell you if you will need to acquire additional water rights (Section 2.5), or promote increased water efficiency (Section 2.9), or if you will need new system facilities to meet the demand.

The water demand forecast must be based on actual water use data. You cannot forecast lower demand because you intend to implement a water use efficiency program. After you implement an efficiency program, and you have several years of water savings data, you can update this section to reflect new (actual) water use data.

If your service area includes vacant lots and you don't know if these lots can be subdivided, ask your local planning department about land use plans in effect for your service area.

Note: If the number of properties in your service area exceeds the system's number of approved connections and you plan to serve these properties, contact your **DOH regional office**. You will need to prepare a capacity assessment of your existing facilities or prepare a water system plan. A professional engineer must certify each of these documents and you must submit them for DOH review and approval.

How to complete this section

Complete Table 2-8 to compute your current and forecasted average daily consumptive demand (ADD) and maximum daily consumptive demand (MDD). If your system serves commercial, industrial, or municipal customers, you will need to separate that use data from single-family home use data.

Table 2-8
Future Water Consumption

Line Number	Type of Information	Value
1	Record the number of full-time single-family homes you currently serve.	163 Homes
2	Summarize and record the volume of water (in gallons) all full-time single-family homes consumed in the past year. If you do not record service meter information and your customers are primarily single-family homes, you can estimate their consumptive use by dividing the total water produced and purchased (See Table 2-6) by the number of connections, and insert that value in Line 3 below. Also, insert "0" in line 7 below.	6831913 Gallons per year
3	Determine the average annual consumption per full-time single family home by dividing the value in Line 2 by the value in Line 1.	41913 Gallons per house/per year
4	Determine the average daily demand (ADD) per existing single family home by dividing the value in line 3 by 365.	115 ADD per single family home
5	Determine the number of <u>new</u> single-family homes you expect to serve in the future. Count the number of vacant lots in your service area that you expect to serve in the future. Do not count existing homes. Consult with your local land-use planning agency to find out whether the vacant lots can be subdivided if you do not know.	31 Homes
6	Calculate the <u>additional</u> single-family residential annual consumption by multiplying the value in line 3 by the value in line 5.	1299321 Gallons per year
7	Summarize and record the volume of water (in gallons) consumed by all existing multi-family, commercial, industrial, and municipal customers.	Gallons per year
8	Forecast the additional annual consumption you expect to serve in the future from multi-family, commercial, industrial, and municipal customers. Do not include existing demands. Consult local land use plans for your area to see if these types of future uses are planned if you do not know.	Gallons per year
9	Summarize the total forecasted <u>additional</u> annual consumption by adding the values in Lines 6 + 8 together.	1299321Gallons per year
10	Calculate the total forecasted annual consumption by adding together existing uses (Line 2 and Line 7), existing DSL (see Table 2-6), and your forecasted additional annual consumption (Line 9): Line 2 + Line 7 + DSL volume taken from Table 2-6 + Line 9	9145392 Gallons per year
11	Is your existing water right sufficient for the forecasted annual consumption? (Refer to the value in Line 10 and remember: an acre-foot is equal to 325,851 gallons).	☒ Yes or ☐ No

Line Number	Type of Information	Value
12	Calculate the forecasted average daily consumption by dividing the value from Line 10 by 365.	25000 Gallons per day
13	Forecast the maximum daily consumption by multiplying the value in Line 12 by two.	50000 Gallons per day
14	Convert the maximum daily consumption from Line 13 to a continuous flow rate in gpm: divide the value in Line 13 by 1,440. This is the minimum flow rate (gpm) needed from all your sources to meet your forecasted maximum daily consumptive demand.	35 Gallons per minute
15	Is your existing water right sufficient for the forecasted maximum daily consumption flow rate calculated in Line 14? (Compare the instantaneous flow allowed in your water right with the value in Line 14).	☒ Yes or ☐ No

Further action

- Check lines 10 and 14 against your water right annual volume and instantaneous withdrawal limits. Is it within allowed limits?

  ☒ Yes ☐ No ☐ Unsure.

  If no or unsure, include this issue in Section 3.0 (Next Steps) and contact the Department of Ecology. You can also contact your DOH regional engineer to explore ways to reduce your average daily and maximum daily consumptive demand.

- If your sources cannot produce the forecasted maximum daily consumption (Line 14), include this issue in Section 3.0 (Next Steps) and begin planning to increase your source capacity. If this is the case, contact your **DOH regional office**. To increase source capacity, you must submit additional planning or engineering documents.

2.9 Water Use Efficiency Program

Purpose

To develop the system's water use efficiency program to help customers and the system use water most efficiently.

Background

Using water efficiently can help your system meet future demand, operate successfully within financial, managerial, and technical constraints, and continue to deliver safe and reliable drinking water to your customers. Developing a water use efficiency (WUE) program is the foundation for using water wisely. A WUE program is a plan you develop and follow to increase water supply and water demand efficiency.

A WUE program includes both supply side (water system) efficiencies and demand side (customer use) efficiencies. The intent is to minimize water withdrawals and water use by implementing water saving activities and adopting policies, resolutions, ordinances, or bylaws to support your efficiency program.

All water systems must include a WUE program as part of their planning document. The specific WUE program requirements for municipal water suppliers are in WAC 246-290-810. **If your system is a municipal water supplier, many of the activities summarized below are part of your annual WUE reporting requirements.**

Note: Most Group A community water systems are municipal water suppliers. A municipal water supplier is a community water system that serves 15 or more residential connections or a noncommunity water system that provides a "residential use" of water to a nonresidential population of 25 or more people for at least 60 days a year.

How to complete this section

Follow the instructions below to develop your WUE program and to document it in your SWSMP. Use Table 2-9 to track your progress and identify target completion dates for remaining tasks.

Our **Water Use Efficiency Guidebook (331-375)** provides guidance and ideas to help you develop and implement a WUE program. Appendix S of the guidebook is an example of a completed WUE program.

Note: Some steps require you to include a short description of your activities or a copy of relevant documents so that your SWSMP contains minimum WUE program information. You can also build your entire WUE program in your SWSMP.

Step 1: Describe your prior water conservation program. If you're already taking steps to use water more efficiently, your WUE program should enhance your efforts.

- Include a short discussion of your prior program and its effectiveness.

Educate customers on need for conservation

Step 2: Describe your source of water supply. You must consider the characteristics of your water supply source when establishing a water savings goal as part of your WUE program. This information will help give context to your customers and the public about your WUE program and your water savings goal. You can refer to your DOH source assessment form for basic source information. See Appendix C of the WUE Guidebook for more ideas to consider when describing your water supply characteristics.

- Briefly describe your source. Include at least the following:

  1. Source description. *(For example, do you use groundwater or surface water or both?)*

  Groundwater

  2. Name and location of the source from which water is used. *(For example, what body of water or watershed does your source draw from?)*

  Useless Bay/Lone Lake

Step 3: Adopt a WUE goal that supports water demand efficiency. Your system's governing body must establish at least one quantifiable water savings goal to enhance efficient water use by customers (demand side). You must establish your goal in a public forum and provide at least two weeks advance notice to your customers and the public. You can use regularly scheduled board or other meetings to establish your WUE goal as long as the advance notice indicated that the WUE goal is part of the agenda. You must re-establish your goal using this same process at least every six years. Chapter 7 of the WUE Guidebook explains how to set your goals.

- Identify your WUE goal(s).

See attachement

- Attach a copy of the official adoption document in this section.

- Attach a copy of the public notice for the goal-setting meeting, the agenda, and any meeting minutes in this section.

Tip: You can post notice of your WUE goal-setting meeting on your WUE webpage to meet the public notice requirement. See our WUE webpage for the link to take you through the process at http://www.doh.wa.gov/ehp/dw/Programs/wue.htm

Step 4: Select WUE measures that support your goal and evaluate them for cost-effectiveness. You must evaluate a minimum number of measures to help your system achieve the proposed goal. Research the types of measures that would be a "good-fit" for your customers and your source of supply and evaluate whether implementing the measure would be cost-effective. Sections 5.6 and 5.7 of the WUE Guidebook explain how to evaluate measures and what qualifies as a measure. See Appendix B for examples of measures.

If your system serves fewer than 500 connections, you must evaluate at least one measure for cost-effectiveness. If your system has 500 to 999 connections, you must evaluate at least four measures.

- Identify the measure(s) you decided to evaluate.

Rate structure Customer education

- Briefly describe the evaluation results for each measure.

Very cost effective

Note: If you decide to implement a measure (Step 5), you don't have to evaluate it for cost-effectiveness. Some small systems find that evaluating selected measure(s) for cost-effectiveness is more difficult than simply deciding to implement them.

Step 5: Decide which WUE measures to <u>implement</u>. After you evaluate the measures you selected, decide the ones you will implement to help achieve the water savings goal. Identify when you will implement each measure and how your system will fund measures having an associated cost.

- List the WUE measures you will implement. Include an implementation schedule and associated costs.

Rate structure, customer education

- Make sure to carry the implementation costs over to the future expenses portion of your budget (Section 3.3).

Step 6: Educate your customers on using water efficiently. You must describe how you provide general education to your customers on the importance of using water efficiently in your WUE Program. If you provide customer education more than once a year, you can count it as one of your required measures. See Section 5.7 and Appendix J of the WUE Guidebook for water conservation tips to share with your customers.

- Briefly describe your customer education material and how often you provide it.

Continuous through web site and annual meeting

Step 7: Estimate projected water savings from the selected WUE measures. Every measure you choose to implement should result in water savings. Your measures will establish your WUE program and may affect your future water demand. Chapter 4 of the WUE Guidebook explains how to predict water savings based on different WUE programs.

- Identify the predicted amount of water savings for each measure you will implement.

5% over three years

Step 8: Decide how to evaluate the effectiveness of your WUE program. If you don't achieve your goal, you must adjust your WUE program by trying different measures or changing your goal. Remember that you must establish WUE goals through a public process. WUE programs can change for many reasons. Things such as drought, budget constraints, and demographic changes may cause shifts in water use patterns. Plan to adapt and amend your WUE program to keep it economical, effective and positioned to meet your goal.

- Briefly describe how you will evaluate the effectiveness of your WUE program.

Measure consumption

Step 9: Determine distribution system leakage. After all your customers have service meters, your WUE program must include the system's distribution system leakage (DSL). Refer back to Table 2-6 in Section 2.6 (Water Production, Consumption, and DSL). If you completed the table using Excel, your system's DSL for the same year was automatically calculated in the bottom right corner. If you did not use the Excel feature, take the data you provided in Sections 2.6 and 2.7 and refer to Chapter 6 of the WUE Guidebook to determine your DSL.

Note: You can also refer to your most recent WUE annual report.

- Identify your system's DSL. Use data from the same year that you used to calculate water production and consumption totals in Section 2.6.

2012 11.1%

- If you don't have customer service meters, you can't accurately calculate your system's DSL. If this is the case, discuss your progress toward installing service meters below. **Municipal water suppliers must have service meters installed on all direct connections by January 22, 2017.**

  Notes:

  - Compliance with the 10 percent leakage standard is based on your rolling 3-year average after you submit your Annual WUE Report to DOH. If your rolling 3-year average DSL exceeds 10 percent, your WUE Program must include a water-loss control action plan. See Chapter 6.5 of the WUE Guidebook for information about the possible allowance of up to 20 percent DSL for systems with fewer than 500 connections.

  - When you have six years of DSL data (as reported to DOH in your annual WUE report), you will need to include DSL for the past six years in your WUE Program.

Step 10: Evaluate rate structures that encourage water demand efficiency. You must evaluate the feasibility of adopting a rate structure that encourages water demand efficiency. The evaluation should describe the pros and cons of implementing a conservation rate structure if you don't already have one. A conservation rate structure is an "inclining block" or a "seasonal rate" structure. An inclining block rate is a higher charge per unit of water with higher use. A seasonal rate is a higher charge per unit of water during your peak usage season. Section 5.4 of the WUE Guidebook explains what to consider in your evaluation and what to include as part of your WUE Program.

- Describe the evaluation results below. Include your current rate structure.

2012 rates

Cubic feet	Rate
Base charge	$ 75.00
<3500	$ -
3501-7,000	$ 0.02
7001-10500	$ 0.04
10501/up	$ 0.12

2013 rates

Cubic feet	Rate
Base charge	$ 65.00
0-1000	$ 0.01
1001-3500	$ 0.02
3,501-7,000	$ 0.04
7,001-10,500	$ 0.06
>10,500	$ 0.12

Awaiting results for evaluation

Table 2-9
Water Use Efficiency Program

Identify the steps you completed and target completion dates for remaining tasks.

Completed	Task	Completion Date
☒	**Step 1:** Describe previous water use efficiency efforts or WUE program.	**2012**
☒	**Step 2:** Describe your source of supply.	**2012**
☒	**Step 3:** Establish a WUE goal in a public forum. Include a short description.	**2011**
☒	**Step 4:** Select measures to support the WUE goal and evaluate them for cost-effectiveness. Include a list of your proposed measures. Y*ou don't have to evaluate the measures you choose to implement.*	**2011**
☒	**Step 5** Identify measures you will implement in the next six years. List the selected measures and implementation schedule.	**2011**
☒	**Step 6:** Provide WUE educational material to your customers. Attach a copy or brief description.	**2012**
☒	**Step 7:** Estimate projected water savings for each selected measure. Include a brief description.	**2012**
☒	**Step 8:** Establish how you will evaluate your WUE Program for effectiveness. Include a brief description.	**2012**
☒	**Step 9:** Determine your system's DSL. Use data from the same year used to calculate total water production and consumption in Section 2.6 and 2.7. Include the DSL totals.	**2010**
☒	**Step 10:** Evaluate the feasibility of adopting a conservation rate structure. Include a brief description of the results.	**2012**

Further action

- Include any remaining tasks in Section 3.0 (Next Steps).

For more information

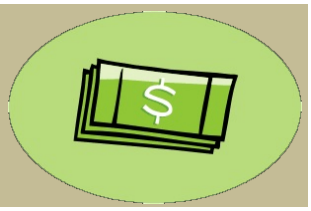
- See our WUE webpage for comprehensive guidance, fact sheets, and resources, at http://www.doh.wa.gov/ehp/dw/Programs/wue.htm

2.10 Next Steps to Improve Technical Capacity

List the follow-up action that you committed to take in previous sections. Include any estimated costs in the future expenses portion of your budget.

Item to address	Responsible party	Target start date	Target completion date	Estimated cost

Chapter 3: Financial



Financial capacity is the ability of a water system to generate sufficient revenue, maintain credit worthiness, and manage funds through budgeting, accounting, and other fiscal control methods.

What is sufficient financial capacity?

Revenue Sufficiency	• Rates and other system charges cover the full cost of providing service. • System personnel know and can measure all costs and revenues. • Reserve accounts or savings are available for unexpected expenses.
Fiscal Management	System personnel keep adequate books and records, use appropriate budgeting, accounting, and financial planning methods, and manage revenues effectively.
Credit Worthiness	• The system has an established credit rating to allow personnel to access funds for an emergency or to implement the capital improvement plan. • System personnel can access capital for the system through public or private sources.

3.1 Short-lived Asset Replacement and Other Planned Improvements

Purpose

To document the short-lived assets you need to replace in the next six years, the estimated schedule, and cost.

Background

Water systems must create a list of planned (or future) improvements (WAC 246-290-105). The list should describe the project, anticipated start date, and estimated cost. In Section 2.4, you assessed your system and determined which short-lived components (assets) you need to replace in the next six years. You can draw on that exercise to create a list of future improvement projects to replace your short-lived assets.

After you have a list of future replacement and improvement projects, you'll need to make sure your system has the funds to complete them. The best way to do this is establish a short-lived asset replacement reserve account. A reserve account will allow you to spread the cost of future projects over several years and help your system maintain financial stability and security.

How to complete this section

Follow the instructions below to complete Table 3-1A. This will be your list of short-lived asset replacement and any other planned improvement projects. This section contains an optional exercise (Table 3-1B) to help you calculate how much money you'll need to contribute annually to fund a short-lived asset replacement reserve account.

Step 1 Refer back to Table 2-4A in Section 2. Transfer the **short-lived assets** you need to replace in the next six years into Table 3-1A below. Include the estimated cost and the anticipated year.

Step 2 Identify any other improvement projects you intend to make that are not part of your asset replacement strategy. Include the estimated cost and the anticipated year. *For instance, installing customer service meters.*

Table 3-1A
Planned Improvements (short-lived assets)

Short-lived Asset Replacement or Other Improvement Project	Estimated Cost	Anticipated Year
	$	
	$	
	$	
	$	
	$	

Step 3 **OPTIONAL.** Use Table 3-1B (see directions below) to calculate how much money to contribute in each of the next six years to fund the improvements listed in Table 3-1A. Try to maintain a positive cash balance in your reserve account. This table allows you to estimate future contributions while taking into account future withdrawals for each improvement listed in Table 3-1A.

When you determine the annual amount you intend to contribute to your short-lived asset reserve account, insert that amount into the short-lived asset section in the budget table (Section 3.3).

How to Use Table 3-1B

Step 1 **Table 3-1B is an Excel spreadsheet** that you can click on and save to your computer as a separate document. The table begins with the current year (Current Year). It extends to each of the next six years ("CY+1" is next year and "CY+5" is five years out from this year).

Step 2 Enter your current short-lived asset reserve balance in the YELLOW cell. If you do not have a reserve account or the balance is currently zero, enter "0."

Step 3 Refer back to Table 3-1A. Transfer each project/asset replacement into the PINK cells. Then put the corresponding cost of each project/asset replacement into the year that you plan to complete it in the corresponding BLUE cells.

Step 4 Try inserting various amounts for your annual contribution in the GREEN cells until you can keep a positive balance for each of the next six years. Be sure to include expected withdrawals in the corresponding BROWN cells for each item listed.

Further action

- Re-examine your short-lived asset replacement needs and revise your list annually. Your list will change with time. You may complete items earlier than originally scheduled and add or delay other projects.

Table 3-1B
Planned Improvements (short-lived asset reserve)

Short-lived Asset Reserve						
	Current year	CY + 1	CY + 2	CY + 3	CY + 4	CY + 5
Short-lived asset reserve beginning balance		$0	$0	$0	$0	$0
Contribution to short-lived asset reserve						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Replace:						
Total withdrawal from short-lived asset reserve		$0	$0	$0	$0	$0
Short-lived asset reserve ending balance	$0	$0	$0	$0	$0	$0

3.2 Long-lived Asset Replacement

Purpose

To document the long-lived assets you need to replace in the next six years, the estimated schedule, and cost.

Background

At some point, you will need to replace the system's long-lived components (infrastructure). Too many small water systems rely on aging infrastructure that is quickly reaching or even passing its expected useful life. Planning to replace long-lived assets is different than it is for short-lived assets because you may need to obtain financing (a loan) to complete the project(s). Still, the concept is the same: you need to know which long-lived assets need replacing, when, and about how much they will cost.

We recommend having a long-lived asset reserve account because loans of any type (government or private bank loans) are getting harder to obtain. If you pursue a loan, a long-lived asset reserve account can reduce the amount you'll need to borrow and help you get the best loan terms possible. You can also use your reserve account to meet any "matching funds" requirements or pay for project costs not covered by the loan.

In Section 2.4, you assessed your system and determined which long-lived assets you need to replace in the next six years. You can draw on that exercise to create a list of future improvement projects (if any) to replace your long-lived assets.

How to complete this section

Follow the instructions below to complete Table 3-2. This will be your list of long-lived asset replacement projects.

Step 1 Refer back to Table 2-4B in Section 2. Transfer from Table 2-4B to Table 3-2 the **long-lived assets** that you expect to need replacing in the next six years. Include the estimated cost, anticipated year, and the financing method you expect to use.

Step 2 **OPTIONAL.** If you have a long-lived asset reserve account or you intend to start one, in the last column list the **total annual amount** you contribute or intend to contribute to the account. When you develop your budget (Section 3.3), you will carry this amount over to the long-lived asset portion of the table.

Table 3-2
Planned Improvements (long-lived assets)

Long-lived Asset Replacement	**Estimated Cost to Replace**	**Anticipated Year**	**Financing Method** *Bank loan, public loan, reserve fund, raise rates.*	**Reserve Account Total Annual Contribution** $
	$			
	$			
	$			
	$			
	$			
	$			
	$			

For more information

- See our **Drinking Water State Revolving Fund** webpage for information on low-interest loans available to public water systems

3.3 Six-Year Budget

Purpose

To develop a six-year operating budget that addresses system revenues, expenses, and improvement project financing.

Background

The governing body of a water system must secure stable and sufficient funds to support the operation, maintenance, and infrastructure replacement needs of the system. State law requires all water systems to demonstrate that they are and will continue to be financially viable (RCW 70.119A.100).

Financial viability is the ability to obtain sufficient funds to develop, construct, operate, maintain, and manage a public water system on a continuing basis, in full compliance with federal, state, and local requirements. A viable water system generates enough revenue to meet or exceed its expenses and its decision-makers manage the financial resources in a manner that accounts for future capital needs.

Note: If you combine the water system budget into a larger budget such as a homeowners association, you will need to complete the water system budget by splitting or proportioning out the revenues, expenses, and reserve balances that apply only to the water system.

How to complete this section

Table 3-3 is an Excel spreadsheet you can save to your computer and use to help you build a six-year operating budget.

You must provide a six-year operating budget in this section. If you don't use the Excel spreadsheet, you can print Table 3-3 and use it as a model to create a new budget or improve what you already have. Make sure you attach a copy.

Step 1 Click on **Table 3-3 to open it as an Excel spreadsheet**.

Step 2 The table begins with your actual revenue and actual spending in the current year, ***("Current Year")*** and the next five years, ***("CY+1"*** through ***"CY+5").***

The YELLOW cells allow you to enter dollar values. The GRAY cells are automatically calculated values. Do not enter numbers into GRAY cells. The cells with a small red upper corner will display more information if you hold the cursor over them.

Step 3 Develop a six-year budget by filling in the information for each line. Here are a few things to keep in mind as you begin:

- Apply an appropriate inflation factor to expenses that would not otherwise change. We suggest using an inflation factor of 3 percent per year.

- If it is difficult to collect revenue from a segment of your customer base, factor this into your revenue projections.

- Don't overlook other types of expenses, such as costs to implement your water use efficiency program, sanitary survey fees, or the cost of any additional required water quality sampling following an unsatisfactory sample.

- If you have questions about developing an adequate budget for your water system, call your **DOH regional office** and speak with the regional planner for your county.

Further action

- Review water system revenues and expenses monthly.

- Update the water system budget annually with new information and compare it to the most current component inventory worksheets.

- Revise the water system budget (rates, other revenues, or expenses) if the ending cash balance declines year after year, or any given year ends with a negative cash balance, or you must take on debt to meet operating expenses.

For more information

- **Financial viability for small water systems (331-405)** explains how to achieve financial viability.

Table 3-3
Budget Table

Form 3.3 - Budget Table						
Cash Balance Carried Forward		$0	$0	$0	$0	$0
Income and Revenue						
	Current Year	CY +1	CY +2	CY +3	CY +4	CY +5
Rates						
Annual or special assessments						
Property taxes (for taxing districts only)						
Miscellaneous revenue						
New connection fees						
Interest earned on bank deposits						
Total Income and Revenue and Balance	$0	$0	$0	$0	$0	$0
Operating Expenses and Payments						
Employee salaries and benefits						
Contract operator						
Insurance						
Water quality sampling						
Short-lived asset replacement						
Chemicals						
Electricity						
Fuel						
Vehicle maintenance						
Property taxes (paid)						
B & O tax (paid)						
Income Tax (for-profit utilities only)						
Engineering services						
Legal services						
Accounting services						
DOH fees						
Office supplies,postage						
Telecommunications (phone, internet)						
Utilities (water, sewer, waste collection)						
Travel and training						
Other expenses:						
Debt payments (loan principle and interest)						
Total Operating Expenses and Payments	$0	$0	$0	$0	$0	$0
Operating Reserve - Target Value						
Operating reserve beginning balance		$0	$0	$0	$0	$0
Contribution to operating reserve						
Operating reserve ending balance	$0	$0	$0	$0	$0	$0
Emergency Reserve - Target Value						
Emergency reserve beginning balance		$0	$0	$0	$0	$0
Contribution to emergency reserve						
Withdrawal from emergency reserve						
Emergency reserve ending balance	$0	$0	$0	$0	$0	$0
Short-lived Asset Reserve						
Short-lived asset reserve beginning balance		$0	$0	$0	$0	$0
Contribution to short-lived asset reserve						
Withdrawal from short-lived asset reserve	$0	$0	$0	$0	$0	$0
Short-lived asset reserve ending balance	$0	$0	$0	$0	$0	$0
Long-lived Asset Reserve						
Long-lived asset reserve beginning balance		$0	$0	$0	$0	$0
Contribution to long-lived asset reserve						
Withdrawal from long-lived asset reserve	$0	$0	$0	$0	$0	$0
Long-lived asset reserve ending balance	$0	$0	$0	$0	$0	$0
Long-lived Asset Replacement Funding						
Loan						
Grant						
Long-lived asset reserve						
Special capital improvement assessment						
Total funding for long-lived asset replacement	$0	$0	$0	$0	$0	$0
Ending Cash Balance for Current Year *Does not include reserve account balances.*	$0	$0	$0	$0	$0	$0

3.4 Water Rates

Purpose

To share key principles for establishing a water rate structure that will meet the needs of the system.

1. **Evaluate your system**. Know each cost to operate your system effectively. Take a clear-eyed view of your expenses, and don't make the mistake of comparing your water rates against those of a neighboring system. Each water system is different with its own expenses. Don't deliberately overlook anything because of the affect the expense will have on your rates. Other utilities such as electricity, gas, cable and communications all deliver their services at a much higher rate than most water utilities. For this reason, many small water systems need to grow their revenue (increase their rates) because they have under-priced their services for so long.

2. **Evaluate water use.** Know how your customers use water. Try to allocate the cost of service to the demands your customers place on the system in the fairest way possible. It's easy to create a fair rate structure if your customer base is uniform (such as a subdivision of single-family homes). However, if there a few large users that place a high demand on the system, you should factor the higher costs associated with meeting those demands into the rates you charge those customers. Establishing a conservation rate structure will help spread the cost of service more appropriately across your customer base.

   Higher system costs associated with customers who use a disproportionate amount of water include:

   - The need to install and maintain larger pipes, pumps, or reservoirs.
   - More frequent maintenance and replacement of mechanical equipment.
   - Higher energy bills.
   - The possible need to pursue additional water rights.

3. **Make sure rates and other revenues cover <u>all</u> your expenses.** If your system is running a deficit, you must adjust your rates. Don't delay rate increases to help your customers pay less. Deferring system costs to avoid raising rates causes larger, more dramatic rate increases later.

4. **Establish dedicated reserve accounts.** Don't borrow from one reserve account to pay for the purpose of another reserve account. Don't dip into reserve accounts in place of raising rates to meet your increased operating expenses. It's likely that the cost of operating your system is increasing, and you should factor that higher cost into your system's rates.

3.5 Next Steps to Improve Financial Capacity

List the follow-up action that you committed to take in previous sections. Include any estimated costs in the future expenses portion of your budget.

Item to address	Responsible party	Target start date	Target completion date	Estimated cost

Chapter 4: Other Documents

This section is to store important system records and required documentation in one place. Some sections are required components of your SWSMP and some are optional, but recommended.

However you choose to do it, keep a record of current and past system documents. Storing important system documents together creates a record of compliance and a system history. It's the best way to help those who will follow in your footsteps keep up your good work.

4.1 Water Facilities Inventory Form

Purpose

To document current system information on the Water Facilities Inventory (WFI) form.

Background

DOH sends a WFI form with **Instructions for Completing the WFI** to all Group A water systems each year. The WFI form provides useful contact information about the water system, including current names, addresses, and telephone numbers of system owners, operators, and emergency contact persons.

The WFI also includes crucial information about the system, such as source information, the number and type of connections, and population served. When you receive it, review the information, make necessary changes, and return a copy to your **DOH regional office** as soon as possible. After we receive a corrected WFI form, we will update our data system to reflect your changes and send a copy back.

Water systems must notify DOH within 30 days of changes to the system name, category, ownership or management responsibility, or adding source or storage facilities (WAC 246-290-480(2)(e)).

You should keep a copy of all current and past WFI forms in one location to create a historical record.

How to complete this section

Follow the steps below and attach a copy of your current WFI.

Step 1 Confirm the information is correct on your current WFI form. If a change to your system affects your WFI information, make the necessary revisions and send the updated WFI form to your **DOH regional office**.

Step 2 Attach a copy of your current (or corrected) WFI in this section.

4.2 Annual Operating Permit

Purpose

To document the system's compliance status by including a copy of the most current operating permit.

Background

All Group A water systems must obtain an annual operating permit from DOH (RCW 70.119A.110). Your operating permit has a designated color (green, yellow, red, or blue) that signifies your system's current compliance status. It's important to note that your operating permit color may change if the compliance status of your system changes.

Here is a summary of what each operating permit color signifies:

Permit Color	Compliance Parameters
Green	The system is in substantial compliance with the operating permit criteria in WAC 246-294-040(2)(9).
Yellow	One or more of the following conditions exist: • The system failed to comply with water system plan requirements (WAC 246-290-100). • The system failed to comply with water system financial viability requirements (RCW 70.119A.100 and WAC 246-290-100(4)(h)). • The system failed to comply with operator certification requirements (246-292 WAC). • The system failed to comply with coliform or inorganic chemical monitoring requirements (WAC 246-290-300). • The system failed to comply with inorganic or volatile organic chemical MCLs (WAC 246-290-310).
Red	One or more of the following conditions exist: • The system is under a Health Order issued under WAC 246-290-050. • The system is in violation of a departmental order (WAC 246-290-050) or federal administrative order (section 1414(g) of the Safe Drinking Water Act). • The system is an unresolved State Significant Non-Complier (SSNC) (WAC 246-294-040).
Blue	One or more of the following conditions exist: • The system exceeded the maximum number of connections approved by DOH. • The system has not received design approval by DOH.

How to complete this section

Follow the steps below to complete Table 4-2 and attach a copy of your current operating permit.

Step 1 Attach a copy of your current operating permit in this section. Consider keeping a list of past operating permits in this location to create a historical record. If you don't have a copy of your current operating permit, request a copy from your **DOH regional office**.

Step 2 Identify your current operating permit color in Table 4-2. If your operating permit is red, yellow, or blue, identify the condition(s) listed on your permit below. Next list the corrective action you will take and include a target completion date. Staff at your **DOH regional office** can help you understand what corrective action to take or help you develop an action plan for returning to compliance.

Make sure to include the follow-up action you identified and any associated costs in one of the "Next Steps" sections in your SWSMP and into the future expenses portion of your budget (Section 3.3).

Table 4-2
Annual Operating Permit

Current Permit Color	**Permit Condition(s)** *If your permit is red, yellow, or blue, list the conditions noted on the permit for returning to substantial compliance.*	**Corrective Action** *List the actions you intend to take to return your system to substantial compliance*	**Target Completion Date**

4.3 Consumer Confidence Report (Optional)

Purpose

To include a copy of the system's consumer confidence report.

Background

The Consumer Confidence Report (CCR) rule applies only to Group A community water systems (WAC 246-290-72001). It requires systems to develop and send a report to let all customers know whether their water meets state and federal health standards. The report will help people make informed choices about the water they drink. Reports and certification forms are due to DOH each year by July 1.

Note: The rule has very specific requirements for the content, format, and distribution of your consumer confidence report. You can see the complete CCR requirements at **WAC 246-290 Part 7, Subpart B.**

We recommend that you include a copy of your consumer confidence report in your SWSMP. This will help you keep a current and complete assessment of your water system in one central location.

How to complete this section

Attach a copy of your most recent consumer confidence report. Consider including your past consumer confidence reports to create a system record.

For more information

- **Consumer Confidence Reports (331-209)** is a fact sheet on the annual requirement.
- **Tips for preparing user-friendly consumer confidence reports (331-296)** explains how to prepare a consumer confidence report. It includes a sample report, certification form, and contaminant table.
- **Preparing Your Drinking Water Consumer Confidence Report (816-R-09-011)** contains guidance from the U.S. Environmental Protection Agency.

4.4 Other System Records (Optional)

Purpose

To include copies of important water system documents, and store them in one central location.

Some examples:

- Approval letters from DOH or the local health jurisdiction
- DOH correspondence, including sanitary survey reports
- WUE annual reports
- Insurance documents
- Waterworks operator certificates
- Homeowner association bylaws or guidelines
- Water district ordinances or resolutions
- Customer notifications, including newsletters or notices, consumer confidence reports, customer educational material

You may choose to include copies of these documents within the specific sections of your SWMSP instead. Your SWSMP must work for you and all of the individuals who are responsible to implement it.