Exhibit No. ___ (RS-9)
Docket No. UW-060343
Witness: Richard Sarver

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. ILIAD WATER SERVICE, INC., Respondent.	DOCKET NO. UW-060343

EXHIBIT TO RESPONSE TESTIMONY OF

RICHARD SARVER, DEPARTMENT OF HEALTH

ON BEHALF OF STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

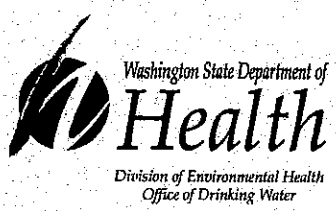
DOH Small Water System Management Program Guide, January 2000 (revised)

October 4, 2006

Small Water System Management Program Guide:

A guide for small non-expanding community Group A water systems

January 2000 (revised)



DOH PUB #331-134

Small Water System Management Program Guide:

A guide for small non-expanding community Group A water systems

January 2000 (revised)

For more information or additional copies of this manual contact:

Office of Drinking Water
PO Box 47822
Olympia, WA 98504-7822

Contents

Preface

Owning and operating a public drinking water system is a big responsibility. There are few things more important to maintaining good health than having access to safe drinking water. The purpose of this guide is to assist owners/operators of small non-expanding community Group A water systems to meet the requirements of state and federal drinking water laws, and ultimately to protect the health of their customers.

Much of this guide will be useful on a day-to-day basis. The guide can be used as a filing system for system personnel. Several water systems who have already used this guide tell us that it can serve many purposes including providing:

1) a central location for numerous water system records and system policies,
2) a process to evaluate present and future system deficiencies and improvements necessary for continued water system operation, and
3) a list of operation and maintenance duties that can be reviewed, used and improved as necessary by existing and future water system personnel so they may effectively manage and operate the water system.

This guide is printed on three-hole punched paper so system personnel can update and keep their guide in a binder for reference at their work location.

In addition to serving as a central filing system, by completing this guide, systems will also satisfy the Small Water System Management Program requirement in Washington Administrative Code (WAC) 246-290-105 and the capacity requirement for water systems mandated in the federal Safe Drinking Water Act.

How to Use this Guide

Existing water systems not intending to expand either their service area or approved number of connections are required to develop a Small Water System Management Program (SWSMP) (WAC 246-290-105). This guide, that includes 18 technical, managerial and financial elements, is intended to assist in the development of SWSMPs.

[**NOTE**: New systems or systems intending to install additions, extensions or changes to existing source, transmission, storage or distribution facilities, that will enable an increase in service area and/or number of approved connections, are required to develop and submit a more comprehensive Water System Plan for review and approval. If your system is intending to expand, please contact your drinking water program regional office (listed on the following page) for more information about this requirement.]

This guide contains a description of content and a blank form for each of the 18 elements. Specific instructions are provided for each element on how to complete the form. Some elements can be completed quickly (e.g., fill in information that should be readily available or attach documents you should have in your files). Other elements may take more effort (e.g., if one does not exist, create a service area and facility map or develop a cross connection control program).

Working through this complete guide may appear challenging at first, but from the perspective of assuring effective long term management of your system, each element is important. **To help you prioritize your efforts, please focus on the first five elements of this guide first.** [These elements primarily focus on accurate record keeping and water quality monitoring/reporting. They are absolutely essential and need your immediate attention.] Once these are completed, continue to work through the guide and develop the other technical, managerial, and financial elements.

A "To Do" list is located on page 6 of this guide. This list will help identify and keep track of follow-up assignments to complete various elements.

The Department of Health Drinking Water Program (DOH) may request that you submit your SWSMP for review for a variety of reasons including, but not limited to:

1) lack of compliance with drinking water regulations,
2) concerns raised in a sanitary survey,
3) a change of ownership or a proposed change in ownership, or
4) as part of the Drinking Water State Revolving Fund (SRF) application.

You should complete and revise the elements as necessary to maintain current information. If you need to update any elements/forms, you can request additional element/forms, or the entire guide from DOH on a 3.5" diskette.

How to Use this Guide (continued)

DOH is working with technical assistance providers in the state to help small water systems in completing SWSMPs. If you need help completing this guide, contact one of the technical assistance providers identified below. For other drinking water questions, you may call DOH at the numbers provided. There is a list of additional reference documents at the end of this guide on page R-1.

Technical Assistance Providers	
Rural Community Assistance Corporation 4305 Lacey Blvd. SE Lacey, WA 98503 360/493-2260	*Evergreen Rural Water of Washington* 510 N. Pine St. Ellensburg, WA 98926 509/962-6326 1/800/272-5981

Washington State Department of Health Division of Drinking Water	
Headquarters New Market Center, Building 3 P.O. Box 47822 Olympia, WA 98504-7822 800/521-0323	Northwest Regional Office 1511 3rd Ave., Suite 719 Seattle, WA 98101 206/464-7670 (Island, King, Pierce, San Juan, Skagit, Snohomish and Whatcom counties)
Eastern Regional Office 1500 W. 4th Ave., Suite 305 Spokane, WA 99204 509/456-3115 (Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman and Yakima counties)	Southwest Regional Office P.O. Box 47823 Olympia, WA 98504-7823 360/664-0768 (Clallam, Cowlitz, Clark, Grays Harbor, Jefferson, Kitsap, Lewis, Mason, Pacific, Skamania, Thurston and Wahkiakum counties)

SWSMP Element Summary Sheet

SWSMP Element Number and Title	Objective/Content
1) Water Facilities Inventory	Provides information about the water system (e.g., source capacity, number of connections and population served, etc.).
2) Water Quality Monitoring Program	Identifies the type, frequency and location of baseline water quality monitoring required for each existing, permanent and seasonal source and distribution system.
3) Consumer Confidence Report	Creates an annual educational water quality report, for distribution to your customers, which summarizes monitoring results.
4) Preparing for Your Sanitary Survey	Identifies things a system can perform to prepare for sanitary surveys.
5) Annual Operating Permit	Provides a compliance status report to system to correct any identified problems.
6) Cross-Connection Control Program	Documents cross-connection control program efforts to protect system from possible contamination.
7) Emergency Response Plan	Contains phone numbers of parties to contact in case of a system emergency.
8) Service Area and Facility Map	Contains service area boundaries and lists major system components.
9) Operation and Maintenance Program	Lists system personnel information (name, title, phone #) and identifies functions, frequency (e.g., weekly, monthly), and location of component maintenance.
10) Wellhead Protection Program	Summarizes the system's wellhead protection program.
11) Water Right Documentation	Lists the right (Permit, Certificate, or Claim) that includes the number of acre-feet and gallons per minute allowed to be withdrawn.
12) Record of Source Water Pumped	Charts the amount of water pumped from system sources.
13) Water Usage	Charts the number of system users, the average consumption per user, and the estimate of total system usage.
14) Water Conservation Program	Summarizes the system's conservation efforts that promote the wise use of water.
15) Component Inventory and Assessment	Verifies component approval status. Inventories system components. Identifies possible system improvements in the next six years.
16) List of System Improvements	Identifies the year, cost, and financing method for anticipated system improvements.
17) Budget	Includes revenues, expenses and capital improvement financing.
18) System Management	Documents the system's management practices including the decision making process.

SWSMP "To Do" List

While completing your SWSMP using this guide, you will probably identify some items that need completing. This "To Do" list is a good place to write down these items. This form has a space for you to identify the appropriate person to complete the task and a target completion date.

#	To Dos	Person	Target completion date
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Element 1

Water Facilities Inventory

Element 1 - Water Facilities Inventory

Purpose

To document current system information on the Water Facilities Inventory (WFI) issued by DOH.

Background

WAC 246-290-105 requires water systems to have a copy of their Water Facilities Inventory in their SWSMP. DOH sends a WFI to Group A systems every year. Both system owners/operators and DOH find the WFI useful for providing basic information about the system. You should review the information on the WFI and make any necessary changes. WAC 246-290-480 (2) (e) requires systems to notify DOH within 30 days if there have been changes to the system name, category, ownership or management responsibility. After DOH receives a corrected WFI, DOH updates its computer database to reflect any changes and sends an updated WFI back to the system.

Instructions For Completing Form 1 (form is on next page)

Step 1. Confirm information is current on your WFI and attach a copy.
If the information needs to be updated, make the changes and send the revised WFI to your DOH regional office.

(You should start keeping all of your past and current WFIs in one location so you create a "record" and always know where they are. If you do not have a copy of the current WFI, contact your DOH regional office to obtain a copy).

Form 1 - Water Facilities Inventory

Attach a copy of your system's current WFI.

Element 2

Water Quality Monitoring Program

Element 2 - Water Quality Monitoring Program

Purpose

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

Background

The drinking water regulations set water quality standards for public water supplies (MCLs-maximum contaminant levels). They also establish monitoring and public notification requirements for public water systems. Monitoring has 3 levels of activity, which are:

1) initial monitoring,
2) baseline monitoring, and
3) follow-up monitoring.

Initial monitoring applies to new source development and/or new groups of contaminants and is in effect for a short period of time. Baseline monitoring is routine monitoring assigned to a source/system over a long period based upon results of the initial monitoring. Finally, follow-up monitoring reflects an increase in monitoring activity from the baseline because chemicals or contaminants were detected in the water. Whenever a detection is above an identified trigger and/or MCL, the assigned monitoring frequency shifts from the baseline schedule to the appropriate follow-up monitoring schedule.

Element 2 identifies "core" monitoring requirements for existing ground water sources (permanent and seasonal wells, wellfields, and springs). WAC 246-290-300 is the section of the state regulations that outline the water quality monitoring requirements. Each water system is required to develop and carry out a schedule of required monitoring. Systems are not generally required to complete monitoring for purchased, intertie or emergency sources. Water systems are expected to collect the appropriate samples and send them to a DOH certified laboratory for analysis, along with a request for the laboratory to send a copy of the analysis to both the water system and DOH.

For each test conducted, the laboratory report should include:

1) results of the analysis for each of the required compounds, and
2) a list of trigger levels and MCLs for each compound analyzed.

If your test results exceed the "trigger" levels, you will be required to begin a follow-up monitoring program (a program with an increase in the number of samples required). If your test results exceed the MCL, you will be required to:

A) start a follow-up monitoring program,
B) satisfy public notification requirements, and
C) notify DOH and, if appropriate, take steps to correct the problem.

The chart below includes the type of contaminants required to be tested, when to sample, where to sample and if waivers are available. Waivers are the mechanism that allows DOH to reduce monitoring requirements, for selective contaminants, to less than the baseline schedule. Waivers are granted by DOH on a source-specific basis as well as on a state-wide basis where the risk of contamination has been determined to be low.

Contaminant	When to sample	Where to sample	Waiver?
Total Coliform Bacteria (COLI)	Number of samples required in WAC 246-290-300. This monthly requirement to be shown in system's Coliform Monitoring Plan. (Refer to the guidance document, a fill-in-the-blank document, for assistance in completing a Coliform Monitoring Plan.)	From representative points throughout distribution systems as indicated in the Coliform Monitoring Plan.	No
Nitrate (NIT)	Baseline: 1 sample every year * Follow-up: 1 sample every 3 months after a detection above the trigger of 5.0 mg/l **note: nitrate is included as a standard part of a complete inorganic chemical analysis*	From each active permanent & seasonal source after treatment and prior to entering the distribution system.	No
Inorganic Chemicals (IOC)	Baseline (for GW sources): 1 sample every 3 years. Follow- up: 1sample every 3 months after a chemical detection above a trigger value.	From each active permanent & seasonal source after treatment and prior to entering the distribution system.	Yes
Volatile Organic Chemicals (VOC)	Baseline (for GW sources): 1 sample every 3 years. Follow-up: 1 sample every 3 months after a detection of any compound in excess of the trigger of 0.5 ug/l	From each active permanent & seasonal source after treatment and prior to entering the distribution system.	Yes
Synthetic Organic Chemicals (SOC)	Baseline (for systems with a populations < 3,300) 1 set of samples every 3 years.* Follow-up: 1 sample every 3 months for any individual test method that showed a detection above a trigger. **note: a standard set of SOC samples includes test methods: 525.2, 515.1, & 531.1.*	From each active permanent & seasonal source after treatment and prior to entering the distribution system.	Yes
Lead & Copper (LCR)	This is an on-going monitoring program. Sampling requirements may change depending on the findings of previous monitoring. Contact your DOH region for current status and requirements.	Samples taken from the distribution system at targeted in-home taps.	No
Radionuclides (RAD)	Baseline: One sample every 4 years. Contact your DOH regional office for current status of this requirement.	From each active permanent & seasonal source after treatment and prior to entering the distribution system.	No

Each fall, DOH will send each system a Water Quality Monitoring Report that identifies their core water quality monitoring requirements for the next calendar year. The purpose is to provide a simple reminder of up-coming water quality sampling requirements. The requirements found in the report will reflect the current system status based upon the regulatory requirements and your monitoring history. As waivers are applied for and granted, the listed monitoring requirements will be edited to reflect those changes. If your monitoring requirements change as a result of the detection of regulated compounds above their trigger values (moving from baseline monitoring to follow-up), DOH will update the Water Quality Monitoring Report for the next year. You must adjust your sampling schedule to reflect these types of changes.

It is very important that you keep a copy of all laboratory sample results. This will help you document that the required monitoring has been completed. You can obtain a list of certified laboratories by calling 206/361-2822 or from the DOH web page at:

www.doh.wa.gov/ehp/dw/public.htm

Instructions For Completing Form 2 (form is below)

Step 1. Attach your Water Quality Monitoring Report (sent by DOH) that contains the baseline testing frequency for each of the contaminants for this calendar year.

Step 2. Transfer testing dates for the various contaminants into your system's working documents (e.g., budget, work schedule, contract with lab, etc.).

Step 3. Remember to revise you testing schedule if any additional follow-up testing is required or if your system has received a waiver for a specific monitoring requirement.

Step 4. Attach a copy of your Coliform Monitoring Plan (Ask DOH for a copy of the document "*Preparation of a COLIFORM MONITORING PLAN*", if you have not completed your Coliform Monitoring Plan).

Form 2 - Water Quality Monitoring Program

Completed	Task	Completion Date
☐	**Attach a copy of your Water Quality Monitoring Report**	
☐	**Transfer testing dates to other system documents**	
☐	**Agreement to revise testing schedule upon new follow-up testing requirements or waivers**	
☐	**Attach copy of Coliform Monitoring Plan**	

Element 3

Consumer Confidence Report

Element 3 - Consumer Confidence Report

Purpose

To write a brief educational water quality report to distribute to your customers each year that summarizes the results of your previous year's monitoring.

Background

The Consumer Confidence Report (CCR) regulation (40 CFR Part 141 Subpart O) applies to Group A community water systems only. It requires systems to develop and send a report to their users that declares whether or not their water meets state and federal health standards. The report will help people make informed choices about the water they drink. The first annual report was due October 19, 1999. Future reports are due by July 1st of each year.

Instructions For Completing Form 3 (form is on page 3-3)

Note: The federal CCR regulation has very specific requirements for the content, format and distribution of your "consumer confidence" report. The following instructions are for general reference only.

Step 1. Obtain a copy of the federal regulation or a guidance document or seek assistance before writing your report. (See Additional resources on the next page.)

Step 2. Gather your water quality monitoring data for the chemical tests you conducted during the previous calendar year (January through December). Also gather data from tests that you conducted less frequently than once a year, going back as far as five years (for example, volatile organic compounds [VOCs] or synthetic organic compounds [SOCs] that you might test for only every three years). (See Element 2.)

Step 3. Set up and fill in your report's water quality data summary table to include the following columns:

1) Substance Name
2) Maximum Contaminant Level (MCL), Action Level (AL) or Treatment Technique (TT)
3) MCL Goal
4) Your System's Result
5) Your System's Range of Results
6) Sample Date
7) Violation
8) Typical Source of Substance

The regulation requires your data to be summarized in the table in a very specific way depending on how frequently you monitor. You may also need to manipulate your data using conversion factors provided in the federal regulation. Refer to the federal regulation or a guidance document for specific instruction.

Do not include substances that are reported as non-detected by the laboratory in your data summary table. Non-detected values are usually indicated by "ND", "U" or a number with a "<" (less than) sign in front of it.

Include in your table only those substances that are reported as detected. A detection is any positive number reported by the laboratory (that is not preceded by a "<" less-than sign). Include values that are less than the MCL, AL or TT level as well as those that exceed (are greater than) these standards. Ask your laboratory if you are unsure whether a result is reported as a detect or a non-detect.

Step 4. If any of your test results exceed the MCL, the AL or a TT, include the mandatory health effects language and typical contaminant source information provided in the federal regulation's appendices. Also include the additional mandatory language and definitions that are provided in the federal regulation.

Step 5. Include a description about the type, location and name of your source water. Include information from a Source Water Assessment or other evaluation of susceptibility to contamination.

Step 6. Include information telling your customers about how they may participate in activities going on at your water system (for example, regularly held utility meetings, board meetings, city council meetings, etc.).

Step 7. Include your water system phone number and EPA's hotline number (below).

Step 8. Deliver a copy of your CCR to each service connection by the annual due date. Also make your CCR available to other consumers that are not directly connected to your system, such as tenants at apartment buildings, students and faculty at schools and employees at office buildings.

Step 9. Send a copy of your CCR along with the required signed and dated certification form to your Washington State Department of Health, Division of Drinking Water Regional Office by the annual due date.

Step 10. Keep a copy of your CCR and certification form in your system file for five years.

Additional resources

Environmental Protection Agency Hotline– 1-800-426-4791

WA State Department of Health, Division of Drinking Water – 1-800-521-0323

Form 3 - Consumer Confidence Report

Completed	Task	Completion Date
☐	**Obtain a copy of the federal regulation or guidance document**	
☐	**Gather water quality data**	
☐	**Construct and complete your eight column data summary table**	
☐	**Include required definitions and educational and mandatory language**	
☐	**Include general source water and Source Water Assessment information**	
☐	**Include customer involvement information**	
☐	**Include water system phone number and EPA's hotline number**	
☐	**Send CCR to each service connection and other consumers**	
☐	**Send CCR and a signed and dated certification form to your Division of Drinking Water Regional Office by the annual due date**	
☐	**Put a copy of your CCR in your own files**	

Element 4

Preparing For Your Sanitary Survey

Element 4 - Preparing for Your Sanitary Survey

Purpose
To identify the things a system should do to prepare for and follow-up on their sanitary survey.

Background
WAC 246-290-416 requires routine sanitary surveys for all Group A systems at least once every five years. Sanitary surveys are periodic inspections of water system facilities, operations and record keeping by DOH staff or by a DOH qualified designee (Third Party Sanitary Surveyor).

These inspections identify conditions that may present a potential or existing sanitary risk, such as failing infrastructure or lack of certain maintenance practices. The surveyor will provide a standard "DOH Survey Report Checklist" or a DOH letter stating the findings of the survey and recommendations on how to correct any problems.

DOH has entered into agreements with many Local Health Jurisdictions (LHJ) to conduct the surveys of systems without certified operators (this generally includes community systems with less than 100 connections and non-community systems that either purchase their water or use groundwater sources). In those counties where the LHJ has not entered into such an agreement, DOH maintains a list of individuals qualified to conduct these inspections. It is the responsibility of the water system to contact one of these qualified surveyors and make arrangements for the survey to be conducted once they have been notified that a survey is required.

The content of the inspection will vary depending upon whether DOH personnel or a Third Party Surveyor conducts the survey. All surveys, however, will include at a minimum a review of the following issues:

- Water facilities inventory
- Coliform monitoring history and coliform monitoring plan
- Source water quality monitoring
- An inspection of sources and storage facilities

In addition, DOH surveys may include discussion of the following issues:

- Wellhead or watershed protection program
- Status of cross connection control program
- Water right discussion and self-assessment requirements
- Water use records
- Operator certification status and amount of training support

Note: Completing this guide will assist your system manager/operator and the surveyor in conducting the survey by creating an organized filing system for many of the items to be reviewed in the survey)

Instructions For Completing Form 4 (form is below)

Step 1. DOH or an appointed designee will contact you when you need to have a sanitary survey (should be at least every five years unless your system has a problem).

Step 2. Arrange for system personnel to be available on a specified survey date so they can share system records (e.g., SWSMP, WFIs, water quality results, etc.) and show the surveyor around the system (i.e., a tour of the system facilities, pump house, storage, booster pumps, treatment unit, etc.).

Step 3. The system operator should prepare for the inspection by making sure various records are gathered, reviewed and organized so you can share them with the surveyor. Some general house cleaning is also in order.

Step 4. Get ready to conduct the survey. At the end of the survey, the surveyor will share the results with the operator/manager.

Step 5. The surveyor will send you a follow-up letter regarding the survey, with a schedule for correcting critical deficiencies. The letter will include an invoice for the survey (if not already paid as part of the LHJ survey application).

Step 6. Complete any corrections identified in the summary report.

Step 7. Critical deficiencies are tracked by DOH until completed (if applicable).

Step 8. Keep copy of survey report checklist or DOH letter for your records.

Form 4 – Preparing for Your Sanitary Survey

Completed	Task	Completion Date
☐	**Your system has been contacted to schedule a survey(next survey date)**	

(Survey scheduled at least every five years)
(Boxes below filled in after survey scheduled)

☐	**Arrange system personnel to be available on day of survey**	
☐	**System records organized/available (general housecleaning completed)**	
☐	**Final preparation for survey completed**	
☐	**Survey follow-up letter received and filed (attached)**	
☐	**Needed corrections scheduled for completion(if applicable)**	
☐	**File any additional follow-up correspondence concerning survey**	

Element 5

Annual Operating Permit

Element 5 - Annual Operating Permit

Purpose

To document the system's compliance status, at the time the permit is issued, and for non-complying systems to develop a plan to achieve compliance.

Background

Revised Code of Washington (RCW) 70.119A.110 require all Group A water systems to obtain an annual operating permit from DOH. Each system receives its permit with a designated color (green, yellow, red, or blue) that signifies the system's current compliance status.

The following chart summarizes what each color designation signifies.

Operating Permit Color	Operating Permit Compliance Parameters
Green	Is in substantial compliance with operating permit criteria in WAC 246-294-040 (2).
Yellow	One or more of the following conditions exist: 1. The system has not complied with water system plan provision of WAC 246-290-100. 2. The system has not complied with water system financial viability provisions of RCW 70.119A.100 and WAC 246-290-100 (4) (h). 3. The system has not complied with operator certification provisions of chapter 246-292 WAC. 4. The system has not complied with coliform or inorganic chemical monitoring provisions of WAC 246-290-300; and 5. The system has not complied with inorganic or volatile organic chemical MCLs in accordance with WAC 246-290-310
Red	One or more of the following conditions exist: 1. The system has been issued a Health Order in accordance with WAC 246-290-050. 2. The system is in violation of any departmental order issued under WAC 246-290-050 or federal administrative order issued under section 1414 (g) of the Safe Drinking Water Act.. 3. The system is confirmed by the department as an unresolved Significant Non-Complier (SNC) 4. The system has exceeded the maximum number of services allowed in the distribution system by departmental approval.
Blue	The system has not been evaluated.

Instructions for Completing Form 5 (form is below)

Step 1. Attach a copy of the system's current annual operating permit. (You should start keeping all of your past and current operating permits in one location so you create a "record" and always know where they are. If you do not have a copy of the current annual operating permit, contact your DOH regional office to obtain a copy).

Step 2. If your system has a yellow or red permit, you should work with your DOH regional office to develop a compliance action plan for returning to compliance. Identify your compliance action plan with timelines on the form below.

Form 5 - Annual Operating Permit

Attach a copy of the current annual operating permit.

If your system has a yellow or red operating permit, identify the conditions that exist on the permit and contact the DOH regional office to determine your compliance action plan for getting back into compliance. Identify the corrective actions and time frames for completing the actions.

Permit Conditions

_____

_____

_____

Compliance Action Plan With Timeline

* For each condition, list how you will correct the condition and give a time frame for correcting the conditions. If you are unsure of how to correct deficiencies, contact your DOH regional office.

_____

_____

_____

_____

_____

_____

_____

Element 6

Cross-Connection Control Program

Element 6 - Cross-Connection Control Program

Purpose

To summarize key steps needed to develop and implement a cross-connection control program to protect the system from any actual or potential physical connection between a water system and any source of non-potable liquid, solid, or gas.

Background

WAC 246-290-105 requires water systems to create and implement a cross-connection control program (CCCP). A cross-connection is any actual or potential physical connection between a public water system, or the consumer's potable water system, and any non-potable liquid, solid or gas, that could contaminate the potable water supply by backflow. Swimming pools, irrigation systems, and auxiliary water supplies are examples of typical cross-connections. Each Group A system must have a CCCP to protect the public water system from contamination via cross-connections. WAC 246-290-490 contains additional information regarding CCCPs.

The basic method of protecting a water system is by installation of an approved air gap or backflow prevention assembly at the consumer's service connection (premises isolation). Premises isolation is required for certain types of premises per Table 9 in WAC 246-290-490. For other types of premises, protection at the point of hazard (in-premises protection) per the Uniform Plumbing Code is generally acceptable.

Instructions For Completing Form 6 (form is on page 6-3)

Step 1. Document authority to implement the CCCP The system must document its legal authority to implement a CCCP. Legal authority is established through adoption of local ordinances, resolutions, codes, by-laws or other written legal instruments. Details such as program purpose, definitions, responsibilities, technical procedures, operating procedures and enforcement actions should be included.

Step 2. Conduct initial hazard evaluation Systems without established CCCPs must conduct an evaluation of each service connection to determine if any customers have specialized plumbing or on-site activities that could contaminate the distribution system if backflow occurs. If no cross-connection hazards are identified, systems only need to complete Steps 1 and 6. Systems identifying cross-connection hazards should proceed with Steps 3 through 8.

Step 3. Arrange for certified personnel to implement the CCCP Systems must designate at least one person certified by DOH as a cross-connection control specialist to develop and implement the CCCP. System staff or a consultant cross-connection control specialist may be designated to meet this requirement.

Step 4. Develop administrative and technical procedures Systems must develop administrative and technical procedures for implementing the CCCP. CCCP procedures are often included in the document in Step #1 or are adopted by policy. Procedures should include elements such as coordination with the local administrative authority, hazard evaluation, requirements for backflow protection, priorities for evaluating facilities, backflow incident response procedures, and assembly installation and testing standards. Enforcement action for water system customers failing to comply with CCCP requirements should also be included.

Step 5. Provide for consumer education regarding cross-connections Systems must develop a consumer education program regarding the public health hazards associated with cross-connections and recommend steps to eliminate or control them through installation and annual testing of approved backflow assemblies.

Step 6. Re-evaluate existing services and evaluate new services After the initial evaluation, systems must periodically re-evaluate existing services for actual or potential cross-connections, which could contaminate the distribution system. Application for new services and changes in use of existing services should be reviewed to determine if backflow protection is needed. Using signed service agreements, systems should require all customers to comply with the system's CCCP requirements (including testing of assemblies) as a condition of service.

Step 7. Establish and implement a process for ensuring assembly testing Systems must implement a process to ensure the annual testing of backflow prevention assemblies by DOH-certified backflow assembly testers (BATs) and the inspection of air gaps by either DOH-certified cross-control specialists or BATs. The CCCP must also include a quality control component associated with assembly testing.

Step 8. Develop a record-keeping and reporting system Systems must develop a record-keeping system (database) for maintaining various system-specific records associated with CCCP implementation. Systems must also complete the annual CCCP Summary Report and any Backflow Incident Reports (as applicable).

Form 6 - Cross Connection Control Program

The following elements of the CCCP have or will be completed by the dates listed (check boxes for elements that have been completed and fill in target completion date):

Completed	Task	Completion Date
☐	**Document authority to implement program**	
☐	**Conduct initial system evaluation**	
☐	**Obtain a DOH-certified cross-connection specialist to implement program**	
☐	**Establish administrative and technical procedures**	
☐	**Provide for consumer education regarding cross-connections**	
☐	**Reevaluate existing facilities and evaluate new facilities**	
☐	**Implement a process for ensuring assembly testing**	
☐	**Develop record-keeping and reporting system (including your annual CCCP Summary Report and any Backflow Incident Reports (as applicable)**	

Element 7

Emergency Response Plan

Element 7 - Emergency Response Plan

Purpose

To identify a process for 1) system personnel to notify system users about an emergency, 2) system users to notify system personnel about an emergency, and 3) system personnel to create a System Emergency Reference List.

Background

WAC 246-290-105 requires water systems to create and implement an Emergency Response Plan. System personnel should have, or be in the process of developing a plan on how to react to a system emergency. Proper reaction includes a two-way communication of information. System personnel need to be able to notify system users and develop a plan of action to solve any emergency problems that may arise.

Instructions For Completing Form 7 (form is on next page)

Step 1. Indicate how system personnel will inform system users (e.g., phone, flyer, personal contact, etc.) in case of an emergency (e.g., power outage, water quality issue, lack of pressure or volume, etc.).

Step 2. Indicate how the system will provide the system users with the names and numbers of system personnel to contact to report an emergency.

Step 3. Fill in the names and numbers of the individuals that system personnel should contact in case of an emergency.

Step 4. Develop a plan on how to respond to the most common types of system emergencies.

Additional resources

Emergency Planning Instructional Guide, Washington Department of Health, Division of Drinking Water, April 1982.

Emergency Planning Workbook and Instructional Guide, Washington Department of Health, Division of Drinking Water, April 1982.

Form 7 - Emergency Response Plan

1. Emergency Notification to Customer The system notifies all system users via the following manner in case of an emergency (Check all that apply):

___Phone calls (phone list location)_____

___Media release _____ ___Door to Door

___Other_____

2. Emergency Numbers Distribution System users are provided the names and phone numbers of the system personnel to contact in case of emergency via the following manner (Check all that apply):

___Billing ___Newsletter ___Other_____

3. System Emergency Reference List

Emergency contact	Phone number(s)	Emergency contact	Phone number(s)
Fire/Police/Medical		Electrician	
County emergency services		DOH regional engineer	
County environmental health contact		DOH emergency contact After hours #	1-877-481-4901
Department of Ecology Spill Response		System owner	
Engineering consultant		System operator	
Electric utility		System engineer	
Pump service		Media contact	
Pipe service		Call Before You Dig #	
Other		Other	

4. Describe what you will do if the following emergencies happen to your system and attach at end of this section:

a) Power Outage _____

b) Well Pump Failure _____

c) A break in the distribution lines or transmission mains _____

d) Electrical problem _____

e) Coliform MCL Violations _____

Element 8

Service Area and Facility Map

Element 8 - Service Area and Facility Map

Purpose

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

Background

WAC 246-290-105 requires water systems to have a service area and facility map. A map that identifies the location of facilities will be helpful to system personnel (e.g., in making repairs, taking samples or reading meters). The service area and facility map information will also be useful to system personnel in preparing emergency plans and when explaining to potential customers where and how the system provides service.

Instructions For Completing Form 8 (form is on next page)

Step 1. Obtain a copy of your system map

- The final engineering documents, or "as-built drawings" should have included a map of the system. You can use these documents to create a service area and facility map.
- If you do not have a system map prepared by an engineer, you can use a street map. It is in your best interest, however, to get a more detailed map of the system at the first opportunity. Your local county planning department or assessor's office may be a source for a detailed area map.
- If there is no system or street map available, you can use a 7.5 minute U.S. Geological Survey topographic map, if you enlarge the map by photocopying. Before enlarging, draw a one-mile bar of the correct scale on the photocopied map. You can purchase a 7.5 minute map by contacting:

  Washington State Department of Natural Resources
  Photo and Map Sales
  PO BOX 47031
  Olympia WA 98504-7031 (360) 902-1234

Step 2. Draw in the existing service area. The system's existing service area is the area where the system already provides service and can provide service to additional lots with the existing distribution system.

NOTE: If a system proposes to extend distribution lines into new areas, your system is considered an expanding system. Expanding systems must complete a Water System Plan, pursuant to WAC 246-290-100, which is different than a SWSMP. If there are plans to expand your system, contact DOH regional planner to discuss the type of planning document required.

Step 3. Draw in the location of the facilities listed below (if your system does not have a particular type of facility (e.g., booster pumps) write in NA (i.e., not applicable):

___Sources (well name, DOH source #)
___Treatment facilities with capacities
___Hydrant
___Service Connections
___Storage facilities (name and capacities)
___Pressure Zones
___Booster pumps (name and capacities)
___Sampling points
___Distribution lines (include type of material and diameter of pipe)
___Valves (e.g., pressure reducing, isolation, air relief, blow off, etc.)

Form 8 - Service Area and Facility Map

Attach a copy of the Service Area and Facility Map if an existing map is available, otherwise use the process described above to create the map and attach.

If the map is too large to attach, indicate which facilities are identified on your map (using the list above), who produced the map, when the map was produced and where the map is kept (e.g., office, shop, etc.).

Element 9

Operation and Maintenance Program

Element 9 - Operation and Maintenance Program

Purpose

To identify maintenance duties to operate and maintain the system in compliance with drinking water regulations.

Background

WAC 246-290-105 requires water systems to develop an operation and maintenance program. Having a preventive maintenance schedule will help system personnel regularly perform inspections, repairs, cleanings and other maintenance duties. It will also document what work personnel have already completed in case the system needs additional repairs or replacements in the future. The schedule will also help any new employees responsible for maintenance duties.

Instructions For Completing Form 9 (form is below)

Step 1. Fill in the information about the system personnel (name, title/operator certification level, , phone number)

Step 2. Have the person responsible for doing the maintenance on the system write down the current maintenance functions (e.g., check well and reservoir seals & screens, calibration of chemical injection systems, etc.) and how frequently (weekly, monthly, quarterly etc.) they perform the functions.

Step 3. Indicate normal settings, positions and/or readings for pump controls, electrical switches, valves, gauges, etc.

Step 4. Develop a list of supplies that you will need to periodically order and include the name and phone number of the person to contact for the supplies.

Step 5. You may want to have a technical assistance provider check this list for completeness. Parties conducting sanitary surveys will also review the system's maintenance schedule.

Note: If this information already exists in another form/document (e.g., operations plan), reference and attach that form/document rather than fill in this element.

Form 9 – Operation and Maintenance Program

System Personnel Information

Name	Title/Certification Level	Phone number(Day/Night)
		( )
		( )

Form 9 – Operation and Maintenance Program (continued)

Maintenance Schedule (Routine and Preventative)

Function Schedule items to check and adjust (for example adjusting flow control valves, reading flow meters, checking water levels in storage tank and reservoirs, reading pressure gauges and checking volumes of chemicals used)	**Frequency** List the frequency that you complete the functions (day, week, month, semi-annual, annual, etc.)

Indicate normal settings, positions and/or readings for pump controls, electrical switches, valves, gauges, etc.

Type of switch/valve/control	**Normal settings**

Develop a list of supplies you periodically order and include the name and phone number of the person to contact for the work or supplies.

Type of supplies	**Name/List of contractors/suppliers**	**(#)**
		( )
		( )
		( )
		( )

Element 10

Wellhead Protection Program

Element 10 - Wellhead Protection Program

Purpose
To protect source water used by public water systems by identifying and reducing known and potential contaminants.

Background
WAC 246-290-135 (Source Protection) requires all Group A public water systems using their own wells or springs to develop a Wellhead Protection Program.

Note: DOH has developed a Wellhead Protection guidebook. This element is intended to cover specifics of the wellhead planning process but only in an overview fashion. If you have not completed the items on the form, get a copy of the guidebook and contact one of the technical assistance providers identified in the beginning of the manual.

Instructions For Completing Form 10 (form is on next page)

Step 1. Conduct susceptibility assessment Provide a completed susceptibility assessment form to DOH.

Step 2. Provide wellhead protection area information Provide a map and explanation showing how the system calculated the wellhead protection zones and where these areas are located. Your system may begin with a Calculated Fixed Radius (CFR) method.

Step 3. Contaminant source inventory Provide an inventory of known and potential sources of contaminantion in the Wellhead Protection areas. Include a discussion on the past, present and anticipated land uses in your wellhead protection zones.

Step 4. Provide notification of the known and potential threats Provide a copy of your letter notifying the appropriate regulatory agencies, local governments, public, and owners/operators of the identified known and potential contaminant sources of the Wellhead Protection area boundaries, inventory findings, and contingency plan conclusions. The letter should include a discussion of the susceptibility ranking of your system, the meaning of that susceptability determination, and the number of persons served by your system.

Step 5. Contingency plan Provide a contingency plan to address long term replacement of your source of supply. You can integrate this documentation with other contingency planning efforts.

Step 6. Spill response planning Provide documentation of coordination with local emergency spill/incident responders (i.e., police, fire and health departments), including notification of Wellhead Protection area boundaries, results of susceptibility assessment, inventory

findings, and contingency plan. You can integrate this documentation with the other emergency response planning efforts described in Element 7.

Step 7. Overview Provide a brief overview of how your system developed and implemented its Wellhead Protection Program.

Additional resources *Washington State Wellhead Protection Program Guidance Document*, Washington Department of Health, Environmental Health Programs, DOH #331-018, 4/1995.

Form 10 - Wellhead Protection Checklist

Confirm that you have included or commit to develop the following required components by checking the boxes and/or identifying an anticipated completion date:

Susceptibility assessment

A completed susceptibility assessment (monitoring waiver application), or documentation of prior submittal to DOH.

Completed Completion Date _____

Delineation

The pumping rate (quantity) and screened interval of the well used for the CFR delineation. Map of the 1, 5, and 10 year time of travel zones plotted on an appropriately scaled map. If your system has site specific delineation provide: an explanation of the methodology you used, a list of those notified of the WHP area boundaries, and an example notification letter.

Completed Completion Date _____

Inventory

List of the potential and known contaminant sources in the Wellhead Protection area, grouped by time of travel zones, as derived from the inventory.

List of owners/operators of potential and known contaminant sources notified of their location in the Wellhead Protection area (along with example notification letter).

List of regulatory agencies and local governments notified of the location of potential and known sources of ground water contamination within the Wellhead Protection areas.

Completed Completion Date _____

Contingency and emergency response plans

A contingency plan for an alternative source of potable water.

Documentation of notification to appropriate emergency response agencies.

Completed Completion Date _____

Overview completed

Completed Completion Date _____

Element 11

Water Right Documentation

Element 11 - Water Right Documentation

Purpose

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

Background

Under the state water code, a water system can only put water to use after it obtains a water right. All public water systems using surface water and those using ground water with wells pumping 5,000 or more gallons per day or irrigating one-half acre or more must have a water right.

Instructions For Completing Form 11 (form is on next page)

Step 1. Include a copy of the system's water right document(s) (permit, certificate or claim). If you do not have a copy of these documents, contact the appropriate Department of Ecology (Ecology) regional office to obtain a copy (numbers listed on the next page). The Ecology regional office will ask you for your source's section, township and range. Your county tax assessor's office should be able to help you obtain this information.

Note: If water rights have not been obtained or are deemed inadequate by Ecology, you may be required to submit your SWSMP or develop and submit a water system plan for review and approval in order to obtain a water right.

Step 2. Each water right document has five key parameters:

1. Withdrawal Limits-Instantaneous and Annual
2. Point of Use
3. Place of Use
4. Type of Use
5. Time of Use

For this exercise, copy the information on your water right document(s) for the first key component (Withdrawal Limits- Instantaneous and Annual) on the form. Fill in this information for each of your system's water right documents (permits, certificates or claims). Confirm your water use is consistent with the other water right parameters (i.e., point of use, place of use, type of use and time of use).

Step 3. If Ecology has notified you or another system representative that they have concerns with your water right document(s) (place or purpose of use restrictions, etc.) and DOH has determined that a water system plan is not required, summarize the water right issue and describe your efforts to resolve the issue.

Additional resources

Washington State Department of Ecology Regional Offices

Southwest Regional Office (360) 407-6300

Clallam, Jefferson, Grays Harbor, Mason, Pierce, Thurston, Pacific, Lewis, Cowlitz, Wahkiakum, Clark and Skamania Counties

Northwest Regional Office (425) 649-7000

Whatcom, Island, San Juan, Skagit, Snohomish, King, and Kitsap Counties

Central Regional Office (509) 575-2491

Okanogan, Chelan, Douglas, Kittitas, Yakima, Benton, and Klickitat Counties

Eastern Regional Office (509) 456-2926

Ferry, Stevens, Pend Oreille, Lincoln, Spokane, Grant, Adams, Whitman, Franklin, Garfield, Walla Walla, Columbia, and Asotin Counties

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Form 11 - Department of Ecology Water Right

Attach a copy of the system's water right document(s) (permit, certificate or claim).

For each water right document, fill in the information for the two Withdrawal Limit Parameters identified in the spaces below.

	Sources *#1*	*#2*	*#3*	*#4*
Instantaneous (max. gallons per minute/cubic ft per second)	___	___	___	___
Annual (Maximum Acre-Feet per Year)	___	___	___	___

Identify any issues with your system's other water right parameters_____

_____

_____

_____

Describe what you are doing to resolve the issues with your water right documents_____

_____

_____

_____

Element 12

Record of Source Water Pumped

Element 12 - Record of Source Water Pumped

Purpose
To document how much water you system sources produce.

Background
WAC 246-290-105 and WAC 246-290-480 (2)(e) require systems to record total annual water production for each source. A system must submit this information to DOH upon request. While this information can be estimated, information taken from actual meter readings is more accurate.

A record of source water pumped can help system personnel determine if the system is functioning properly (e.g., sudden leaks) and if the system usage is within the withdrawal parameters of the water right (Element 11). Much of the water resource analysis in the rest of this guide is dependent upon knowledge of the total amount of water pumped from the source.

Note: Although it is not required, if you do not have a meter, you should make plans to install one on all of your sources.

Instructions For Completing Form 12 (form is on next page)

Step 1. For each source, fill in the name and DOH source number (well # or surface # from WFI). Note any discrepancy between the system's name for a well and the name for the well on your WFI.

Step 2. Write in the year that the data is being recorded.

Step 3. Indicate whether your usage figures are taken from meter readings or by some other method. If other, identify the method used for estimating the production.

Step 4. Indicate whether figures are in gallons or cubic feet.

Step 5. Record source production on this chart.

Step 6. Keep records of past production (this information will be helpful in examining use trends).

Form 12 - Record of Source Water Pumped
(Make a copy for each source)

Source Name/DOH Source #_____

Year _____

These figures are taken from [___meter reading] [___other method( )_____]

Month	Water Pumped- (in Cubic Feet ( ) or Gallons ( ) *A
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Total Annual	

*A) To convert gallons into cubic feet, divide the number of gallons by 7.48. To determine the number of gallons, multiply the number of cubic feet by 7.48.

B) To calculate the number of acre-feet pumped, divide total gallons pumped by 325,851.

C) Is the system within its legal water right? ___Yes ___No, or ___Unsure, If no or unsure, include this issue on Form 11 and contact the Department of Ecology to explore changing your water rights.

Element 13

Water Usage

Element 13 - Water Usage

Purpose

To document how much water the system users are using now and to estimate how much they may use at total system buildout.

Background

WAC 246-290-105 requires water systems to record water usage. It is very important to know how much water the system will need to provide in the future. By forecasting future usage, you can determine if you will need to get additional water rights (as addressed in Element 11) or if you will need new system facilities to serve your future in-fill system users..

Note 1: If your number of projected in-fill connections is greater than your approved number of connections, your system may have to develop a WSP in accordance with WAC 246-290-100.

Note 2: DOH is in the process of transitioning its records from the use of "Approved or Active Connections" to Approved or Active Equivalent Residential Units (ERU). Line 3 computes how much each of your ERUs consume. This figure is important to develop and record and may ultimately impact your future number of approved ERUs.

Instructions For Completing Form 13 (form is on next page)

Fill in lines 1 through 9 on the chart on the following page. The steps below provide additional information about how to fill in each line.

Step 1. Fill in the number of existing residential services (Line 1). This information is obtained from system records. Seasonal users or recreational lots with water are considered a full service.

Step 2. Fill in the annual volume used by residential services using information from service meters (Line 2) (in gallons). If system is partially metered, estimate consumption by multiplying the average of the metered users times the total number of services.

Note: If you do not have any residential service meter records, contact one of the technical assistance providers identified in the front of the guide to assist you with this element.

Step 3. Calculate and fill in the average annual usage per residential user (Line 3) (Divide Line 2 by Line 1).

Step 4. Calculate and fill in the existing Non-Residential Services Usage (Line 4). Many small systems do not have commercial or industrial services. If your system does, fill in the annual usage from system records. If there are no records, estimate commercial and industrial customer use.

Step 5. Calculate and fill in the Existing Total System Annual Usage (Line 5) (Add Lines 2 and 4).

Step 6. Fill in the number of connections approved by DOH on your system's WFI (Line 6). If you do not agree with this number, contact DOH.

Step 7. Calculate and fill in the projected annual volume to be used by all of your approved residential connections (Line 7) (Multiply Line 3 by Line 6).

Step 8. Estimate the projected non-residential service usage (Line 8). If the system already serves or is projected to serve commercial or industrial customers, estimate how much the commercial and industrial customers will use when they are all eventually connected to the system.

Step 9. Calculate and fill in the Total Projected System Usage at buildout (Line 9) (Add Lines 7 and 8)

Form 13- Water Usage (The information in this chart should be kept current)

Line #	Type of Information (Annual Usage Figures in Gallons)	
Line 1	Number of Existing Residential Services (From System Records)	
Line 2	Existing Residential Services Annual Usage (From System Records) (If there are no records, contact a technical assistance provider to provide you with an estimate)	
Line 3	Average Annual Usage Per Residential Service (ERU usage) (Divide Line 2 by Line 1)	
Line 4	Existing Non-Residential Services Annual Usage (If Applicable) From System Records	
Line 5	Existing Total System Annual Usage (Add Lines 2 and 4)	
Line 6	Total Number of Projected Residential Services (Number of Approved Connections on WFI)	
Line 7	Projected Residential Services Annual Usage (Multiply Line 3 by Line 6)	
Line 8	Total Projected Non-Residential Services Annual Usage (If Applicable) (From System Records)	
Line 9	Total Projected System Annual Usage (Add Lines 7 and 8)	

Element 14

Water Conservation Program

Element 14 - Water Conservation Program

Purpose
To identify the system's water conservation program efforts that promote wise use of water.

Background
WAC 246-290-105 requires systems to develop a conservation program as part of the SWSMP. A conservation program that educates system users about the true value of water and about using water wisely will likely reduce consumption and help prevent water shortages.

Note: If you are part of a Coordinated Water System Plan (CWSP) and the CWSP has adopted a conservation program, please make sure your conservation plan satisfies the CWSP requirements.

Instructions For Completing Form 14 (form is on next page)

Step 1. Adopt a written conservation goal to promote wise and efficient use of water. There may be additional goals or objectives that you may want to use to address concerns specific to your system (e.g., reduce peak demands from outdoor lawn watering).

Step 2. Educate system users on conservation. The easiest method for a system to educate its users on conservation is by distributing water conservation guidelines. DOH/Ecology has developed eight Water Conservation Guidelines. Contact DOH for free copies of these guidelines by calling (800) 521-0323. In addition to the education efforts, you may want to consider implementing other measures such as leak detection programs, conservation oriented rate structures, meter replacement, distribution pipe replacement program, etc.

Step 3. Collect source meter data (at least monthly) to evaluate water system usage and effectiveness of your conservation program. **DOH strongly encourages all systems to install, read and record individual service meters.** Systems that have service meters have been shown to use less water than systems with no service meters.

Additional resources *Water Conservation Planning Handbook for Public Water Systems,* Washington Department of Health, Environmental Health Programs, DOH #331-053, November 1991.

Washington State Conservation Planning Requirements, Guidelines and Requirements for Public Water Systems Reguarding Water Use Reporting, Demand Forecasting Methodology, and Conservations Programs, Washington Department of Health, Environmental Health Programs, DOH #331-008, March 1994.

Form 14 - Water Conservation Program

Confirm that you have included, or have committed to develop, the following required components by checking the boxes or filling in the requested information:

Completed Completion Date

_____ To adopt a conservation goal to promote wise and efficient use of water (in system rules, bylaws, etc.)

If you have adopted any other conservation goals (e.g., reduce unaccounted for water, peak instantaneous reduction, peak seasonal demand) Please list these additional goals.

_____
_____
_____
_____

____ To undertake the following conservation education measures:
(Check one or more)
Distribute DOH conservation brochures
(available free from DOH-call (800) 521-0323)
Distribute conservation oriented news articles
Insert conservation information in customer bills
Other _____
_____

____ To start or continue to record monthly source meter data (Form 12) in order to evaluate water system usage and effectiveness of the conservation program.

Element 15

System Component Inventory and Assessment

Element 15 - Component Inventory and Assessment

Purpose

To assess approval status of system facilities and to determine the timing for future improvements.

Background

WAC 246-290-110 and 120 require approval for project reports and construction documents prior to installation or construction of any system facility. WAC 246-290-105 requires water systems to conduct a component inventory and assessment. This assessment should include 1) verification that all system facilities have either an approved project report or construct document and 2) an assessment of each of the system facilities to determine if any parts require replacement in the next six years. DOH recommends that you contact a professional engineer if you have determined that you need to make an improvement. The engineer will guide you through the improvement process.

Instructions For Completing Form 15 (form is on next page)

Step 1- Column 2- System Component Capacity and Cost- Take an inventory of the system components, indicating the physical capacity and write down the replacement cost for each system component in the space provided.

Step 2- Column 3- System Component Approval Date- Write down the approval date for all system components and attach approval letters at end of section (These letters are in your records or in DOH files).

Step 3- Column 5- System Component Age- Write down the age of each system component (from your records or DOH files).

Step 4- Column 6- Life Expectancy- Compare each component's age (Column 5) to the life expectancy provided in the chart (Column 4). Determine if any system component will have to be replaced in the next 6 years. Circle (YES) or (NO) for each system component evaluated. If you circled YES, write down the year you think you will make the improvement in the space provided.

Note: Just because some components are approaching or may even be older than the life expectancy listed, it does not necessarily mean you will have to replace them in the near future. On the other hand, a relatively new component might be causing trouble and you may need to replace it even if it is not near its life expectancy.

The cost figures on the next page are only meant to give you a general idea of the cost of those components. This is especially important for the components that will have to be replaced in the next six years. DOH must stress that the figures provided are for *planning purposes only*. The actual cost of the work may vary greatly from the costs listed.

Additional resources: If you do not know the specifics of your system (e.g., size/capacity of storage tank), contact your DOH regional office to arrange a time to review the system files.

Form 15 – Component Inventory and Assessment

Column 1 Component	Column 2 Size or Capacity and Estimated Cost	Column 3 Approval Date (attach letters)	Column 4 Life Expectancy	Column 5 Age	Column 6 Replace in Next 6 Years?
Well (drilling, casing, sealing, screen, etc.)	6" diameter= $30/ft 8"= $40/ft 10" = $50/ft 12" = $60/ft Other____/ft Well Size($)____ X____Well Depth = Total $		30 Years	_____	___Yes ___ No Year_____
Well Pump (hp=horse power)	1 hp = $1000 3 hp = $1500 5 hp = $2000 7 hp = $2500 10 hp = $4000 20 hp = $7000 Other_____ = Total $		10 Years	_____	___Yes ___ No Year_____
Source Meter	1" = $150 2" = $400 3" = $600 4" = $1000 6" = $2000 # of meters____ X $s per meter_____ = Total $		25 Years	_____	___Yes ___ No Year_____
Control Components (including elec.service, breaker panels, etc.)	The cost of component controls vary depending on level of sophistication- check your cost of original controls $2, 500 $5,000 $10,000 $20,000 Total $		7 Years	_____	___Yes ___ No Year_____
Disinfection Treatment System (tank and pump-without building)	5 gpd = $500 10 gpd = $600 15 gpd = $700 20 gpd = $750 40 gpd = $750 60 gpd = $800 Other_____ NOTE: gpd = gallons per day Total $		20 Years	_____	___Yes ___ No Year_____
Storage	$.75/gallon Number of gallons _____ X $.75 = Total $		50 Years	_____	___Yes ___ No Year_____
Altitude and Pressure Reducing Valves	4" = $1100 6" = $1700 # of valves____ X $'s per valve____ Total $		20 Years	_____	___Yes ___ No Year_____
Pressure Tanks	$2.00/gallon # of gallons _____ X $2.00 = Total $		10 Years	_____	___Yes ___ No Year_____

Form 15 – Component Inventory and Assessment (continued)

Column 1 Component	Column 2 Size or Capacity and Estimated Cost	Column 3 Approval Date (attach letters)	Column 4 Life Expectancy	Column 5 Age	Column 6 Replace in Next 6 Years?
Pressure Tanks	$2.00/gallon # of gallons _____ X $2.00 = Total $		10 Years	_____	___Yes ___ No Year_____
Booster Pumps	1 hp = $300 2 hp = $400 3 hp = $600 5 hp = $800 7.5 hp = $1000 Other_____ # of pumps ____ X $'s per pump____ = Total $		10 Years	_____	___Yes ___ No Year_____
Distribution Pipe Repair (including asphalt repair but no fire hydrants)	PVC 4" =$20/ft 6" =$23/ft 8" =$28/ft 10" =$33/ft 12" = $38/ft Ductile 4"= $23/ft 6"= $25/ft 8"= $30/ft 10"= $35/ft 12"= $40/ft NOTE:All costs include $5/ft for asphalt repair. # of ft_____ X $'s per ft____ = Total $		20 Years	_____	___Yes ___ No Year_____
Service Meters (New and Reconditioned-Assuming Annual Routine Meter Replacement)	5/8" (rebuilt) = $30 5/8" (new) = $60 3/4" (rebuilt) = $45 3/4" (new) = $90 Other _____ = $___ # of meters(Annually)_____X $'s per meter____= Total $		30 Years	_____	___Yes ___ No
Non-facility Improvements (e.g., computers, equipment)			___ Years	_____	___Yes ___ No Year_____

1. The Total System Replacement Cost is the amount needed to replace all of the components of your water system.
   Total System Replacement Cost = Add (Column 2) = $_____ x 1.25 Contingency = $_____

2. Source: Indian Health Service Construction Bid Records. Costs estimated within a planning level of accuracy (±30% and estimated without detailed data specific to water system's needs, availability of services and materials) and based on 1996 dollars. Costs may be higher in specific cases. You should adjust for future costs.

Element 16

List of System Improvements

Element 16 - List of System Improvements

Purpose

To list facility and non-facility improvements identified in Element 15 and to identify the intended financing source of the improvements.

Background

WAC 246-290-105 requires water systems to create a list of system improvements. A list of system improvements contains the description of each project, the project start date, the cost of the project and the financing plan for the project. These items are necessary to successfully build any project.

If you are certain that you are going to make an improvement, DOH recommends that you contact one of the technical assistance providers identified in the front of the guide; they may be able to help you examine your financing options.

Instructions For Completing Form 16 (form is on next page)

Step 1. List the facility improvements taken from the Form 15- Component Inventory and Assessment.

Step 2. List any non-facility improvements (i.e., other than system infrastructure) identified in Element 15 but do not include normal operation and maintenance costs.

Step 3. Identify the year you plan on making the improvement.

Step 4. Copy down the cost (planning level estimate only) of the improvement from the Form 15- List of System Improvements for facility improvements. Estimate the costs of the non-facility improvements.

Step 5. Indicate how the system will finance these improvements.

Step 6. Arrange financing and carry out the improvements on the list.

Your capital improvement program chart will change with time. You may complete certain items earlier than originally scheduled and add or delay other improvements. You should re-examine potential projects and revise your list annually.

Form 16 - List of System Improvements

From the Form 15, column 6, fill in the chart below for the projects you identified that may be necessary over the next six-year period.

List of System Improvements

Item	Year	Cost	Financing method (borrow, surcharge $s, pay as you go, use existing reserves)

Element 17

Budget

Element 17 – Budget

Purpose

To develop a six-year operating budget, to be recalculated annually, that includes financial information about system revenues, expenses and component financing.

Background

WAC 246-290-105 requires water systems to develop an operating budget. All systems must demonstrate that they are and will continue to be financially viable (RCW 70.119A.100). Financial viability is defined as 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 water system should make sure that the revenue it generates meets or exceeds the expense it incurs. To monitor revenues and expenses, a system must develop and use an operating budget.

Note: If the water system budget is combined within a larger budget such as a homeowner's association, the table should be completed by splitting or proportioning out Operating Revenues, System Operating Expenses, etc., that apply to the water system alone.

Instructions For Completing Form 17 (form is on next page)

Step 1. Develop a system budget by filling in the information for each line on the form. If the system has developed a budget in a different format, you can just attach that budget rather than transfer the numbers to the form.

DOH has developed a financial viability manual that will assist in creating a system budget. If you would like additional information about the items in the budget (e.g., what the item is, or how to determine the value of the number to put in the budget) read the Financial Viability Manual referenced below.

Step 2. Update your budget annually with new information. Additional blank forms are available from DOH.

Step 3. Generate system rates (there is a section on how a system can set rates in the Financial Viability Manual referenced below).

Additional resources

Financial Viability Manual-For New and Expanding Small Water Systems, Washington Department of Health, Division of Drinking Water, March 1995.

Form 17 - Six Year Operating Budget

Year	1	2	3	4	5	6
A. Operating Revenues (water rates, fees and service, impact fees, other revenues)						
B. System Operating Expenses (e.g., Salaries & other benefits (inc. contract labor), power costs, equipment, chemicals, monitoring costs, insurance, professional services fees)						
C. Taxes (property, B & O, income)						
D. Debt Payments						
E. Miscellaneous (Training)						
F. Reserve Account						
Operating Reserve (1/8 Line B)						
Emergency Replacement Reserve (cost of well from form 15 (CIAC)						
G. Budget Surplus (A- (B+C+D+E+F))						
H. Capital Improvement Costs						
I. Financing Source						
Grants						
Reserves						
Loans						
User Surcharge						

Revise budget if line G is negative or if the H is greater than line I.

Element 18

System Management

Element 18 - System Management

Purpose
To document current system management practices including decision-making processes.

Background
WAC 246-290-105 requires water systems to identify their system management practices. This form contains several areas where you are to fill in information to describe your system's management practices. DOH may go over your responses to the questions on this form during future sanitary surveys to learn more about your system's management practices.

Instructions for Completing Form 18 (the form is below)

Step 1. Read each of the items below and fill in the information or check the appropriate boxes

Form 18- System Management

Water system name:_____Date_____

1) Type of System Ownership (check all that apply)
___Water Association (home owner association) ___Single private owner
___Local Government (Town, County, PUD, District) ___Partnerships
___Corporation ___Other _____

2) Name of person/parties/association that own the system
_____

3) Existence of written system rules
___Exist ___Do not exist (check one- if they exist, attach at end of guide)

4) Who makes the major decisions for your system (when to make an improvement, decide what method to finance improvements, when to allow additional connections, etc.)
___Single party _____ ___Group of system users
___Board (# of members _____) ___Commissioners (# of members _____)
___Other _____

5) How often do those responsible for making decisions meet?
___Monthly ___Annually
___When necessary ___Other _____

Form 18- System Management (continued)

6) Are all system users notified about these meetings? ___Yes ___No. If so, how are they notified_____

7) Do you mail water bills? ___Yes___ No. If so, how often do you mail out the bills?
___Monthly ___Every two months ___Other _____

8) How do you plan on financing future system improvements? (you can check more than one)
___Reserve account (cash on hand) ___Money borrowed as needed
___System user surcharges/one time fees ___Don't know
___Other_____

9) Does the system have any paid employees? ___Yes ___ No. If so, do you have policies regarding personnel management (salary, benefits, hiring/firing, supervision)?
___Yes___No. If so please attach at end of guide

10) Do you have a system operator?___Yes ___No. If so, if you lose your operator, do you have a plan on how to get another one?
___Yes ___No. If so, explain your process and attach at end of guide
(note: if you are required to have a certified operator and your operator leaves your system's employment, you must get another certified operator to provide service immediately)

11) Do you have a process to record and respond to customer complaints?
___Yes ___No. If so, explain your process and attach at end of document

12) Do you have any insurance policies? Do you have any safety policies?
___Yes ___No. If so, attach at end of document (or reference where they can be found)

13) Identify the party/person responsible for conducting financial transactions (maintaining records, receiving payments, paying bills, etc.) _____

14) Do you keep copies of correspondence to and from DOH and others (labs, Ecology, etc.)?
___Yes ___No. If so, describe how and where the correspondence is kept and attach at end of document. Are these documents/records available to the system users? ___Yes ___No

15) Do you know and are you in contact with other public water systems that are near your system?
___Yes ___No

16) Have any of the preceding 15 questions caused you to think that you may want to change your current practices? If so, list the issue on the To Do form on page 6

SWSMP

Guide
Glossary

SWSMP Guide Glossary

1. Acre-Foot means the amount of water to cover one acre with one foot of water. This amount equals 325,800 gallons.

2. As-built drawings/engineering documents means documents prepared by a professional engineer that identify specifics about construction work that has already been completed (for example, the as-built would confirm the size and location of installed storage tank or distribution system).

3. Calculated Fixed Radius means a circular protective area around your source. The radius of the circle is calculated using a volumetric flow equation.

4. Certified Operator means a person who has met the applicable requirements of chapter 246-292 WAC and holds a valid certificate as a water works operator.

5. Coliform Monitoring Plan means a plan that describes where and when coliform samples are collected from your system.

6. Compliance Action Plan means if a system is out of compliance, DOH may develop a compliance action plan that charts out what the system will have to do to get back into compliance.

7. Cross-connection means any actual or potential physical connection between a public water system or the consumer's water system and any source of non-potable liquid, solid, or gas that could contaminate the potable water supply by backflow.

8. Drinking Water State Revolving Fund (DWSRF) means funds appropriated by Congress to provide seed money for states to create their respective DWSRF. The DWSRF provides loans to water systems to make system improvements.

9. Equivalent Residential Unit (ERU) means a system-specific unit of measure used to express the amount of water consumed by a typical full-time single family residence.

10. Expanding water system means a public water system installing additions, extensions, changes, or alterations to their existing source, transmission, storage, or distribution facilities that will enable the system to increase in size its existing service area and/or its number of approved service connections. Exceptions- a system that connects new approved individual retail or direct service connections onto an existing distribution system within an existing service area; or a distribution system extension in an existing service area identified in a current and approved water system plan or project report.

SWSMP Guide Glossary (continued)

11. Facility Improvements means any type of work to upgrade, renovate, renew, or replace existing system components (such as well pumps, storage tanks, distribution line, etc.) or creating new components.

12. Financial viability means the capability of a water system to obtain sufficient funds to construct, operate, maintain and manage a public water system, on a continuing basis, in full compliance with federal, state, and local requirements.

13. Hydrant means a device, connected to a water main and provided with the necessary valves and outlets, to which a fire hose may be attached for discharging water at a high rate for the purpose of extinguishing fires, washing down streets, or flushing out the water main.

14. In-fill Demand means adding service connections to the existing distribution system.

15. Pressure Zones means an area embraced within the distribution system of a domestic or municipal water supply, in which the pressure in the mains is maintained within certain specified limits.

16. Public water system (PWS) means any system providing water for human consumption through pipes or other constructed conveyances, excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm.

17. Sanitary Control Area means the source water protection area maintained by the purveyor for the purpose of protecting water sources from existing and potential contamination.

18. Sanitary Survey means a review, inspection and assessment of a public water system by the department or department-sanctioned third-party, including but not limited to: source, facilities, equipment, administration and operation, maintenance procedures, monitoring, record keeping, planning documents and schedules, and management practices. The purpose of the survey is to evaluate the adequacy of the water system for producing and distributing safe and adequate drinking water.

19. State Waiver means a "blanket" waiver decision that can be applied across the state or to portions of the state. In these cases, DOH examines the contaminant characteristics and state-wide use information. These waivers differ from VOC and SOC waivers in that they are automatically granted to systems without a waiver application, susceptibility assessment or waiver fee.

SWSMP Guide Glossary (continued)

20. Susceptibility Assessment means the completed Susceptibility Assessment Survey Form developed by the department to evaluate the hydrologic setting of the water source and assess its contribution to the source's overall susceptibility to contamination from surface activities.

21. System Capacity means the system's operational, technical, managerial and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

22. Third Party Sanitary Surveyors means third-party individuals not employed by the Department but sanctioned by the department to review, inspect and assess public water systems by completing sanitary surveys.

23. Total System Buildout means a system is approved for a specified number of connections. Total system buildout is when the system has connected all "approved" services.

24. Unaccounted For Water means the water taken from a source into a distribution system that is not delivered to the consumers or otherwise accounted for.

25. Valve means a device installed in a pipeline to control the magnitude and direction of the flow. It consists essentially of a shell and a disk or plug fitted to the shell. Or, in a pump, valve means passage of a waterway controlled by a mechanism.

26. Water Right Certificate means a certificate issued by the Department of Ecology to certify that water users have the authority to use a specific amount of water under certain conditions. These conditions are based on beneficial use of water under your water right permit. The water right certificate is a legal document recorded at your county auditor's office. The certificate completes the process of obtaining your water right. Once a certificate is issued, no expansion is allowed under the water right.

27. Water Right Claim means a statement of claim to a water use that began before the State Water Codes were adopted and is not covered by a permit or certificate. A claim may represent a valid water right if 1) it describes a surface water use that began before 1917 or a ground water use that began before 1945, 2) a water right claim was filed with the State during an open filing period designated under RCW 90.14 (the Water Right Claim Registration Act), or 3) it is covered by the ground water exemption.

28. Water Right Permit means the state has given the permission to a water right applicant to develop a water right. Water rights are developed when water right applicants follow the provisions outlined in their permit, while using water for the purposes and up to the limits stated in the permit. Water right permits remain in effect, if the terms of the permit are met, until the water right certificate is issued, or the permit has been canceled.

SWSMP Guide Glossary (continued)

29. Water System Plan (WSP) means a comprehensive planning document where a system takes a comprehensive look at all of its needs and creates a plan on how those needs are to be met.

30. Water Treatment means the filtration or conditioning of water to render it acceptable for a specific use.

31. Wellhead Protection Area (WHPA) means the portion of a well's, wellfield's or spring's zone of contribution defined as such using WHPA criteria established by the department.

32. Zone of Contribution means the area surrounding a pumping well or spring that encompasses all areas or features that supply ground water recharge to the well or spring

Reference Documents

List of Additional Reference Documents

Conservation Planning requirements- Guidelines and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs, Washington Department of Health, #331-008, March 1994.

Emergency Planning Instructional Guide, Washington Department of Health, Division of Drinking Water, April 1982.

Financial Viability Manual-For New and Expanding Small Water Systems, Washington Department of Health, Division of Drinking Water, March 1995.

Washington State Wellhead Protection Program Guidance Document, Washington Department of Health, Environmental Health Programs, DOH #331-018, April 1995.

Preparation of a COLIFORM MONITORING PLAN, Washington State Department of Health, Division of Drinking Water, February 1992.

Public Water System Planning Handbook, Washington Department of Health, Division of Drinking Water, December 1997.

Washington State Conservation Planning Requirements, Guidelines and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs, Washington Department of Health, Environmental Health Programs, DOH #331-008, March 1994.

Water Conservation Planning Handbook for Public Water Systems, Washington Department of Health, 91-39, November 1991.

Water Conservation Planning Handbook for Public Water Systems, Washington Department of Health, Environmental Health Programs, DOH #331-053, November 1991.