Revision #	Chapter/Section	Revision Description	Date
23-01	5.2 Staff Certifications	Staff changes happen often - removed all staff current and past to include the only certificates the PUD needs at this time. PUD encourages all our technicians to become certified in WDM and CCS and those that work on treatment the WTPO1	7/19/2023
23-02	5.5 Water Quality Sampling	Added Federal requirements for UMCR testing	7/19/2023
23-03	5.6 Emergency Response Plan	Updated language to include mitigation	7/19/2023
23-04	5.13 Lead Service Line Inventory	Added new chapter on Lead Service Line Inventory	7/19/2023
23-05	Appendix X	Added Example of Lead Service Line Inventory	7/19/2023
23-06	2.10 Climate Change Policy	Added Measures to Reduce Greenhouse Gas Emissions	7/19/2023
23-07	Appendix Y	Added Resolution 10-30 Greenhouse Gasses Policy	7/19/2023
23-08	Contents	Updated to include new chapters and page numbers	7/19/2023
23-09	Appendix R - CCCP and Resolution	Updated Cross Connection Control Plan and Resolution 05-15 to Resolution 23-31. Mostly removing language about Local Administrative Authority, which no longer is applicable.	7/19/2023
23-10	4.2 Capital Improvement Plans	Added language on how the plan is updated and approved by Commissioners on a annual basis or as needed.	7/20/2023
23-11	Appendix L	Replaced 2020 CIP with 2023 CIP	7/20/2023

Chapter 5
Operations and Maintenance Program

5.1 Water System Management

The Director of Field Operations (DFO) is responsible for the daily field operations, including maintenance, emergencies, replacement of ageing infrastructure, water quality and meter reading. The field staff are able to perform all tasks required to operate water systems, but most have specific daily tasks, including water quality and testing, treatment operations and maintenance, landscaping and building maintenance, leak detection and repair, system maintenance and repair, meter reading, and project management.

The Director of Planning and Compliance (DPC) is responsible for the administrative, planning, and support for field operations, and ensures that all technical and regulatory requirements are met for all District's water systems. This team is supported by Operation Specialists and an Administrative Assistant that work with the field staff to maintain programs like the cross-connection control, annual compliance testing, fire hydrant maintenance, maintaining records, and preparing compliance documents like Water Use Efficiency and Consumer Confidence Reports.

In Chapter 1, Figure 1.1 (K:/Personnel/Org Chart) provides an overview of the structure of the utility and the organization chart of management.

5.2 Staff Certifications

Field staff certifications and licenses, as of May 2020, are shown in Table 5-1.

Table 5-1
Thurston PUD Staff Certifications

Name	Years' Experience	Position	Certification Level	Certification #
James Campbell	17	Director Field Operations	WDM2, CCS, WTPO1, L&I Electrician, Plumber	10679
Kim Gubbe	23	Director Planning & Compliance	WDM2, CCS, WTPO2	7314
~~Dan Lovell~~	~~16~~	~~Project Management Specialist I~~	~~WDM3, CCS, WTPO1 L&I Electrician, Plumber~~	~~10852~~
~~Richard Sanchez~~	~~16~~	~~Field Technician II~~	~~L&I Electrician, Plumber~~	
~~Robert (Kirk) Gietz~~	~~13~~	~~Field Technician II~~	~~WDM1~~	~~11586~~
~~Jason Choate~~	~~12~~	~~Field Technician II~~	~~WDM1, CCS, BAT L&I Electrician, Plumber~~	~~11839 B5051~~
~~Jacob Boogerd~~	~~8~~	~~Field Technician II~~	~~WDM1 Electrician, Plumber Trainee~~	~~13853~~
~~Justin Kadoun~~	~~4~~	~~Field Technician I~~	~~WDM1~~	~~14725~~

~~Joseph Greene~~	~~4~~	~~Field Technician I~~	~~WDM1~~	~~14721~~
~~Anthony Dahmen~~	~~4~~	~~Field Technician I~~	~~WDM1~~	~~14803~~
~~Derek Genre~~	~~24~~	~~Field Technician I~~	~~WDM1~~	~~14805~~
~~Richard Holmes~~	~~3~~	~~Field Technician II~~ ~~Meter Reader II~~	~~WDM1~~	~~14342~~

Notes: WDM = Water Distribution Manager, CCS = Cross Connection Control Specialist, WTPO = Water Treatment Plant Operator

Pursuant to DOH regulations, the District must have, at a minimum, ~~one~~ two Water Distribution Manager 2 (WDM2) and Water Treatment Plant Operator 1 (WTPO1) on staff at all times. In the event of non-compliance, DOH will be notified as soon as possible and the District will either immediately hire an operator with the proper certificates, or contract with an approved SMA to establish compliance.

5.3 O&M Service Areas

The District's ~~275~~ 279 systems are split into three O&M service areas: North, South, and Central. Each route is assigned to a Field Technician I. If the assigned technician cannot complete the route, other field staff members will assist at the discretion of the Director of Field Operations.

5.4 Routine and Preventative Maintenance Activities

The routine and preventative maintenance activities include, but are not limited to, the following tasks:

- Treatment of source water, disinfection, and water quality monitoring;
- Regular pump house checks to visually inspect water system facilities and provide security checks;
- Preventative maintenance of the wells, reservoirs, booster stations, pressure reducing valves, and treatment equipment;
- Preventative maintenance of the distribution system, including the flushing, valve and hydrant program;
- Routine maintenance of the distribution system and facilities, including repairs and replacements;
- Distribution system leak detection;
- Emergency work, including main breaks, customer complaints, and facility failures;
- Construction management and inspection support on water system projects;
- Water production reporting; and
- Utility locates.

5.4.1 Routine Maintenance Schedules

The District has established routine operations and maintenance procedures and schedules. Table 5-2 provides a summary of these activities. **Appendix M** contains the Group A and Group B routine maintenance checklist templates. Also enclosed in the appendix are pump

house and storage checklists, which are specific items, listed in Table 5-2, scheduled for completion on a routine basis.

Table 5-2
Thurston PUD Routine Maintenance Schedules

Group A Systems	Group B Systems
Weekly	***Weekly***
Treatment system checked	Treatment system checked
Monthly	***Monthly***
Check system pressure	Read source meter
Check for leaks	***Quarterly***
Booster pump check (noise, overheating, etc.)	Check system pressure gauges
Well pump check (noise)	Check for leaks
Bladder tanks checked for air/water ratio	Booster pump check (noise, overheating, etc.)
Hydropneumatic tanks for air/water ratio	Well pump check (noise)
Read source meter	Bladder tanks checked for air/water ratio
Air compressor – drain water	Hydropneumatic tanks for air/water ratio
Quarterly	Pumphouse checklist – complete
Flushing as needed	Flushing as needed
	Check production of well
Check production of well	Check pressure switch on/off
Check pressure switch on/off	***Annually***
	Check electrical draw of well pump
	Check air in pressure tanks
	Exercise distribution valves
Annually	Hydrant flushing & repairs
Pumphouse checklist – complete Check electrical draw of well pump	Exercise pumphouse valves
Check air in pressure tanks	Storage checklist – complete
Exercise distribution valves	Check air compressor filter, oil & belt
Exercise pumphouse valves Storage checklist – complete Hydrant flushing & repairs as needed	Production of well
Check air compressor filter, oil & belt	Maintenance on chlorine pumps
Maintenance on chlorine pumps	***Every Five to Seven Years***
Every Five to Seven Years	Reservoir inspecting and cleaning
Reservoir inspecting and cleaning	

5.4.2 Operation and Maintenance Procedures

Detailed Operation and Maintenance Procedures can be found in **Appendix N**:

- Chlorination O&M Procedures
- Ultraviolet (UV) O&M Procedures
- Corrosion Control O&M Procedures
- Bag Filters O&M Procedures

- Iron and Manganese Treatment
- Flushing O&M Procedures
- Hydrant O&M Procedures
- Distribution Valve O&M Procedures
- Service Requests

5.5 Water Quality Sampling

Water quality sampling and testing is conducted in accordance with Federal, DOH or local health department requirements. Department of Health's Water Quality Monitoring Schedule is used annually to determine what sampling is required for each year. Monitoring plans have been created for each system for coliform, lead and copper and disinfection by-products. Examples are included in **Appendix O.** The individual monitoring plans are included in Part B water system plans.

If any water quality testing exceeds the standards set forth in WAC 246-290-310, the DOH will be notified immediately. The District will contact the appropriate DOH regional office for Group A systems or the appropriate county authority for Group B systems. Response plans for each agency can be found in the Emergency Response Plan in **Appendix P**.

When Level 1 or 2 Assessments are required, the DFO will be responsible for completing the assessments and submitting to appropriate DOH office by the 30-day deadline. The DOF will also be responsible for all corrective action to be completed by approved deadlines.

Systems serving over 3,300 are subject to the EPA's requirements of the Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) and sampling will be conducted per EPA's schedule found on the CDX/SDWARDS 5 database.

5.6 Emergency Response Planning and Mitigation

The District's Emergency Response Plan (ERP) is provided in its entirety as **Appendix P**. The ERP contains emergency contact lists, a priority service customer list, DOH and public notification procedures, response procedures tailored to various emergency situations, and contingency plans.

Often the District will fall under an other lead entity for incident command control. However, w~~W~~hen an emergency occurs, the General Manager will determine the best staff member to be lead and manage the situation, called an incident commander. The incident commander will build a team to manage the event. The General Manager will always be the Commander, but the District has found that each emergency can require a different level of experience to manage the event. In the past, the Director of Planning and Compliance has taken lead on E.coli events and currently the Assistant General Manager and the Director of Planning and Compliance are the~~Administrative Services Manager is~~ the lead for the emergency and disaster planning and response including pandemic crises.

The District's most central mission is to provide safe drinking water to our customers at all times, including during emergencies. Safe drinking water and water for sanitation is the single most fundamental element of public health and safety during emergency situations. Ongoing measures to mitigate impacts of local or regional emergencies to drinking water availability include:

- Reservoir seismic valve installation: the District has been installing seismic early warning and detection sensors and automatic response systems on our largest and regionally most important water storage reservoirs. When seismic activity is detected the response systems respond by alerting PUD management and automatically closing valves to reduce outflow from reservoirs. This preserves water in storage reservoirs for potable and fire fighting use in the case of water main breakage during the seismic event.
- Backup power: The District has installed backup power at key facilities of regional importance to enable ongoing potable and fire flow service during power outages and local or regional disasters. Backup power generation is fueled by onsite liquid propane gas and is not vulnerable to natural gas outages and main breaks during seismic or other emergency events. Onsite storage is designed for 2 weeks typical operation, which may be significantly extended during larger scale emergencies by reduced water use and active management measures.
- Headquarters building emergency response hub: The District has outfitted the PUD headquarters building to serve as the District's emergency response operations center during regional emergencies. This includes provisions for sustained operation during extended power failures, as well as for the maintenance of staff for extended emergencies. The District has conducted a seismic review of the headquarters building and is considering funding for further analysis and potential seismic upgrades.
- Emergency manual operation well pumps: The district has installed a manually operated well pump at our headquarters building and is exploring funding to make manually operated well pumps available at all group A water systems. Manually operated pumps can be installed in the same well as a standard submersible well pump and are a cost effective means to allow communities to access groundwater for domestic use during emergencies of extended duration.
- Emergency water sanitization: The District is exploring funding opportunities to provide emergency sanitization kits at all group A water systems. Kits consist of shelf stable powdered calcium hypochlorite disinfectant, along with mixing equipment and detailed directions. Calcium hypochlorite is a very cost-effective means of properly sanitizing drinking water and can readily provide sufficient disinfection for one year domestic consumption (1-2 gpd/person). Sanitization can be used with nearly any water source, including water retained in reservoirs by seismic response systems or manually pumped well water. Public training on use will be made available.
- Liquid sodium hypochlorite generation: Sodium Hypochlorite is a commonly used disinfectant which is utilized by about 30% of the District's water systems. Following a nationwide sodium hypochlorite shortage in 2021 and the possibility of future shortages (especially following implementation of proposed EPA rule RIN 2070-AK86) The

District is pursuing construction of a small onsite sodium hypochlorite generator to help mitigate the most significant impacts of future shortages.

- Remote monitoring: The District has been pilot testing remote monitoring equipment and is seeking funding to extend remote monitoring to a wider range of the District's water system locations. Remote monitoring uses a low-cost telemetry system to monitor and record system pressures and flow rates, reservoir levels, disinfectant levels, power supply, pump faults, unauthorized entry, and other parameters. District staff are able to remotely access current status and historical data and trends, as well as receive emergency alerts for out of specification parameters. This improves District operations on a day to day basis, allows the District to more rapidly detect and respond to minor failures and emergencies, and allows the district to most effectively allocate personnel resources and respond to regional emergency situations.
- Wildfire Preparation: Removal of trees and brush adjacent to District facilities in areas of elevated wildfire danger. Retrofit wood frame structures in areas of elevated wildfire danger with fiber cement siding and steel roofing or other fire-resistant materials.
- Water Trees: The District has been building water trees to provide access to drinking water during an emergency or disaster at selected water systems with reservoirs expected to be still standing after an major earthquake. We will be deploying these water trees, training citizens how to use them and prepositioning them at water systems. This concept has been discussed with the Thurston County Emergency Management Department and funding has been requested. Our initial deployment by 2024 is estimated to be 12 water trees.

The District currently has a Hazard Mitigation Plan approved as a supplement to Thurston County's Approved Plan. The District is working to update the Thurston County Plan that include the initiatives above and should be approved in 2024. The District is also working with Pierce and Lewis County to submit as a supplement to plans they are currently working on.

5.7 Water Shortage Response Plan

In addition to the continual water use efficiency strategies listed above, the District has a Water Shortage Response Plan that addresses water use efficiency and curtailment in the event of a water supply shortage. The Water Shortage Response Plan strategies are intended to be used only for the duration of the water shortage event.

The Water Shortage Response Plan addresses water use efficiency strategies and curtailment measures to be implemented at various stages based on the severity of water supply shortage. The plan also states that the District will be responsible for identifying the trigger point for implementation of each stage. The following four stages are identified in the Water Shortage Response Plan, which is included in **Appendix Q**.

- Stage 1, Voluntary Water Use Efficiency – This includes public outreach activities and

program promotion to encourage voluntary water use efficiency by the consumer.

- Stage 2, Outdoor Restrictions – This stage includes various strategies to reduce outdoor water use, such as encouraging water efficient devices and compliance with alternating days for outdoor watering.

- Stage 3, Mandatory Outdoor Restrictions and Indoor Water Use Efficiency – This stage includes prohibiting outdoor use with consequences for violators. Consumers are also asked to reduce indoor water use.

- Stage 4, Water Rationing – This stage is intended to ration a limited supply of water so as to serve only essential uses.

5.8 Cross Connection Control Program

The purpose of a Cross Connection Control Program (CCCP) is to protect a public water system from contamination due to existing or potential cross connections. The District has developed and implemented a comprehensive CCCP that establishes cross connection control policies, program guidelines, and requirements for installation, testing, and maintenance of approved backflow prevention assemblies. The CCCP is provided in **Appendix R**.

The District's CCCP has been developed according to WAC 246-290-490 Cross Connection Control of the Group A Drinking Water Regulations. The District's CCCP objectives are to:

- Reasonably reduce the risk of contamination of the public water distribution system; and
- Reasonably reduce the District's exposure to legal liability arising from the backflow of any contaminant originating from the customer's plumbing system and then supplied to other customers.

To meet these objectives, the program addresses the following minimum required elements:

- Establishment of legal authority and program policies;
- Evaluation of premises for cross-connection hazards;
- Elimination and/or control of cross connections;
- Provision of qualified personnel;
- Inspection and testing of backflow preventers;
- Quality control of testing process;
- Response to backflow incidents;
- Public education for consumers;
- Record keeping for CCCP; and
- Special requirements for reclaimed water use.

In addition, the District's CCCP addresses:

- Coordination with the Local Administrative Authority (LAA), i.e., the local building or plumbing official regarding CCCP activities; and
- Prohibition of the return of used water into the public water system distribution system.

5.9 Record Keeping and Reporting

5.9.1 Record Keeping

Thurston PUD maintains, at a minimum, the following records in digital or hard copy format for the specified time period in accordance with:

- 40 CFR 141.33 – Record Maintenance
- WAC 246-290-480 – Recordkeeping and Reporting
- WAC 246-290-485 – Recordkeeping and Reporting for Groundwater Systems
- Secretary of State (SOS) Utility Services Records Retention Schedule

Certain records have multiple retention schedules based on which source of information is being referenced. In these instances, Thurston PUD adopts the longer of the retention schedules. In addition, the Disposition Authority Number (DAN) needed to identify SOS destruction protocol is listed where applicable. Types of records are listed in **Appendix S**.

5.9.2 Reporting

Thurston PUD notifies customers and appropriate agencies in accordance with federal, state and local requirements including, but not limited to, the following:

- 40 CFR Subpart D – Reporting and Recordkeeping
- 40 CFR Subpart Q – Public Notification of Drinking Water Violations
- WAC 246-290-480 – Recordkeeping and Reporting
- WAC 246-290-485 – Recordkeeping and Reporting for Groundwater Systems
- WAC 246-290-490 – Cross-Connection Control
- WAC 246-290-840 – Water Use Efficiency Performance Reports
- WAC 246-290 Part 7 – Reporting
- WAC 246-291-360 – Public Notification for Group B Systems

Types of reports and the allowable time to submit are listed in **Appendix S**.

5.10 Customer Complaint Response Procedures

The following procedures are taken when the District receives a complaint from a customer:

- Customer calls into the office and a representative takes the complaint over the phone or in person. After-hour emergency calls go to a third-party call center, that is then relayed to the District's 24/7 on-call staff.
- Complaints are entered as service requests and emailed to the PUD Field Technician group, escalated to the Customer Service Manager as needed, or routed to the appropriate department manager.
- If the complaint is related to a physical issue within the water system, the Director of Field Operations ensures the complaint is directed to the appropriate field staff based on importance and personnel available in the location of the problem. Almost all other complaints are related to billing and handled over the phone or in person. Billing related complaints are documented in the customer's account without the need of a service order. All other complaints are routed to the appropriate department manager or to the General Manager.
- When service requests are completed, the field technician's notes are emailed to the Customer Service Department and are entered into Springbrook (the District's customer database and billing software). After the notes are entered, customer service closes the Service Order.
- The email containing the field technician's notes is stored within the *Service Request- E-mailed* subfolder in the PUDCustomerService inbox. In addition, the notes are retained within Springbrook which is backed up by Thurston County's IT Department.
- The type and number of complaints are reported quarterly to the Board of Commissioners.

5.11 Design Standards and Construction Specifications

The District's design standards and construction specifications (subject to modification and update by the District as necessary) are included in the Policies and Procedures Manual (see **Appendix C**). These standards apply to rural water systems located outside of urban growth area (UGA) boundaries.

For new systems located within a UGA boundary, the District will coordinate with the appropriate local jurisdiction for system design standards. For existing systems within a UGA boundary, the District will also coordinate with the appropriate jurisdiction for system design standards relating to any facility replacement or upgrades. For water systems located in Pierce County, Pierce County Coordinated Water System Plan regulations must be followed, including Pierce County Chapter 17C.60.165 (fire flow) and Chapter 19D.130 (design standards).

5.12 Contract O&M Services

The District is capable of providing contract O&M services. A model contract for such services is provided as **Appendix T**. As of May 2020, the District is not providing these services unless the owner of the water system is looking to be acquired by the District.

5.13 Lead Service Line Inventory

On January 15, 2021, the U.S. Environmental Protection Agency (EPA) issued Lead and Copper Rule Revisions (LCRR) that went into effect on December 16, 2021. Group A Community water systems are required to follow the LCRR, which is located in 40 CFR 141. At the same time, EPA announced that it was going to begin new rulemaking to update these same requirements, which they identified as the Lead and Copper Rule Improvements (LCRI). The part of the LCRR not expected to change in the LCRI are the requirements relating to the Lead Service Line Inventory or LSLI. All other requirements of the LCRR are subject to change under the LCRI.

While EPA works on the LCRI, water systems need to develop and submit a Lead Service Line Inventory (LSLI) by October 16, 2024; while continuing to comply with the prior version of the Lead and Copper Rule.

The District's Planning and Compliance Staff has started working on these inventories that include the pipe material for each, Group A, service line that has been installed. The District must determine the pipe material, not only for our side of the meter, but also the customer side to the foundation to the home.

The District is systematically completing the inventories by using this type of research:

- Date system distribution system was built
- Date home was built
- As-Builts
- Previous work completed on the system

The District is looking at what date the systems were built and/or the home. If water system and homes were built after Congress amended the Clean Water Act in 1986, which banned lead in drinking water pipes, we believe no other research is needed for these service lines.

If the system was built before 1986 then we need to conduct more research which may include:

- Customer request for information
- Field inspection
    - Digging up each side for visually inspection
- Sampling – need DOH approval
- Predictive models– need DOH approval

The District will be completing the systems in this order:

- Sanitary Survey's for 2023

- Systems built after 1986
- Sanitary Survey's for 2024 which includes Tanglewilde
- Prepare plan on how to complete larger and older systems
- Smaller systems built before 1986
- Larger systems built after 1986

See example of Lead Service Line Inventory in **Appendix X.**

PWS Information

Purpose of this worksheet: *For water systems to document basic system information.*

Facility Information			
Water System Name:			
Riverlea 692			
PWSID:	Population Served (number of people):	Number of Service Connections:	PWS Type:
72817	**132**	**49**	☑ CWS ☐ NTNCWS
If you are a CWS, do multi-family residences comprise at least 20% of the structures you serve?			*Select "Yes" or "No"*
Mailing Address			
Street or P.O. Box:			
1230 Ruddell Rd SE			
City or Town:		State:	Zip Code:
Lacey		**WA**	**98503**
System Contact Person			
Name:		Title:	
Kim Gubbe		**Director of Planning and Compliance**	
Telephone:		Email:	
360-357-8783 ext. 125		k_gubbe@yahoo.com	
Person Who Prepared Inventory (if different from above)			
Name:		Title/Affiliation:	
Telephone:		Email:	

Inventory Methodology

PWS Name: Riverlea 692	PWSID: 72817
Enter Date Last Updated:	**05/05/23**

Purpose of this worksheet: *For water systems to document the methods and resources they used to develop and update their inventory.*

Part 1: Historical Records Review

Type of Record	Describe the Records Reviewed for Your Inventory and Indicate Your Level of Confidence (*e.g.* , Low, Medium, or High)
1. Previous Materials Evaluation *Example: Locations of Tier 1 lead tap sampling locations that are served by a lead service line.*	Field Staff had repaired many lateral service lines and all have been pvc or poly lines
2. Construction Records and Plumbing Codes *Examples: Local ordinance adopting an international plumbing code. Permits for replacing lead service lines.*	Thurston County Assessor Website - Year Home was Built
3. Water System Records *Examples: Capital improvement plans. Standard operating procedures. Engineering standards.*	Water System Plans
4. Distribution System Inspections and Records Examples: *Distribution system maps. Tap cards. Service line repair/replacement records. Inspection records. Meter installation records.*	Will need to conduct inspections on customer service lines
5. Additional Records Required by Your State	
6. Other Records	

Part 2: Identifying Service Line Material During Normal Operations

1. During which normal operating activities are you collecting information on service line material? Check all that apply.

- ☐ Water meter reading
- ☐ Water meter repair or replacement
- ☑ Service line repair or replacement
- ☑ Water main repair or replacement
- ☐ Backflow prevention device inspection
- ☐ Other

If "Other", please explain:

2. Did you develop or revise standard operating procedures to collect service line material information during normal operation? *Yes*

If "Yes", please describe:

We revised our standard operating procedures to collect service line material information (type and size) for both before meter and after and adding to our billing system.

Part 3: Service Line Investigations

1. Identify the service line investigation methods your system used to prepare the inventory (check all that apply). If a water system chooses an investigation method not specified by the state under 40 CFR §141.84(a)(3)(iv), state approval is required. ***Note that investigations are not required by the LCRR but can be used by systems to assess accuracy of historical records and gather information when service line material is unknown.***

- ☑ Visual Inspection at the Meter Pit
- ☐ Customer Self-Identification
- ☐ CCTV Inspection at Curb Box - External
- ☐ CCTV Inspection at Curb Box - Internal
- ☐ Water Quality Sampling - Targeted
- ☐ Water Quality Sampling - Flushed
- ☐ Water Quality sampling - Sequential
- ☐ Water Quality Sampling - Other
- ☐ Mechanical Excavation
- ☐ Vacuum Excavation
- ☐ Predictive Modeling
- ☐ Other

If "Other", please explain:

2. If "Predictive Modeling", please briefly describe the model and inputs used:

3. How did you prioritize locations for service line materials investigations? For example, did you consider environmental justice and/or sensitive populations, did you use predictive modeling, and/or did you target areas with high number of unknowns?

Inventory Summary

PWS Name: Riverlea 692	PWSID: 72817	System was Built 1976
Enter Date Last Updated:	**05/05/23**	

Purpose of this worksheet: *For water systems to provide a summary of their service line inventory, including information on ownership, inventory format, and the number of service lines for each of the four required materials classifications.*

Part 1. General Information

1. Is this the **Initial Inventory** or an **Inventory Update**?	*Initial Inventory*
2a. Who **owns the service lines** in your system? *If other, please explain below.*	*Ownership is split, meaning that the system owns and portion and the customer owns a portion*
2b. Is there documentation that defines service line ownership in your system, such as a local ordinance? *If yes, please describe below and explain where ownership is split (e.g., property line, curb stop).*	*Yes*

3a. Describe when lead service lines were generally installed in your system.

Never

3b. When were lead service lines banned in your system? Reference the state or local ordinance that banned the use of lead in your system.

Federal Safe Drinking Act 1986

4. Do you have lead goosenecks, pigtails or connectors in your system?	*No*

5. What is your overall level of confidence in the inventory (*i.e.* , "Low", "Medium", or "High.") Please explain your rationale below.

High

Part 2. Inventory Format

Describe your inventory format in the space provided below (*e.g.* , the **Detailed Inventory** worksheet, custom spreadsheet, GIS map). Provide the filename and/or web address if applicable. ***Note that the state may require you to submit your detailed inventory of each service line in your distribution system.***

Riverlea 692 72817 Lead Service Line Inventory

Part 3. Inventory Summary Table [1]

If you are using the ***Detailed Inventory*** *worksheet, the classifications you select in the Column "Entire Service Line Material Classification" (Column X) will be used to calculate the total number of service lines for each of the four material classifications below. Otherwise, enter the number of service lines in the aqua-colored cells.* ***Remember this is the classification for the entire service line.***

Service Line Material Classification	Definition	Total Number of Service Lines (REQUIRED to be reported under the LCRR)
Lead	Any portion of the service line is known to be made of lead.[2]	0
Galvanized Requiring Replacement (GRR)	The service line is not made of lead, but a portion is galvanized and the system is unable to demonstrate that the galvanized line was never downstream of a lead service line.	0
Non-Lead	All portions of the service line are known NOT to be lead or GRR through an evidence-based record, method, or technique.	10
Lead Status Unknown	The service line material is not known to be lead or GRR. For the entire service line or a portion of it (in cases of split ownership), there is not enough evidence to support material classification.	39
	TOTAL	49

Notes

[1] This summary table is for reporting material for the entire service line connecting the water main to the customer's plumbing. See the **Classifying SLs** worksheet for additional guidance on assigning a materials classification to the entire service line when ownership is split. Remember that systems must track the system-owned and customer-owned portions separately in their inventory.

[2] A lead-lined galvanized service line is consistent with the definition of an LSL under the LCRR ("a portion of pipe that is made of lead, which connects the water main to the building inlet") (40 CFR §141.2) and must therefore be classified in the inventory as an LSL. Do NOT, however, count non-lead service lines with a lead gooseneck or pigtail as lead service lines unless required by your state.

Detailed Inventory

PWS Name: Riverlea 692 — System was Built 1976

PWSID: 72817

Date Last Updated: 5/5/2023

Unique Service Line ID	Street Address	Property Tax ID	System-Owned Portion Service Line Material Classification	Service Line Installation Date	Basis of Material Classification	Customer-Owned Portion Service Line Material Classification	Service Line Installation Date	Entire Service Line Material Classification
12192	2823 MCGILL CT SE	70830002100	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1979*	Unknown
12194	2804 RIVERLEA DR SE	70830003900	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1977*	Unknown
12195	2718 RIVERLEA DR SE	70830003500	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1988*	Unknown
12196	2712 RIVERLEA DR SE	70830001700	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1990*	Non-Lead
12197	2737 SIENNA DR SE	70830001600	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1979*	Unknown
12200	2917 SIENNA DR SE	70820000700	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12201	2912 SIENNA DR SE	70820002400	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12202	3003 RIVERLEA DR SE	70820000500	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12203	3006 RIVERLEA CT SE	70820005000	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1975*	Unknown
12205	3018 RIVERLEA DR SE	70820005500	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
12207	3007 RIVERLEA DR SE	70820000400	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12209	2914 RIVERLEA DR SE	70820004700	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12210	2915 RIVERLEA DR SE	70820002600	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12211	2911 RIVERLEA DR SE	70830002700	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
12212	2910 RIVERLEA DR SE	70830004600	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1986*	Unknown
12213	2907 RIVERLEA DR SE	70830002800	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
12214	2903 RIVERLEA DR SE	70830002900	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1979*	Unknown
12215	2810 RIVERLEA DR SE	70830004100	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1994*	Non-Lead
12216	2909 SIENNA DR SE	70820000900	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1994*	Non-Lead
12316	2820 RIVERLEA DR SE	70830004300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12318	2735 RIVERLEA DR SE	70830003800	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1983*	Unknown
12402	2729 RIVERLEA DR SE	70830003700	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*2001*	Non-Lead
14070	2809 SIENNA DR SE	70830001400	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1979*	Unknown
14078	2825 SIENNA DR SE	70830001100	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1991*	Non-Lead
14155	2905 SIENNA DR SE	70820001000	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1977*	Unknown
14164	2904 SIENNA DR SE	70820002200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
14670	2908 SIENNA DR SE	70820002300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
14673	2921 SIENNA DR SE	70820000600	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
14676	3008 RIVERLEA CT SE	70820005100	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1975*	Unknown
14683	3014 RIVERLEA CT SE	70820005400	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1985*	Unknown
14766	3015 RIVERLEA DR SE	70820000300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
14871	3022 RIVERLEA DR SE	70820000100	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1992*	Non-Lead
14872	2817 SIENNA DR SE	70830001300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1992*	Non-Lead
14910	2913 SIENNA DR SE	70820000800	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1993*	Non-Lead
14915	2819 MCGILL CT SE	70830002000	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1979*	Unknown
14916	2922 RIVERLEA DR	70820004900	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1998*	Unknown
15213	2811 MCGILL CT SE	70830003200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
15375	2807 RIVERLEA DR SE	70830003300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1977*	Unknown
15897	2808 RIVERLEA DR SE	70830004000	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1983*	Unknown
14679	3010 RIVERLEA CT SE	70820005200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
14681	2831 RIVERLEA DR SE	70830003000	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
12408	2723 RIVERLEA DR SE	70830003600	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1977*	Unknown
14907	2818 RIVERLEA DR SE	70830004200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1978*	Unknown
12208	2918 RIVERLEA DR SE	70820004800	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1975*	Unknown
14857	2906 RIVERLEA DR SE	70830004500	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
14911	2805 SIENNA DR SE	70830001500	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1994*	Non-Lead
12198	2821 SIENNA DR SE	70830001200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Non-Lead - Other*	*1991*	Non-Lead
12206	3019 RIVERLEA DR SE	70820000200	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown
12204	3012 RIVERLEA CT SE	70820005300	*Non-Lead - Plastic*	1976	*Installation record (e.g., tap card)*	*Unknown - Unlikely Lead*	*1976*	Unknown

Public Accessibility Documentation

PWS Name: Riverlea 692
PWSID: 72817

Enter Date Last Updated: 5/5/2023

Purpose of this worksheet: For systems to provide documentation to states on how they met the public accessibility requirements of the LCRR.

1. Select the location identifiers that you use for your service line inventory. Check all that apply.

- ☐ Address
- ☐ Street
- ☐ Block
- ☐ Intersection
- ☐ Landmark
- ☐ GPS Coordinates
- ☑ Other

If "Other", please describe:

Unique Lot Number

2. Does ***every service line*** have a location identifier? *Yes*

If "No", explain. Remember that location identifiers are required for service lines that are lead and galvanized requiring replacement.

3. How are you making your inventory publicly accessible? Check all that apply. *Remember that if your system serves > 50,000 people, you* ***must*** *provide the inventory online.*

- ☐ Interactive online map
- ☐ Static online map
- ☐ Online spreadsheet
- ☐ Printed service line map
- ☐ Printed tabular data
- ☐ Information on water utility mailings or newsletter
- ☑ Hard copy information available in water system office
- ☐ Other

If "Other", please describe:

State Checklist for Initial Inventory Submittal

PWS Name: Riverlea 692
PWSID: 72817

Enter Date Last Updated: 5/5/2023

Purpose of this worksheet: *For states to determine and document if water systems met all of the January 15, 2021 Lead and Copper Rule (LCRR) requirements for their* **Initial Inventory** *including timely submission, required elements, use of information sources, public accessibility, and public notification of service line materials.*

Part 1: Person Completing This Checklist

Name:	Title:
Kim Gubbe	**Director of Planning and Compliance**
Telephone:	Email:
360-357-8783 ext. 125	kgubbe@thurstonpud.org

Part 2: Review for Timely Submission

1. Was the initial inventory submitted by the deadline of October 16, 2024? *Yes*

Consider post-mark or date sent via email or reported into a state data system.

Part 3: Review for Required Elements

1. Does the inventory include ***all*** service lines connected to the distribution system? *Yes*

Consider if the total number of service lines in the ***Inventory Summary*** *worksheet, Part 3, matches sanitary survey and monitoring data in the state's database (e.g., SDWIS /State) based on population served, number of service connections (including those for non-potable use), number of accounts, census data, or other information.*

2. Does the inventory include portions owned by the water system and the customer? *Yes*

Check the service line ownership type selected in the ***Inventory Summary*** *worksheet, Part 1, Question 2a. If the system selected "Ownership is Split" check that their inventory includes information for both the system-owned and customer-owned portions.*

3. Did the system classify all service lines as either Lead, Galvanized Requiring Replacement (GRR), Non-Lead, or Lead Status Unknown? *Yes*

Consider if the system completed each row of the inventory summary table in the ***Inventory Summary*** *worksheet, Part 3. Some rows may be zero.*

4. In the space below, provide additional comments/documentation related to required elements of the system's initial inventory.

Part 4: Review for Information Sources

1. Did the system use the following historical records to prepare their initial inventory: previous materials evaluation, construction and plumbing codes/records, water system records, distribution system inspections and records. *Yes*

Consider if the system identified historical records in each row of the ***Inventory Methods*** *worksheet, Part 1, Rows 1 through 4. Consider if the system completed Row 5 if additional records are required in your state.*

2. Is the system collecting service line material information during normal operations? *Yes*

Consider if the system checked one or more normal operations activities in the ***Inventory Methods*** *worksheet, Part 2. Consider asking the systems to submit updated or new standard operating procedures documenting service line material information collection.*

3. Has the system conducted investigations to verify service line material? *Yes*

This is not required by the LCRR but recommended by EPA to verify historical records and gather information where records do not exist to reduce the number of unknowns in the system as quickly as possible. Consider:

- *If the system checked one or more of the investigative methods on the* ***Inventory Methods*** *worksheet, Part 3.*
- *If in their inventory, the system indicated that the materials classification was based on investigations.*
- *The number of unknowns - EPA strongly discourages systems from submitting inventories with all unknowns. If all service line materials are lead status unknown, consider asking the water system to conduct investigations.*

4. In the space below, provide additional comments related to information sources used to develop the system's initial inventory.

The system was metered in 2022. We visually inspected each service line material on both sides of the meter.

Part 5: Review for Public Accessibility	
1. Does the inventory include location identifiers for each service line that is lead or galvanized requiring replacement? *Consider checking the inventory for location identifiers and reviewing the system's answers in the **Public Accessibility Doc.** worksheet, Questions 1 and 2.*	*Yes*
2. Did the system make its inventory publicly accessible? *Consider reviewing the method by which the water system is making its inventory publicly accessible as identified in the **Public Accessibility Doc.** worksheet, Question 3. Check that systems serving more than 50,000 people have posted their service line inventories online.*	*Yes*
3. In the space below, provide additional comments/documentation related to public accessibility of the system's initial inventory. **We will make the inventory accessible to the public in 2024**	

Part 6: Review of Customer Notification of Service Line Material	
1. Does the water system's inventory consist of all Non-Lead Service lines? *If No, complete questions 2 through 5. If Yes, stop here.*	*Select "Yes" or "No"*
2. Did the water system deliver the notification to people served by a lead service line (LSL), GRR, or lead status unknown service line within 30 days of completing the initial inventory?	*Select "Yes" or "No"*
3. Did the water system demonstrate that they delivered the notification and provide a copy of the notification to the state by **July 1** for the previous calendar year?	*Select "Yes" or "No"*
4. Did the notification include the required content? a. For **confirmed LSLs,** does the notification include: • A statement that the service line material is lead, • Information on lead health effects including mandatory health effects language of 40 CFR §141.85(a)(ii), • Steps to minimize exposure to lead in drinking water, • Opportunities for service line replacement, • Available financing programs, and • A statement that the system must replace its portion if the property owners notify the system that they are replacing their portion?	*Select "Yes" or "No" or "N/A"*
b. For **GRRs,** does the notification include: • A statement that the service line material is GRR, • Information on lead health effects including mandatory health effects language of 40 CFR §141.85(a)(ii), • Steps to minimize exposure to lead in drinking water, and • Opportunities for service line replacement?	*Select "Yes" or "No" or "N/A"*
c. For **Unknowns,** does the notification include: • A statement that the service line material is lead status unknown, • Information on lead health effects including mandatory health effects language of 40 CFR • Steps to minimize exposure to lead in drinking water, and • Opportunities to verify the service line material?	*Select "Yes" or "No" or "N/A"*
5. If the water system serves communities with a large proportion of non-English speaking consumers, as determined by the state, did they provide public education materials, including those in 40 CFR §141.85(e), in the appropriate language(s) or containing a telephone number or address where persons served may contact the water system to obtain a translated copy of the materials or to request assistance in the appropriate language?	*Select "Yes" or "No"*
6. In the space below, provide additional comments/documentation related to customer notification for people served by an LSL, GRR, or lead status unknown service line.	

Chapter 2
Thurston PUD Policies

2.1 Utility Policies

Thurston PUD's water policies are contained in the District's Policies and Procedures Manual for Administration of Water Services included in **Appendix A**. Section 2 of this appendix contains Thurston PUD policies relating to general terms and conditions for water service, including the following:

- Initiating and terminating service
- Service and equipment requirements
- Meter reading, billing, payment, and collections
- Dispute resolution
- Rates, fees, and charges
- Violations
- Fire protection
- Special arrangements for short-term water usage

Section 3 of Appendix A contains Thurston PUD's extension policies, including:

- Administrative procedures
- Financing and fees
- Design requirements
- Construction procedures
- Interim connections

2.2 Conditions of Service

2.2.1 Existing Connections

New customers are required to complete an Application of Service for water service, which can be found on the District's website. By receiving water service, the new customer agrees to abide with Thurston PUD terms and conditions.

2.2.2 New Connections

Potential customers must request a connection by completing a Certification of Water Availability Application, which can be found on the District's website.
Once a potential customer submits the application and payment for the appropriate fees, the PUD will review its current connections summary, which lists the approved connections for the

individual water systems for any available connections within the approved retail service area. Then, the process, which can take up to 45 days, is as follows:

- If an approved, connection is available for an individual water system within the service area, a letter is issued to the applicant with instructions on the conditions of receiving a new connection as well as a county-specific Certificate of Water Availability (COWA). COWAs will reserve the connection for a specific amount of time. All COWAs expire one year after issue date, except for Pierce County where COWAs expire three years after issue date. If a COWA expires and the connection has not been put to use, applicants must re-apply for a new certificate to continue to reserve the connection.

- If no approved connections are available, the service area, water system capacity, and water rights are reviewed to determine if the connection can be served. If it is determined that the system has adequate water rights and the connection is within the approved PUD's service area, or no specified service area, and the District is willing to serve the connection, the applicant will receive a letter explaining the steps to take to upgrade the water system, to serve the connection which may include making water system improvements and updating the Part B Water System Plan (in Group A water systems), to be able to serve the connection. A meeting may be needed.

- If no connections are available, and the District does not feel the service can or should be provided, the applicant will receive a letter stating no connection is available.

2.3 Service Areas

Thurston PUD has approved retail service areas for each of its Group A water systems. Group B water systems are limited in the number of connections they can serve. The approved service areas for Group A water systems can be found in each individual Part B water system plan. Thurston PUD will not normally provide service outside its service areas, unless on a temporary basis and in agreement with the primary purveyor for that service area, and upon obtaining approval from the state or local Department of Health. Since Thurston PUD is considered a municipal water supplier, as defined in RCW 90.03.015, it has a duty to provide retail water service within its retail service area. The four threshold factors that require Thurston PUD to provide service are as follows:

1. Thurston PUD has sufficient capacity to serve water in a safe and reliable manner.
2. The service request is consistent with adopted local plans and development regulations.
3. Thurston PUD has sufficient water rights to provide service.
4. Thurston PUD can provide service in a timely and reasonable manner.

2.4 Expansion of Existing System

The conditions of service for expansion within Thurston PUD's service areas are required to be in accordance with the Extension Agreement included in **Appendix B**. Thurston PUD will consider modifying the exterior boundaries of their service areas to accommodate growth; however, this will be done on a case-by-case basis and may require an amendment to the individual Part B water system plan.

2.5 Related Plans

The related plans reviewed for this water system include the following:

- PUD #1 of Thurston County – Part A Umbrella (2013)
- 2003 Municipal Water Law
- Thurston County Comprehensive Plan
- Thurston County Coordinated Water System Plan
- Pierce County Comprehensive Plan
- Pierce County Coordinated Water System Plan
- Washington State Growth Act
- East King County Coordinating Water System Plan
- Lewis County Code 8.55 Group B Public Water Systems
- Thurston County Article III
- Kitsap Drinking Water Supply Regulations Ordinance, 2018-01
- Tacoma-Pierce County Environmental Health Code, Chapter 3
- Grays Harbor Group B Ordinance 2017-001

The 2003 Municipal Water Law requires that water system plans be consistent with local plans and regulations. The signed Consistency Statement Checklists are included in **Appendix C**.

A State Environmental Policy Act (SEPA) Checklist has been prepared for this WSP in accordance with WAC 197-11. A copy of the completed SEPA Checklist is included in **Appendix D.**

2.6 Franchise Agreements

In order to perform work within rights-of-way, Thurston PUD is required to have a current franchise agreement with the appropriate jurisdiction. Thurston PUD has franchise agreements with Thurston, Pierce and Lewis Counties included in **Appendix E**.

2.7 Intertie Agreements

Thurston PUD has four Intertie Agreements, included in **Appendix F**:

1. City of Olympia for an emergency source at the Tanglewilde–Thompson Place water system.
2. City of Lacey for the source at the Covington water system.
3. Spanaway Water for an emergency source at the Crescent Park water system.
4. Spanaway Water for an emergency source at the Terry Lane water system.

2.8 Acquisition of Water Systems

Subject to financial, operational capabilities and approval by the Thurston PUD Board of Commissioners, the District is willing to consider water system acquisitions at any time. Although new water systems must come into Thurston PUD "whole" and "up to standard", Thurston PUD may try to find funding for major upgrades that may need to be completed in order to make the system "whole" and/or to bring it "up to standard." If this is the case, the water systems customers will be responsible for the cost of the improvements to their water system, prior to becoming part of the PUD's owned water systems.

Once Thurston PUD acquires a water system, the major upgrade(s) will be added to Thurston PUD's Capital Improvement Plan.

Thurston PUD may submit loan requests and packages to the State of Washington Department of Health, Office of Drinking Water for Drinking Water State Revolving Fund loans (DWSRF) and/or Washington State Public Works loans. The District may also find other sources of funding. These loans and funding will be used for water system upgrades as part of a water system's transition to PUD ownership and management.

2.9 Satellite Management

Thurston PUD is not actively managing water systems owned by outside sources. Thurston PUD may consider managing these water systems on a case-by-case basis. Thurston PUD's main goal is to own water systems.

2.10 Climate Change Policy

Thurston PUD recognizes the importance of the impacts of climate change to all communities and the obligation we share to be good stewards of our environment. The PUD also recognizes that information surrounding climate change is constantly evolving and is committed to tracking the best information as it emerges for planning purposes. The District has adopted a policy and/or procedures that will benefit its natural resources and reduce the emission of greenhouse gasses, Appendix Y – Resolution 10-30 Greenhouse Gasses Policy.

2.10.1 Measures to Reduce Greenhouse Gas Emissions

Thurston PUD seeks to reduce our greenhouse gas emission footprint while also continuing to provide adequate and reliable water service to the public by including but not limited to:

- Working cooperatively with local, state, regional and federal governments and community organizations to protect and enhance the environment.
- Replacing and/or upgrading insulation in pumphouses and other PUD buildings to reduce heating and cooling energy use and reduce operating expenses.
- Installing variable speed drives or other energy efficiency measures where practicable in new facilities and in existing facilities as part of our capital replacement program.
- Reducing energy use for pumping and treating drinking water though conservation and water use efficiency measures. See section 3.0 and Appendixes H and I for detailed information on water use efficiency.
- As funding allows, installing remote read meters to reduce vehicle trips for meter reading.
- Reduced vehicle fuel use by optimizing operations and maintenance travel routes and phasing hybrid vehicles into the lightweight portion of our fleet.
- Replacing diesel backup generators with propane backup generators.
- Installation of the solar operated concept well at the Meadows water system.
- Where practical, feasible, and cost effective, install solar panels.
- Where practical and feasible purchase hybrid and electric vehicles and equipment.

2.10.2 Climate Change Resilience

New water rights in water resource inventory areas with stream flow limits are almost impossible to secure. There are many competing demands among fish, forests, farms and people. Up to an estimated 2.3 million people are expected to move into Washington State by 2040. These conflicts will grow as changes in temperature and weather patterns affect seasonal availability of our water supplies. Anything that interrupts the storage and recharge of water in our rivers, lakes and aquifers threatens the drinking water supply. Thurston PUD is committed to promoting the sustainable use of water resources, including conservation efforts. See section 3.0 and Appendixes H and I for detailed information on water use efficiency and the many measures the PUD has undertaken to reduce water use and encourage customer conservation.
Thurston PUD obtains all of its drinking water supply from groundwater wells, which are regularly monitored to track static water level changes. Other than for some of the PUD's very small water systems these wells are highly reliable and are not impacted by seasonal drought. Water Shortage Planning can be found in Appendix Q.

2.10.3 Planned Projects and Funding Needs

Chlorine production
During 2020 and early 2021 Thurston PUD was impacted by national chlorine shortages. Chlorine is essential for ensuring safe drinking water in our chlorinated systems. Climate

change is increasing the frequency and severity of natural disasters which disrupted the chlorine supply in 2020. As mitigation Thurston PUD is planning to install a small chlorine production plant at the Pattison water system which will produce low strength chlorine for that water system and can serve as an in-house source of chlorine in emergency situations.

Other proactive actions the District will consider and are include in Hazard Mitigation Plan:

- Deepening or replacement of select wells to avoid drought
- Raising well casings, relocating, or other measures due to increasing floods
- Water recharge and reuse
- Allocate funding for equipment to automate monitoring of water level in select wells
- Different leak detection tools to reduce water consumption?
- Intertying or consolidating systems to give greater redundancy.
- Funding for electric vehicles
- Funding to reinsulate or make other improvements to pumphouses
- Replacing high leak sections of distribution
- Solar powered well facilities
- Additional water rights

CERTIFIED COPY OF RESOLUTION
ADOPTED AT THE REGULAR MEETING OF THE COMMISSIONERS
OF
PUBLIC UTILITY DISTRICT NO. 1 OF THURSTON COUNTY

We, the undersigned, being the President and Secretary of Public Utility District No. 1 of Thurston County, do hereby certify that the following Resolution was unanimously adopted by the Commissioners of Public Utility District No. 1 of Thurston County, in attendance at the meeting held at the office of the District, Suite 201, 921 Lakeridge Way S.W., Olympia, Washington, 98502 on Tuesday, April 27, 2010, and that said Resolution has not been revoked.

RESOLUTION NO. 10-30

WHEREAS, many local governments throughout the nation, both large and small, are reducing the production of global warming pollutants trough programs that provide economic and quality of life benefits, such as reduced energy bills, green space preservation, air quality improvements, reduced traffic congestion, improved transportation choices, and economic development and job creation through energy conservation and new energy.

NOW THEREFORE BE IT RESOLVED, the Thurston County PUD #1 hereby adopts the following policies and/or procedures that will benefit its natural resources and reduce the emission of greenhouse gasses:

Public Buildings Policy Details:

- All new publicly funded buildings should be models of cost-effective, energy- efficient design.
- Encourage energy conservation practices in buildings by raising the awareness of employees own energy use.

Employee Oriented Policy Details:

- Encourage ride-sharing, van-pooling and the use of flex-time schedules by employees.
- Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate

Energy Source & Use Policy Details:

- Reduce greenhouse gases by expanding the use of conservation and alternative energy sources and by reducing vehicle miles traveled by increasing alternatives to driving alone.

Purchasing Policy Details:

- Utilize purchasing to promote reductions in GHG emissions by the suppliers of its goods and services.

Equipment Oriented Policy Details:

- Monitor the efficiency of the pumps in water systems, and operate and maintain them at peak efficiency. When cost effective options are possible, the one using the least amount of energy shall be preferred.

Waste Reduction & Use Oriented Policy Details:

- Reduce GHG emissions waste through improved management of waste handling and reductions in waste generation.

Other Types of Policy Ideas:

- Establish a water conservation plan that may include such policies and actions as:
  * Tiered rate structures for water use

Said Resolution was approved and adopted by the unanimous vote of the Commissioners present.

We do further certify that said meeting was attended by 3 of the three Commissioners of Public Utility District No. 1 of Thurston County and that the Resolution was adopted by the unanimous vote of the Commissioners of Public Utility District No. 1 of Thurston County in attendance.

Christopher L. Stearns

Christopher Stearns
Commissioner and President of PUD

ATTEST:

Paul Pickett
Commissioner and Secretary

Acknowledgements

This undertaking was possible due to the combined efforts of numerous individuals and groups. The PUD would like to pay particular tribute to those agencies and individuals listed below:

- John Weidenfeller, General Manager, Thurston PUD
- Julie Parker, Assistant General Manager, Thurston PUD
- Kim Gubbe, Director of Planning and Compliance, Thurston PUD
- Ruth Clemens, Administrative Services Manager, Thurston PUD
- Erica Cecil, Operations Specialist III, Thurston PUD
- Brian Wilson, Operations Specialist III, Thurston PUD
- Mariah Rodocker, Customer Service Representative, Thurston PUD
- Teal Reopelle, Administrative Assistant I, Thurston PUD

Contents

6.0 Financial Program

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Appendices

Cross-Connection Control Program -- Plan

Public Utility District No. 1 of Thurston County

A. Requirement for Program

Public Utility District No. 1 of Thurston County (The District), which owns numerous public water systems throughout various counties, has the responsibility to protect their public water systems from contamination due to cross-connections. A cross-connection may be defined as *"any actual or potential physical connection between a potable water line and any pipe, vessel, or machine that contains or has a probability of containing a non-potable gas or liquid, such that it is possible for a non-potable gas or liquid to enter the potable water system by backflow."*

All public water systems are required to develop and implement cross-connection control (CCC) programs. The CCC requirements are contained in Washington Administrative Code (WAC) 246-290-490 of the Group A Drinking Water Regulations. The minimum required elements of a CCC program are:

1. Establishment of legal authority and program policies;
2. Evaluation of premises for cross-connection hazards;
3. Elimination and/or control of cross-connections;
4. Provision of qualified personnel;
5. Inspection and testing of backflow preventers;
6. Quality control of testing process;
7. Response to backflow incidents;
8. Public education for consumers;
9. Record keeping for CCC program; and
10. Special requirements for reclaimed water use.

Other CCC program requirements include:

~~1. Coordination with the Local Administrative Authority (LAA), i.e., the local building or plumbing official regarding CCC activities;~~

~~2.~~1. Prohibition of the return of used water into the public water system (PWS) distribution system; and

~~3.~~2. Inclusion of a written CCC program in a Water System Plan (WSP) or a Small Water System Management Program (SWSMP).

Note: Throughout this CCC program plan the term *customer* is used. *Customer* as used herein means the property owner and/or occupant of the premises served by the PWS (i.e., whoever interfaces with the PWS regarding water service). Also, unless otherwise defined, all CCC-related terms used in this program have the same definitions as those contained in WAC 246-290-010 of the Washington State Drinking Water Regulations.

B. Program Objectives

The objectives of The District's CCC program are to:

1. Reasonably reduce the risk of contamination of the public water distribution system; and
2. Reasonably reduce The District's exposure to legal liability arising from the backflow of any contaminant originating from the customer's plumbing system and then supplied to other customers

C. Summary of Program Decisions

The following table summarizes the major policy and program decisions adopted by the District. The items in the table represent CCC program areas that have more than one acceptable approach or option.

CCC Program Decision Summary Table Public Utility District No. 1 of Thurston County

Decision Item	Decision
1. Type of Program [General, WAC 246-290-490(2)(e)]	
a. Premises isolation only	X
b. Premises isolation and in-premises protection (combination program)	
2. Extent of Coordination with LAA [WAC 246-290-490(2)(d)]	
a. Information exchange	X
b. Interaction	
c. Joint program	
3. Relationship with Customer [Element 1]	
a. Signed service agreement or contract	
b. Ordinance/resolution; implied service agreement	X
4. Enforcement of Corrective Action [Element 1]	
a. Rely upon shut-off of water service	X
b. Rely upon The District-installed premises isolation	
5. Assessment and Re-assessment of Hazard [Element 2]	
a. By the District's staff or equivalent	X
b. By cross-connection control specialist (CCS) employed by customer; report reviewed by The District's CCS	
6. Location and Ownership of Premises Isolation Assembly [Element 3]	
a. On The District's service line	
b. On customer's service line	X
7. CCS Option – The District**'s Program Management [Element 4]**	
a. The District's staff member certified	X
b. Inter-agency agreement or use other agency's CCS	
c. Contract with consultant CCS	X
8. Testing of Assemblies [Element 5]	
a. By the District's staff or The District-employed backflow assembly tester (BAT)	
b. By customer-employed (contractor) BAT	X
9. Cost Recovery [WAC 246-290-100(4)(h) and –105(4)(p)]	
a. Borne by all customers (general water rates)	
b. Assessed to specific class (commercial meters)	
c. Each customer directly bears cost	X

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D. Required Elements of Program

The drinking water regulations for Group A public water systems in Washington, WAC 246-290, require CCC programs to include certain minimum elements. The elements are listed in WAC 246-290-490(3). This section describes how The District intends to comply with each of the required program elements. Elements are numbered the same as they appear in the WAC.

Element 1: *Adoption of a written legal instrument authorizing the establishment and implementation of a CCC program.*

The District has adopted a resolution (Resolution No. 05-15), shown on Attachment 1, which authorizes the District to implement a CCC program. The resolution also authorizes the system to terminate water service to consumers who do not comply with the resolution. However, the primary method for protection of the distribution system will be the installation of a backflow preventer by the customer, at the customer's expense.

The service contract referred to in the resolution (included in Attachment 3) shall be the primary enforcement authority for all customers.

The written and implied contract terms are discussed further under Element 3.

Legal Instrument Status	***Schedule***
Preparation of proposed legal instrument	*October 2005*
Introduction of the legal instrument to governing body	*November 2005*
Adoption of legal instrument	*December 2005*
Legal instrument becomes effective	*February 2005*

Element 2: *Development and implementation of procedures and schedules for evaluating new and existing service connections to assess the degree of hazard.*

Initial Cross-Connection Hazard Surveys

The procedures for evaluating the backflow prevention requirements for new and existing customers are as follows:

1. For all ***new non-residential services***, The District will require that the customer submit with the application for water service an evaluation (performed at customer's expense) by a DOH-certified cross-connection control specialist (CCS) of the hazard posed by the proposed plumbing system, with recommendations for the installation at the meter of either a double-check valve assembly (DCVA) or a reduced-pressure principle backflow assembly (RPBA). The District may accept the recommendations or submit the recommendations to a CCS for peer review and concurrence, before acceptance.

   As an alternative to the above requirement for a survey by a CCS, the customer may agree to install an approved air gap (AG) or RPBA for premises isolation as a condition of service.

2. For all ***new residential services***, The District will require that the customer submit with the application for water service a completed "Water Use Questionnaire" (copy included in Attachment

3). If the customer's questionnaire indicates special plumbing, such as a lawn sprinkler system, or hazardous water use on the premises, the customer shall submit to The District an evaluation by a DOH-certified CCS of the hazard posed by the proposed special plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA.

As an alternative to the above requirement for a survey by a DOH-certified CCS, The District, at its discretion, may specify the backflow preventer required to be installed as a condition of service.

3. For all ***existing non-residential services***, The District will require the customer to submit to The District, within thirty (30) days of notification, an evaluation by a DOH-certified CCS, of the hazard posed by the plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA. The District may accept the recommendations or submit the recommendations to a CCS for peer review and concurrence, before acceptance.

   As an alternative to the above requirement for a survey by a DOH-certified CCS, the customer may agree to install an AG or RPBA for premises isolation within 90 days of notification by the District or an alternate time period acceptable to the District.

4. For all ***existing residential services***, the District will require the customer to submit to the District, within thirty (30) days of notification, a completed "Water Use Questionnaire." If the customer's reply indicates special plumbing or water use on the premises, the customer shall submit an evaluation by a the District DOH-certified CCS of the hazard posed to the water system by the customer's plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA.

   As an alternative to the above requirement for a survey by a CCS, The District may specify the backflow preventer required to be installed as a condition of service. The District's CCS will provide guidance on the type of backflow preventer to be installed.

5. For all existing services, should the customer fail to supply the required information for a hazard assessment or fail to submit a completed "Water Use Questionnaire," the District may have the assessment made by a CCS employed by the District, require the installation of an RPBA for premises isolation, or take other such actions consistent with the previously stated policies and bill the customer for the associated costs.

Cross-Connection Hazard Survey Schedule for Initial Hazard Assessments

The schedule for initial hazard assessment is outlined in the following table. The schedule starts from the date the CCC program is established.

Initial Assessment Task	Schedule
Assessment of all new connections	At time of application for water service
Identification and assessment of high-hazard premises which are listed on Table 9 of Washington Administrative Code (WAC) 246-290-490	Within nine months
Identification and assessment of hazardous premises supplemental to Table 9 of WAC 246-290-490	Within 12 months

Identification of residential connections with special plumbing facilities and/or water use on the premises	Within 15 months

Cross-Connection Hazard Survey Schedule for Subsequent Hazard Re-Assessments

For subsequent cross-connection hazard surveys, procedures for evaluating the backflow prevention requirements are:

1. For **residential services,** the District will require the customer to submit to the District, within two months of the District notification, a completed "Water Use Questionnaire." The procedure used for evaluating the hazard re-assessment and the potential change in the required backflow prevention will be the same as used for the initial hazard assessment.
2. For all **non-residential services**, the District will require the customer to submit to the District, within two months of the District notification, a hazard re-assessment (at the customer's expense) by a DOH-certified CCS.

The frequency of hazard re-assessments will be as shown in the table below:

Type of Service	Frequency of Re-Evaluation
Any services with reduced-pressure principle backflow assembly (RPBA) installed for premises isolation	None required as long as the RPBA passes annual tests and inspections
Commercial services with double-check valve assembly (DCVA) installed for premises isolation	Every ~~two~~ 5 years and upon change in use or ownership
Residential services with special plumbing where the District relies upon compliance with Uniform Plumbing Code (UPC)	Every ~~2 3~~5 years (questionnaire)
Residential services with DCVA installed for premises isolation	Every ~~4~~ 5 years (questionnaire)
Residential services with no known special plumbing or water use on the premises	Every ~~4~~ 5 years and upon change in use, ownership, or plumbing system (questionnaire)

The District will inform the customer that the District's survey of a customer's premises (whether by a representative of the District or through the evaluation of a questionnaire completed by the customer) is for the sole purpose of establishing the District's minimum requirements for the protection of the public water supply system, and that the required backflow protection will be commensurate with the District's assessment of the degree of hazard.

The District will also inform the customer or any regulatory agencies that the District's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by the District's personnel or agent do not constitute an approval of the customer's plumbing system or an assurance to the customer or any regulatory agency of the absence of cross-connections.

Element 3: *Development and implementation of procedures and schedules for elimination and/or control*

of cross-connections.

Backflow Preventer Requirements

The following service policy shall apply to all new and existing customers:

1. The District will require that water service to all **non-residential customers** be isolated at the meter by a DOH-approved DCVA or RPBA acceptable to the District, unless otherwise specifically exempted by the District. All high-hazard connections of the type described in Table 9 of WAC 246-290-490 shall be isolated with an RPBA.

2. The District will require all **residential customers** with facilities of the type described in Table 9 of WAC 246-290-490 to be isolated with an RPBA. All other residential customers with special plumbing or water use on the premises will be isolated with a DCVA. "Special plumbing" includes, but is not limited to, the following:

   a. A lawn irrigation system;
   b. A solar heating system;
   c. An auxiliary source of supply, e.g., a well or creek;
   d. Piping for livestock watering, hobby farming, etc.;
   e. Residential fire sprinkler system; and
   f. Property containing a small boat moorage.

3. **Additional premises requiring premises isolation.** The District has chosen to supplement Table 9 of WAC 246-290-490(4) by identifying additional premises or premises types for which premises isolation is mandated. Such premises will include public swimming pools.

4. **For all customers that have a written service contract with** the District, the required premises isolation DCVA or RPBA shall be:

   - Purchased and installed by the customer (at the customer's expense) immediately downstream of the water meter in accordance with the District's standards described hereinafter; and
   - Maintained, tested, and inspected in accordance with the District's standards described hereinafter.

   For new customers, the District will not turn on water (except for testing purposes) at the meter until the customer complies with the above requirements.

   The failure of the customer to comply with the District's installation and maintenance requirements shall constitute a breach of contract by the customer. The District may then proceed with corrective action provisions stipulated in the contract.

5. **Customers without written contracts** are considered to have an implied contract that requires the customer to bear all reasonable costs of service. The District will install the required DCVA or RPBA on the service, upstream of the meter, and charge the customer for the cost of the initial installation, and all future maintenance, testing, and repair, as set forth in the District's schedule of rates and charges. The failure of the customer to pay these costs shall constitute a breach of contract by the customer, and the District will proceed with the established delinquency of

payment procedures. As an alternative, the customer may sign a service contract and install the required backflow preventer downstream of the meter in accordance with the District's installation standards described hereinafter.

6. **Approved Backflow Preventers and Installation**

All backflow preventers relied upon by the District to protect the public water system shall meet the definition of "approved backflow preventer" as contained in WAC 246-290-010. The District will obtain and maintain a current list of assemblies approved for installation in Washington State from the DOH Office of Drinking Water.

All backflow preventers will be installed in:

- The orientation for which they are approved;
- A manner and location that facilitates their proper operation, maintenance, and testing or inspection;
- A manner that will protect them from weather-related conditions such as flooding and freezing; and
- Compliance with applicable safety regulations.

Installation standards contained in the most recently published edition of the Pacific Northwest Section, American Water Works Association (PNWS-AWWA) *CCC Manual* or the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) *CCC Manual* shall be followed unless the manufacturer's requirements are more stringent.

The District has no regulatory responsibility or authority over the installation and operation of the customer's plumbing system. The customer is solely responsible for compliance with all applicable regulations and for prevention of contamination of his plumbing system from sources within his/her premises. Any action taken by the District to survey plumbing, inspect or test backflow prevention assemblies, or to require premises isolation (installation of DCVA or RPBA on service) is solely for the purposes of reducing the risk of contamination of the District's distribution system.

The District will inform the customer that any action taken by the District shall not be construed by the customer as guidance on the safety or reliability of the customer's plumbing system. The District will not provide advice to the customer on the design and installation of plumbing other than through the general public education program discussed in Element 8.

Except for easements containing the District's distribution system, the District will not undertake work on the customer's premises, unless the District needs to install a backflow preventer for customers that do not comply. In such circumstances, the device will be installed, at the owners expense, on the customer's side of the service meter.

7. **Schedule for Installation of Backflow Preventers**

The following table shows the schedule that the District will follow for installation of backflow preventers when they are required (based on the hazard evaluation).

Type of Service	Schedule
New connections with cross-connection hazards	Before service is initiated
Existing connections with Table 9-type hazards and other high cross-connection hazards	Within 90 days after notification
Existing connections with other than Table 9 of WAC 246-290-490 or high cross-connection hazards	Within 180 days after notification (suggested)
Existing fire protection systems using chemicals or supplied by unapproved auxiliary water source	Within 90 days after notification
Existing fire protection systems not using chemicals and supplied by The District's water	Within 1 year after notification (suggested)

The District may consider granting an extension of time for installation of backflow preventer for an existing connection if requested by the premises owner.

Element 4: *Provision of qualified personnel, including at least one person certified as a CCS, to develop and implement the CCC program.*

1. **Program Administration:** The responsibility for administration of the CCC Program rests with the District. General policy direction and risk management decisions are established by the Public Utility District No. 1 of Thurston County Commissioners.

2. The District will employ or have on staff at least one person certified by DOH as a CCS to develop and implement the CCC program. As an alternative, or when no staff or employees are properly qualified, the District may retain a DOH-certified CCS on contract to provide the necessary expertise and services.

3. The following cross-connection related tasks will be performed by or under the direction of the District's certified CCS (on staff or under contract):
   - Preparation of and recommendations regarding changes to the CCC program;
   - Performance of and/or reviews of CCC hazard evaluations;
   - Recommendations on the type of backflow preventer to be installed;
   - Recommendations on schedules for retrofitting of backflow preventers;
   - Inspections of backflow preventers for proper application and installation;
   - Reviews of backflow preventer inspection and test reports;
   - Reviews of backflow testing quality control information;
   - Recommendations and/or the granting of exceptions to mandatory premises isolation;
   - Participation in or cooperation with other water utility staff in the investigation of backflow incidents and other water quality problems;
   - Completion of Backflow Incident Reports; and
   - Completion of CCC Activity and Program Summary Reports.

4. The District may delegate other CCC program activities to other personnel who are not certified CCSs, including clerical support staff. These activities include:
   - Administration of paperwork associated with service agreements;
   - Mailing, collecting, and initial screening of hazard evaluation/water use questionnaires;
   - Mailing of assembly testing notices;
   - Receiving and screening of assembly testing reports;

- CCC program database administration and record keeping;
- Dissemination of public education material; and
- ~~Assisting tasks associated with coordination with the LAA.~~

5. The following table identifies the current CCS employed or retained on contract by the District to manage The District's CCC program and/or act as the CCC technical resource for the District:

Name of CCS	James Campbell
Address	1230 Ruddell Road SE
City, State, Zip	Lacey, WA 98503
Telephone Number	360-790-2662
CCS Certification Number	10679

Element 5: *Development and implementation of procedures to ensure that approved backflow preventers are inspected and/or tested (as applicable).*

1. Inspection and Testing of Backflow Preventers

All backflow preventers that the District relies upon for protection of their water systems will be subject to inspection and, if applicable, testing.

Inspection and testing of backflow preventers will be as follows:

- The District's DOH-certified CCS will inspect backflow preventers for proper application (i.e., to ensure that the preventer installed is commensurate with the assessed degree of hazard).
- Either a DOH-certified CCS or backflow assembly tester (BAT) will perform inspections of backflow preventers for correct installation.
- A DOH-certified backflow assembly tester will test all assemblies relied upon by the District to protect the public water system.

2. Frequency of Inspection and Testing

Inspection and testing of backflow preventers will be conducted:

- At the time of installation;
- Annually after installation;
- After a backflow incident; and
- After repair, reinstallation, relocation, or re-plumbing.

The District may require a backflow preventer to be inspected and/or tested more frequently than once a year, when it protects against a high-health hazard or when it repeatedly fails tests or inspections.

3. Responsibility for Inspection and Testing

The District will be responsible for inspection and testing of all the District-owned backflow preventers.

The District will require the customer to be responsible for inspection and testing of backflow preventers owned by the customer. The customer shall employ, at customer expense, a DOH-certified BAT pre-approved by the District to conduct the inspection and test within the time period specified in the testing notice sent by the District. The customer may request an extension of the due date for returning a test report by submitting a written request to the District. The District may grant one extension up to 90 days.

4. Approved Test Procedures

The District will require that all assemblies relied upon to protect the public water system be tested in accordance with DOH-approved test procedures as specified in WAC 246-290-490(7)(d). Any proposal to use alternate test procedures must be approved by the District's CCS.

The District will require all assembly tests to be reported on the form shown in Attachment 3 and returned as specified above.

5. Notification of Inspection and/or Testing

The District will notify in writing all customers who own backflow preventers that are relied upon to protect the public water system to have their backflow preventer(s) inspected and/or tested. Notices will be sent out not less than 30 days before the due date of the inspection and/or test. The notice will also specify the date (up to 30 days after the due date of the inspection and/or test date) by which the inspection/test report must be received by the District.

6. Enforcement

When a customer fails to send in the inspection/test report within 15 days after the due date specified, and the District has not approved an extension to the due date, the District will take the following enforcement action:

- The District will send a second notice giving the customer an additional 15 days to send in the inspection/test report.
- If the customer has not sent in the inspection/test report within 10 days of the due date given in the second notice, the District will send a third notice, by certified mail, or by hand delivery, giving the customer an additional 15 days to send in the report. The notice will also inform the customer that failure to satisfactorily respond to this notice will result in water service shut-off.
- The District will send copies of the third notice to the owner and occupants of the premises (if different from the customer) ~~and to the LAA~~.
- If the owner and/or occupants have not responded satisfactorily to the District within 10 days of the due date specified in the third notice, the District will implement water service shut-off procedures.
- The District ~~will~~ may offer to arrange for the inspection and/or testing of the customer-owned backflow preventers by a certified BAT and will bill the customer the actual or typical cost of inspection and/or testing in the service area plus reasonable administrative costs. Collection and enforcement procedures for such charges will be the same as for other water utility charges.

Element 6: *Development and implementation of a backflow prevention assembly testing quality assurance/quality control program.*

1. **List of Pre-Approved BATs**

   The District will maintain a list of local, DOH-certified BATs that are pre-approved by the District to perform the following activities:

   - Backflow preventer inspection for proper installation; and
   - Backflow assembly testing.

   The District will also maintain a list of local DOH-certified CCSs that are pre-approved by the District to perform the following activities:

   - Cross-connection hazard evaluations;
   - Backflow preventer inspection for proper application; and
   - Backflow preventer inspection for proper installation**.**

   The list(s) will be revised annually or more frequently if necessary. A list of certified BATs is found on the DOH Drinking Water website at Cross-Connection Control and Backflow Prevention | Washington State Department of Health. ~~, based on information provided by the Washington Environment Training Center (WETRC). Under contract to DOH, WETRC has developed and maintains an online public list of certified BATs. The resource is located at www.wetrc.org. Certified BAT information is accessed at the site by first selecting the "Backflow Assembly Tester" link on the website's home page. Then, the "BAT Public Listing" link is selected. It is on this page that updated lists of currently certified BATs may be viewed by County or by individual BAT name. In addition, an entire list for the state can be viewed and printed.~~

2. **Pre-Approval Qualifications**

   BATs and CCSs who wish to be included on the District's pre-approved list and/or provide testing in the District's service area must apply to the District and furnish the following information:

   - Evidence of current DOH certification in good standing;
   - Make and model of testing equipment (BAT listing only);
   - Evidence of test equipment verification of accuracy and/or calibration within the past 12 months (BAT listing only);
   - Evidence showing possession of a license to operate a business in the jurisdiction where service will be performed.
   - The District may consider the inclusion of the applicant on a current list of pre-approved CCSs or BATs issued by a City or County as sufficient evidence of qualification to be included on the District's pre-approved list.

3. **Quality Assurance**

   The District's CCS will review within 30 days of receipt the backflow preventer inspection/test report forms submitted by the customer. The District's CCS may accept reports that are signed by a CCS or

BAT not on the pre-approved CCS or BAT list provided that the same information as listed in "Pre-Approval Qualifications" is also submitted to the District.

The District's CCS will provide follow up on test reports that are deficient in any way.

The District's CCS will report incidences of fraud or gross incompetence on the part of any BAT or CCS to DOH Operator Certification program staff.

Element 7: *Development and implementation (when appropriate) of procedures for responding to backflow incidents.*

1. Backflow Incident Response Plan

A required by WAC 246-290-415(2), The District has developed a backflow incident response plan as supplement to its emergency response plan. The District's incident response plan includes the following elements:

- Notification of affected population;
- Notification and coordination with other agencies, such as DOH, ~~the LAA,~~ and the local health jurisdiction;
- Identification of the source of contamination;
- Isolation of the source of contamination and the affected area(s);
- Cleaning, flushing, and other measures to mitigate and correct the problem; and
- Apply corrective action to prevent future backflow occurrences.

Please see Attachment 3 for the complete the District Backflow Incident Response Plan.

Element 8: *Development and implementation of a cross-connection control public education program.*

1. Customer Education

The District distributes public education messages about cross-connection hazards, including ways to avoid such hazards, to system customers in its annual newsletter and biennially in consumer confidence reports (CCRs).

The information distributed by the District will include, but not be limited to, the following subjects:

- Cross-connection hazards in general;
- Irrigation system hazards and corrective actions;
- Fire sprinkler cross-connection hazards;
- Importance of annual inspection and/or testing of backflow preventers; and
- Thermal expansion in hot water systems when backflow preventers are installed for premises isolation.

Element 9: *Development and maintenance of cross-connection control records.*

1. **Types of Records and Data to be Maintained**

   The District will maintain records of the following types of information required by WAC 246-290-490:

   - Service connections/customer premises information including:
     - Assessed degree of hazard; and
     - Required backflow preventer to protect the public water system.
   - Backflow preventer inventory and information including:
     - Air gap (AG) location, installation and inspection dates, inspection results and person conducting inspection;
     - Backflow assembly location, assembly description (type, manufacturer, make, model, size, and serial number), installation, inspection and test dates, test results and data, and person performing test; and
     - Information on atmospheric vacuum breakers used for irrigation system applications, including manufacturer, make, model, size, dates of installation and inspections, and person performing inspections.

   The District will maintain records on all assemblies that protect the public water system from contamination. At a minimum, the District will maintain records on all premises isolation assemblies required to protect the public water system.

2. **Reports to be Prepared and Submitted to DOH**

   The District will prepare the following reports required by WAC 246-290-490 including:

   - Cross-connection control program activities report for the calendar year, to be sent to DOH when requested;
   - Cross-connection control program summary information, when required, or when there are significant policy changes;
   - Backflow incident reports to DOH (and voluntarily to the PNWS-AWWA CCC Committee); and
   - Documentation when exceptions to mandatory premises isolation are granted.

   At a minimum, the District's CCS will prepare and sign the exceptions reports.

   The District's CCS will prepare and sign all CCC-related reports required by WAC 246-290-490.

   The District's CCS will review all CCC-related reports for correctness.

Element 10: *Additional cross-connection control requirements for reclaimed water.*

In the event that reclaimed water use is proposed within the PWS's service area, the District will make all cross-connection control requirements mandated by the Permitting Authority in accordance with Chapter 90.46 RCW part of the written CCC program plan and comply with such additional requirements.

E. Other Provisions

~~1. Coordination with Local Administrative Authority~~

~~Both WAC 246-290-490 and the Uniform Plumbing Code amended for Washington require coordination between the water purveyor and the Local Administrative Authority (LAA) in all matters pertaining to cross-connection control.~~

~~The District will provide a copy of this CCC program to all counties within which service is rendered, via a copy of the District's water system plan or in a separate document. The District will inform all applicable LAAs of any changes in policy or procedure that may impact the LAAs.~~

~~The District will provide information to LAAs in a timely manner regarding any:~~

- ~~Requirement imposed on a residential customer for the installation of a DCVA or an RPBA on the service, with a description of the cross-connection hazard identified;~~
- ~~Upgrade of the premises isolation backflow preventer, i.e., from a DCVA to an RPBA;~~
- ~~Action taken to discontinue water service to a customer; and~~
- ~~Backflow incident known by the District to have contaminated the public water system or a customer's plumbing system.~~

~~The District may pursue development of written agreements with LAAs, if warranted. Such agreements will be developed in coordination with LAAs, and will include items such as delineation of responsibilities, policies and procedures regarding evaluations of new and existing connections, and communication protocols between the District and LAAs.~~

~~2.~~1. **Prohibition of Return of Used Water**. The PWS must prohibit the intentional return of used water to the District's distribution system per WAC 246-290-490 (2)(k~~l~~).

Used water is defined as water that has left the control of the District. This includes water used for heating and cooling purposes and water that may flow back into the distribution system from customers with multiple connections.

It is the policy of the District to:

- Prohibit the intentional return of used water to the distribution system by any customer served by the public water system; and
- Require that all customers with multiple connections, where the hydraulics permit the potential return of used water, to install a backflow preventer (DCVA or RPBA) commensurate with the degree of hazard at each point of connection.

~~3.~~2. **Unapproved Auxiliary Supplies**. All water supplies other than those owned by the District are

considered unapproved auxiliary supplies as defined in WAC 246-290-010. The District will require backflow protection for customers with auxiliary supplies on their premises as follows:

- Per Table 9 of WAC 246-290-490, the District will require the installation of an RPBA for premises isolation at the service connection to any customer having an unapproved auxiliary supply on the premises that is interconnected with the District's water system whether or not there is a physical connection between the unapproved auxiliary supply and the District's water system.
- The District will require the installation of a DCVA for premises isolation at the service connection to any customer with an unapproved auxiliary water supply not interconnected with the District's water system.

~~4.~~3. **Tanker Trucks**. The District may allow tanker trucks to obtain water from the District's water system under the following conditions:

- The tanker truck is equipped with an approved AG or an approved RPBA with a current satisfactory inspection or test report.
- The tanker truck will obtain water from the District-designated watering points only. These watering points are equipped with the District-installed backflow preventers.

~~5.~~4. **Temporary Water Connections.** The District will not supply water through temporary connections, such as those used for construction projects or main disinfection, except through a backflow preventer arrangement approved by the District. The applicant for the temporary connection shall document that the backflow preventer is a DOH-approved model and has passed an inspection and/or test within the past 12 months and/or upon relocation, whichever is more recent.

~~6.~~5. **Interties and Wholesale Water Customers**. The District will require that interties with other public water systems or wholesale customers (such as mobile home parks) be isolated at the point of delivery by:

- A minimum of a DCVA; and
- A minimum of an RPBA if The District considers the purchasing system or wholesale customer to pose a high-health hazard to the District's system.

The District may waive or reduce the level of protection at the intertie, if the purchasing public water system or wholesale customer:

- Is a Group A public water system **not** exempt from DOH regulation as per WAC 246-290-020(2);
- Has a CCC program that complies with WAC 246-290-490 and which has been approved by DOH; and
- Implements the CCC program at a level satisfactory to the District.

F. Relationship to Other Planning and Operations Program Requirements

The District will consider the requirements and consequences of the CCC program on the utility's planning and operations requirements. Such considerations include, but are not limited to ensuring:

- And promoting adequate communication between CCC program personnel and other water utility staff;
- That adequate training is provided to all staff to recognize potential cross-connection control problems;
- That cross-connection issues be considered in water quality investigations;
- That the design of the water distribution system makes adequate provisions for expected head losses incurred through the installation of and experienced by backflow assemblies;
- That CCC program personnel be consulted in the design of water and wastewater treatment facilities and when proposals are made to receive or distribute reclaimed water;
- That operations under normal and abnormal conditions do not result in excessive pressure losses; and
- That adequate financial and administrative resources are available to carry out the CCC program.

Attachment 1 – Resolution No. ~~05-15~~

Add Approved Resolution 23-31 which includes Policy

CERTIFIED COPY OF CROSS-CONNECTION CONTROL POLICY RESOLUTION ADOPTED AT MEETING OF COMMISSIONERS OF PUBLIC UTILITY DISTRIC NO. 1 OF THURSTON COUNTY

We, the undersigned, being the President and Secretary of Public Utility District No. 1 of Thurston County, do hereby certify that the following resolution was adopted unanimously by the Commissioners of Public Utility District No. 1 of Thurston County at the meeting of the Commissioners held at the offices of the Thurston County Public Utility District No. 1, Suite G, 210 Union Avenue, Olympia, Washington, 98501, which meeting was held on December 13, 2005, and that said Resolution has not been revoked.

Resolution No. 05-15

Finding of Fact

WHEREAS it is the responsibility of a Thurston Public Utility District (TPUD) to provide water that meets Washington State drinking water quality standards, to the customer at the meter, and

WHEREAS it is TPUD's responsibility to prevent the contamination of the public water system from the source of supply (i.e., to the customer's connection to the service pipe ~~or meter~~), and

WHEREAS it is a requirement of the Washington State Department of Health (DOH) for TPUD to establish a cross connection-control program satisfactory to DOH, and

WHEREAS cross-connections within the customer's plumbing system pose a potential source for the contamination of the public water supply system;

NOW, THEREFORE, it is hereby

RESOLVED that Thurston Public Utility District, hereinafter referred to as TPUD, establishes the following service policy to protect the purveyor-owned water system from the risk of contamination. For public health and safety, this policy shall apply equally to all new and existing customers.

Definitions

Unless otherwise defined, all terms used in this resolution pertaining to cross-connection control have the same definitions as those contained in WAC 246-290-010 of the Washington State Drinking Water Regulations.

Prevention of Contamination

TPUD shall consider the customer's plumbing system, starting from the termination of TPUD's water service pipe, to be a potential high-health hazard requiring the isolation of the customer's premises by a DOH-approved, customer-installed and maintained reduced-pressure principle backflow assembly (RPBA) or reduced-pressure detector assembly (RPDA). The RPBA or RPDA shall be located at the end of TPUD's water service pipe (i.e., immediately downstream of the meter). Water shall only be supplied to the customer through a DOH-approved, customer-installed and maintained RPBA or RPDA.

Notwithstanding the aforesaid, the TPUD, upon an assessment of the risk of contamination posed by the customer's plumbing system and use of water, may allow:

- A single-family or duplex residential customer to connect directly to the water service pipe, i.e., without a DOH-approved double-check valve assembly (DCVA) or RPBA
- Any customer other than a single-family or duplex residential customer, as a minimum, to be supplied through a DOH-approved, customer-installed and maintained DCVA or double-check detector assembly (DCDA).

Conditions for Providing Service

TPUD shall only provide water service based on the following terms and limitations:

1. ~~The customer agrees to take all measures necessary to prevent the contamination of~~ the plumbing system within his/her premises and TPUD's distribution system that may occur from backflow through a cross connection. These measures shall include the prevention of backflow under any backpressure or backsiphonage condition, including the disruption of the water supply from the Purveyor's system that may occur during routine system maintenance or during emergency conditions, such as a water main break.

2. The customer agrees to install, operate, and maintain at all times his plumbing system in compliance with the current edition of the Uniform Plumbing Code having jurisdiction as it pertains to the prevention of contamination and protection from thermal expansion, due to a closed system that could occur with the present or future installation of backflow preventers on the customer's service and/or at plumbing fixtures.

3. For cross-connection control or other public health-related surveys, the customer agrees to provide for TPUD's employees or agents free access to all parts of the premises during reasonable working hours of the day for routine surveys and at all times during emergencies.

   Where agreement for free access for TPUD's survey is denied, TPUD may supply water service provided that premises isolation is provided through a DOH- approved reduced-pressure principle backflow assembly (RPBA).

4. The customer agrees to install all backflow prevention assemblies requested by the TPUD and to maintain those assemblies in good working order. The assemblies shall be of a type, size, and make approved by DOH and acceptable to TPUD. The assemblies shall be installed in accordance with the recommendations given in the most recently published edition of the *Cross Connection Control Manual, Accepted Procedures and Practice,* published by the Pacific Northwest Section, American Water Works Association, or latest edition thereof. The assemblies shall be installed in accordance with TPUD's construction standards and specifications.

5. The customer agrees to:
   (a) Have all assemblies (e.g., RPBAs and/or DCVAs) that TPUD relies upon to protect the public water distribution system tested upon installation, annually thereafter and/or more frequently if requested by TPUD, after repair, and after relocation;
   (b) Have all testing done by a purveyor-approved and currently DOH-certified Backflow Assembly Tester (BAT);
   (c) Have the RPBA or DCVA tested in accordance with DOH-approved test procedures; and
   (d) Submit to the TPUD the results of the test(s) on TPUD-supplied test report forms within the time period specified by TPUD.

6. The customer agrees to bear all costs for the aforementioned installation, testing, repair, maintenance and replacement of the RPBA, RPDA, DCVA or DCDA installed to protect TPUD's distribution system.

7. At the time of application for service, if required by TPUD, the customer agrees to submit to TPUD plumbing plans and/or a cross-connection control survey of the premises conducted by a purveyor-approved and DOH-certified Cross-Connection Control Specialist (CCS).

   The cross-connection control survey shall assess the cross-connection hazards and list the backflow preventers provided within the premises. The results of the survey shall be submitted prior to TPUD turning on water service to a new customer. The cost of the survey shall be borne by the customer.

8. For classes of customers other than single-family residential, when required by TPUD, the customer agrees to periodically submit a cross-connection control re-survey of the premises by a DOH-certified CCS acceptable to TPUD. TPUD may require the re-survey to be performed in response to changes in the customer's plumbing or water use, or performed periodically (annually or less frequently) where TPUD considers the customer's plumbing system to be complex or subject to frequent changes in water use. The cost of the re-survey shall be borne by the customer.

9. Within 30 days of a request by TPUD, a residential customer shall agree to complete and submit to TPUD a "Water Use Questionnaire" for the purpose of surveying the

health hazard posed by the customer's plumbing system on TPUD's distribution system. Further, the residential customer agrees to provide within 30 days of a request by TPUD a cross-connection control survey of the premises by a DOH-certified CCS acceptable to TPUD.

10. The customer agrees to obtain the prior approval from TPUD for all changes in water use, and alterations and additions to the plumbing system, and shall comply with any additional requirements imposed by TPUD for cross-connection control.

11. The customer agrees to immediately notify TPUD and the local health jurisdiction of any backflow incident occurring within the customer's premises (i.e., entry of any contaminant/pollutant into the drinking water) and shall cooperate fully with TPUD to determine the reason for the backflow incident.

12. The customer acknowledges the right of TPUD to discontinue the water supply within 72 hours of giving notice to the customer, or a lesser period of time if required to protect public health, if the customer fails to cooperate with TPUD in the survey of premises, in the installation, maintenance, repair, inspection, or testing of backflow prevention assemblies or air gaps required by TPUD, or in TPUD's effort to contain a contaminant or pollutant that is detected in the customer's system.

    Without limiting the generality of the foregoing, in lieu of discontinuing water service, TPUD may install an RPBA on the service pipe to provide premises isolation, and recover all costs for the installation and subsequent maintenance and repair of the assembly, appurtenances, and enclosure from the customer as fees and charges for water. The failure of the customer to pay these fees and charges may result in termination of water service in accordance with TPUD's water billing policies.

13. Where TPUD imposes mandatory premises isolation in compliance with DOH regulations, or agrees to the customer's voluntary premises isolation through the installation of a RPBA immediately downstream of TPUD's water meter, the customer acknowledges his obligation to comply with the other cross-connection control regulations having jurisdiction (i.e., Uniform Plumbing Code). Although TPUD's requirements for installation, testing, and repair of backflow assemblies may be limited to the RPBAs used for premises isolation, the customer agrees to the other terms herein as a condition of allowing a direct connection to TPUD's service pipe.

14. The customer agrees to indemnify and hold harmless TPUD for all contamination of the customer's plumbing system or TPUD's distribution system that results from an unprotected or inadequately protected cross connection within the customer's premises. This indemnification shall pertain to all backflow conditions that may arise from TPUD's suspension of water supply or reduction of water pressure, recognizing that the air gap separation otherwise required would require the customer to provide adequate facilities to collect, store, and pump water for his/her premises.

15. The customer agrees that, in the event legal action is required and commenced

between TPUD and the customer to enforce the terms and conditions herein, the substantially prevailing party shall be entitled to reimbursement of all incurred costs and expenses including, but not limited to, reasonable attorney's fees as determined by the Court.

16. The customer acknowledges that TPUD's survey of a customer's premises is for the sole purpose of establishing TPUD's minimum requirements for the protection of the public water supply system, commensurate with TPUD's assessment of the degree of hazard.

    It shall not be assumed by the customer or any regulatory agency that TPUD's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by TPUD's personnel constitute an approval of the customer's plumbing system or an assurance to the customer of the absence of cross connections therein.

17. The customer acknowledges the right of TPUD, in keeping with changes to Washington State regulations, industry standards, or TPUD's risk management policies, to impose retroactive requirements for additional cross-connection control measures.

TPUD will record the customer's agreement to the above terms for service on an "Application for Water Service," "Application for Change of Water Service," "Water Use Questionnaire," or other such form prepared by the Purveyor and signed by the customer.

Implementation of the Cross-Connection Control Policy

TPUD will engage the services of a DOH-certified CCS to develop, implement and be in responsible charge of the TPUD cross-connection control program.

TPUD, under the direction of the aforementioned CCS, will prepare a written cross-connection control program plan to implement the requirements of this resolution. The written program shall be consistent with this resolution and shall comply with the requirements of Chapter 246-290 WAC (Group A Drinking Water Regulations).

TPUD will use the most recently published editions of the following publications as references and technical aids:

1. *Cross-Connection Control Manual, Accepted Procedures and Practice,* published by the Pacific Northwest Section, American Water Works Association, or latest edition thereof.

2. *Manual of Cross-Connection Control,* published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, or latest edition thereof.

3. *Cross-Connection Control Guidance Manual for Small Water Systems,* published by the DOH Office of Drinking Water.

TPUD will incorporate the written program plan into all Water System Plans and will submit the plan to DOH for approval when requested.

TPUD, in consultation with the aforementioned CCS, shall have the authority to make reasonable decisions related to cross connections in cases and situations not provided for in the resolution or written program.

If any provision in this resolution, or in the written cross-connection control program is found to be less stringent than or inconsistent with the Drinking Water Regulations (Chapter 246-290 WAC), or other Washington state statutes or rules, the more stringent state statute, rule, or regulation shall apply.

Said Resolution passed by the unanimous vote of the Commissioners.

We do further certify that said meeting was attended by all of the Commissioners of Public Utility District No. 1 of Thurston County and that the Resolution was adopted by the unanimous vote of the Commissioners of Public Utility District No. 1 of Thurston County.

Paul Pickett
Commissioner and President of PUD

Attest:

Alan M. Corwin
Commissioner and Secretary of PUD

Attachment 2

~~Cross Connection~~Cross-Connection Control Program -- Sample Forms and Letters

Public Utility District No. 1 of Thurston County

Sample Forms

- Backflow Prevention Assembly Test/Air Gap Inspection Report;
- Backflow Prevention Assembly Test/Air Gap Inspection Report - File Record;
- Backflow Assembly Testers - Pre-Approved for Submitting Test Reports;
- Preliminary Cross-~~-~~Connection Control Hazard Assessment Form – Non-Residential Customers;
- Cross-Connection Control Hazard Survey Report – Non-Residential Customers;
- Water Use Questionnaire - Residential Customers;
- Backflow Incident Report Form.

Sample Letters

- Request to Complete Water Use Questionnaire;
- Notice of Survey of Premises (Non-Residential/Multi-Family Residential) Customer Employed ~~Cross Connection~~Cross-Connection Control Specialist;
- Request to Install Backflow Prevention Assembly;
- Request to Submit Test of Backflow Prevention Assembly;
- Second Notice to Test Backflow Prevention Assembly.

~~April 2020~~Updated July 2023

Backflow Prevention Assembly Test/Air Gap Inspection Report

PWS ID _____ **WATER SYSTEM NAME** _____ **COUNTY** _____

ACCOUNT #_____**BACKFLOW PREVENTER ID** _____ **TEST REPORT ID** _____

NAME OF PREMISES _____**Commercial** ☐ **Residential** ☐

SERVICE ADDRESS _____**CITY** _____**ZIP** _____

CONTACT PERSON _____ **PHONE** ( ) _____ **FAX** ( ) _____

LOCATION OF ASSEMBLY _____

DOWNSTREAM PROCESS _____**DCVA** ☐ **RPBA** ☐ ☐ **PVBA** ☐ **OTHER** _____

NEW INSTALL☐ **EXISTING**☐ **REPLACEMENT**☐ **OLD SER. #** _____ **PROPER INSTALLATION? YES** ☐ **NO** ☐

MAKE OF ASSEMBLY_____**MODEL** _____**SERIAL NO**. _____**SIZE** .

INITIAL TEST **PASSED** ☐ **FAILED** ☐	**DCVA / RPBA CHECK VALVE NO.1** LEAKED ☐ _____ PSID	**DCVA / RPBA CHECK VALVE NO.2** LEAKED ☐ _____PSID	**RPBA** OPENED AT _____ PSID #1 CHECK _____PSID AIR GAP OK? _____	**PVBA/SVBA** AIR INLET OPENED AT_____PSID DID NOT OPEN ☐
NEW PARTS AND REPAIRS	CLEAN REPLACE PART ☐ ☐_____ ☐ ☐_____ ☐ ☐_____ ☐ ☐_____	CLEAN REPLACE PART ☐ ☐_____ ☐ ☐_____ ☐ ☐_____ ☐ ☐_____	CLEAN REPLACE PART ☐ ☐_____ ☐ ☐_____ ☐ ☐_____ ☐ ☐_____	CHECK VALVE HELD AT _____PSID LEAKED ☐ _____ CLEANED ☐ REPAIRED ☐
TEST AFTER REPAIRS **PASSED** ☐ **FAILED** ☐	LEAKED ☐ _____PSID	LEAKED ☐ _____PSID	OPENED AT _____PSID #1 CHECK_____PSID	AIR INLET _____ PSID CHK VALVE _____PSID

AIR GAP INSPECTION: Required minimum air gap separation provided? Yes ☐ No☐ **Detector Meter Reading** _____

REMARKS: _____ **LINE PRESSURE** _____**PSI**

_____**CONFINED SPACE?** _____

I certify that this report is accurate, and I have used WAC 246-290-490 approved test methods and test equipment.

TESTERS SIGNATURE: _____ **CERT. NO.** _____**DATE** ____ /_____/____

TESTERS NAME PRINTED: _____ **TESTERS PHONE # ( )** _____

REPAIRED BY: _____**DATE** ____/_____/_____

FINAL TEST BY:_____ **CERT. NO.** _____**DATE** _____/_____/_____

CALIB/VERIF DATE __ /__ /___ **GAUGE #** _____ **MODEL**_____ **SERVICE RESTORED? YES** ☐ **NO**☐
(SPECIALTY) PLUMBER CERT. NO. _____ **CONTRACTOR LICENSE NO.** _____

Backflow Prevention Assembly Test/Air Gap Inspection Report File Record

PWS Assigned Inventory Number: _____

Name of Premises:
Premises Address:
Location of Assembly:
Type of Hazard Isolated:
Assembly Type: **Assembly Size (inches):**
Make: **Model:** **Serial No.:**
Date Installed: **DOH-Approved? Y N**

Date Test Notice Issued	Date of Test Report	Name of Certified Tester (BAT)	BAT Certification Number	Results Satisfactory? Y/N+	Repairs Made? Y/N*

+Attach all ***Backflow Assembly Test/AG Inspection Report*** forms.
*Include retest after repairs as a separate line.

Comments/Notes (attach additional sheets if necessary):

_____
_____
_____

Backflow Assembly Testers Pre-Approved for Submitting Test Reports to Public Utility District No. 1 of Thurston County

{Insert date here}

The following table lists Backflow Assembly Testers (BATs) that are pre-approved to test backflow assemblies in our water system's service area. We compiled the list by identifying individual testers who requested to work in this area or who previously submitted properly completed test reports to our system. An asterisk (*) denotes BATs that are also DOH-certified Cross-Connection Control Specialists (CCSs). ***Note: listing does not constitute an endorsement of these BATs by our system or a certification of the quality of services they provide.***

To appear on our pre-approved BAT list, the tester must:

- Show proof of current BAT certification from DOH;
- Submit documentation that his/her assembly test equipment has been verified for accuracy within the last 12 months and calibrated if needed; and

As an alternative to the above, pre-approved testers must document that they appear on the approved BAT list of another nearby water system that has a testing QA/QC program acceptable to our system.

WAC 246-290-490 requires a DOH-certified BAT to test all assemblies (RPBA, RPDA, DCVA, etc.) that protect the distribution system. Assemblies that protect the public water system must be tested in accordance with DOH-approved field test procedures:

- Upon installation, and annually thereafter;
- After repair, reinstallation, or relocation; and
- After a backflow incident.

Note: the DOH BAT certification is a special certification separate from other waterworks operator certification categories, plumbing licenses, contractor registration, etc. Other licenses, certifications and/or registrations may be required to install backflow prevention assemblies and/or perform maintenance work on assemblies within buildings. **However, only a currently DOH-certified BAT may test the assemblies that protect the public water system from contamination.**

Name of Tester Company Name and Address	Phone Number	BAT Certificate Number

Preliminary Cross-Connection Control Hazard Assessment Form

Non-Residential Customers

Name of Customer or Business: _____
Address: _____
Phone Number: _____
Description of Business: _____

Is your business or premises of a type included in the table below (check all that apply)?

Agricultural (farm or dairy)		Metal plating industry	
Beverage bottling plant		Mortuary	
Car wash		Petroleum processing or storage plant	
Chemical plant		Pier or dock	
Commercial laundry or dry-cleaners		Radioactive material processing plant or nuclear reactor	
Having both reclaimed water and potable water provided		Survey access denied or restricted	
Film processing facility		Wastewater lift station or pumping station	
Food processing plant		Wastewater treatment plant	
Hospital, medical center, nursing home, veterinary, medical, or dental clinic, or blood plasma center		Having an unapproved auxiliary water supply interconnected with the potable water supply	
Having separate irrigation system using The District's water and adding chemicals*		Other (describe) *[*The District *to add other types of premises considered to be high-hazard]*	
Laboratory		Other (describe) *[See above]*	

*e.g., parks, playgrounds, golf courses, cemeteries, estates, etc.

Other potential cross-connection concerns:

☐ Irrigation system

☐ Fire sprinkler system, using ☐ not using ☐ chemicals or anti-freeze

☐ Swimming pool

☐ Other (describe): _____

Note to Customer: *This form is used for preliminary assessment only.* The District *may require a more thorough assessment at a later date.*

This form was completed by (print name): _____ Date: _____

Please return completed form by {insert date} and send to: Thurston Public Utility District, 1230 Ruddell Road SE, Lacey WA 98503.

Cross-Connection Control Hazard Survey Report
Non-Residential Customers

Cross-Connection & Backflow Prevention Hazard Analysis Survey

Site Address: _____ System: _____

Meter No. _____

Date Hazard Analysis Performed: _____

TPUD Personnel Performing Hazard Analysis _____

Property Type

Residential: _____ Commercial: _____ Industrial: _____ Other: _____

Type of Commercial / Industrial: _____

Is there an irrigation system present?	Yes: _____	No: _____
Is there an Auxiliary Water System present including wells, private storage tanks, reservoirs or systems capable of pumping water from lakes, streams, ponds etc?	Yes: _____	No: _____
Is there a dedicated Fire Line or Fire Sprinkler System Present?	Yes: _____	No: _____
Is the building taller than three stories?	Yes: _____	No: _____
Is there a Pool, Jacuzzi, Hot Tub, Ornamental Pond, Fountain or Solar Energy System Present?	Yes: _____	No: _____
Is the property being served by a reclaimed water system?	Yes: _____	No: _____
Any observed existing cross-connection?	Yes: _____	No: _____

Current Backflow Preventer Information

Size: _____

Manufacturer: _____

Model: _____

Serial Number: _____

Type: _____

If Backflow Prevention is Required but not Currently Installed Check Here.

☐

Comments:

Cross-Connection Control Form (residential)

CROSS-CONNECTION CONTROL REPORTING FORM

State law requires consumers of public water supplies to inspect their facilities no less than once every five years. Completing and returning this form fulfills that requirement!

COMPLETION OF THIS FORM IS A REQUIREMENT OF SERVICE.

Customer Name: _____

Service Address: _____

Primary Phone: _____ Alternate Phone: _____

	Yes	No
1. Underground lawn irrigation system?	◯	◯
If yes, is it protected by a testable backflow preventer?	◯	◯
2. Swimming pool or hot tub?	◯	◯
If yes, is it protected by a testable backflow preventer?	◯	◯
3. Photo, chemical, medical, or other lab facilities?	◯	◯
If yes, is it protected by a testable backflow preventer?	◯	◯
4. Private well or other source of water?	◯	◯
If yes, is it protected by a testable backflow preventer?	◯	◯
5. Boiler heat or water to air heat pump?	◯	◯
If yes, is it protected by a testable backflow preventer?	◯	◯
6. Garden hoses connected to possible contaminants?	◯	◯
If yes, is it protected by a hose bib vacuum breaker?	◯	◯
7. Water softener?	◯	◯
If yes, is it protected by an air gap?	◯	◯
8. Residential fire sprinkler system?	◯	◯
9. Animal watering troughs?	◯	◯
10. Home-based business?	◯	◯

If yes to number 10, please list type (e.g. beauty salon, machine shop, etc.) and describe below.

_____

_____

Failure to complete and return this form puts your water system in violation of State Health Department Regulation Title 179. If a completed form is not returned to our office, your water service may be subject to disconnection. Cross-connection is operated by TPUD Resolution 05-15. This resolution is available online at www.thurstonpud.org. If you have any questions, please contact our office at (866) 357-8783.

Signature: _____ Date: _____

Thank you. This form will help prevent the accidental contamination of our drinking water.

OFFICE USE ONLY		
Account Number:	Water System:	Initials:

~~April 2020~~Updated July 2023

THURSTON PUD CROSS-CONNECTION CONTROL QUESTIONNAIRE

Customer Name:	Click or tap here to enter text.		
Service Address:	Click or tap here to enter text.		
Primary Phone:	Click or tap here to enter text.	Alternate Phone:	Click or tap here to enter text.
Email Address:	Click or tap here to enter text.		

	Yes	No
1. Underground lawn irrigation system?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
2. Swimming pool or hot tub, connected to water system?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
3. Photo, chemical, medical, or other lab facilities?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
4. Private well or other non PUD source of water?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
5. Boiler heat or water to air heat pump?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
6. Garden hoses connected to possible contaminants?	☐	☐
If yes, is it protected by a hose bib vacuum breaker?	☐	☐
7. Water softener?	☐	☐
If yes, is it protected by an air gap?	☐	☐
8. Residential fire sprinkler system?	☐	☐
If yes, is it protected by a testable backflow preventer?	☐	☐
9. Animal watering troughs?	☐	☐
10. Home based business?	☐	☐

If yes to number 10, please list type and if connected to water system (e.g. beauty salon, machine shop, etc.). Click or tap here to enter text.

Failure to complete and return this form puts your water system in violation of State Health Department Regulation Title 179. Cross connection is operated by TPUD Resolution 05-15. This resolution is available online at www.thurstonpud.org. If you have any questions, please contact our office at (866) 357-8783.

	Click or tap here to enter text.	Date:	Click or tap to enter a date.

***Thank you.** This form will help prevent the accidental contamination of our drinking water.*

OFFICE USE ONLY					
Send Date:		Due Date:		Received Date:	
Account Number:		Water System:		Initials:	

1230 Ruddell Road SE, Lacey WA 98503

http://thurstonpud.org/docs/New%20Forms%20'18/CrossConnectionControlReportingForm01042018.pdf

~~K:\WATER SYSTEMS\Sanitary Surveys\Sanitary Survey Customer Cross Connection Questionnaire Lists~~

Backflow Incident Report Form

Reporting Agency: _____ Report Date: _____

Reported By: _____ Title: _____

Mail Address: _____ City: _____

State: _____ Zip Code: _____ Telephone: _____

Date of Incident: _____ Time of Occurrence: _____

General Location (Street, etc.): _____

Backflow Originated From:

Name of Premises: _____

Street Address: _____ City: _____

Contact Person: _____ Telephone: _____

Type of Business: _____

Description of Contaminants:
(Attach Chemical Analysis or MSDS if available)

_____

_____

Distribution of Contaminants:

Contained within customer's premises: Yes: _____ No: _____

Number of persons affected: _____

Effect of Contamination:

Illness Reported: _____

Physical irritation reported: _____

Backflow Incident Report Form
Page 2 of 3

Cross-Connection Source of Contaminant (boiler, chemical pump, irrigation system, etc.):

_____

_____

Cause of Backflow (main break, fire flow, etc.):

_____

_____

Corrective Action Taken to Restore Water Quality (main flushing, disinfection, etc.):

_____

_____

Corrective Action Ordered to Eliminate or Protect from ~~Cross Connection~~Cross-Connection (type of backflow preventer, location, etc.)

_____

_____

Previous Cross-Connection Survey of Premises:

Date: _____ By: _____

Types of Backflow Preventer Isolating Premises:

RPBA: _____ RPDA: _____ DCVA: _____ DCDA: _____ PVBA: _____ SVBA: _____

AVB: _____ Air Gap: _____ None: _____ Other Type: _____

Date of Latest Test of Assembly: _____

Backflow Incident Report Form
Page 3 of 3

Notification of Washington State Health Department:

Date: _____ Time: _____ Person Notified: _____

Many backflow incidents occur that are not reported. This is usually because:

- The incidents are of short duration;
- The incidents are not detected;
- Neither the customer nor the District realizes that a contamination was caused by a backflow incident;
- The customer is not aware the incident should be reported;
- Customers do not know who to report the incidents to; and/or
- Liability concerns on the part of either the customer or the District or both.

DOH and the PNWS-AWWA Cross-Connection Control Committee are making an effort to bring backflow incidents to the attention of water purveyors, Local Administrative Authorities, legislators, and the general public. If you have any knowledge of a backflow incident, please fill out a copy of the Backflow Incident Report Form and return it to DOH and the PNWS-AWWA CCC committee.

Attach sheets with additional information, sketches, and/or media information, and mail to:

PNWS-AWWA CCC Committee
c/o George Bratton
1252 S. Farragut Drive
Coupeville, WA 98239

~~April 2020~~Updated July 2023

Letter Requesting Customer to Complete Water Use Questionnaire

Commissioners¶
Linda·Oosterman—District·1¶
Russell·E.·Olsen—District·2¶
Chris·Stearns—District·3¶
¶
¶

Thurston PUD

Providing·safe,·reliable,·affordable,·and·sustainable·service.¶

Date¶
¶
Name¶
Address¶
CSZ¶
¶

This·is·a·Required·Survey.¶
Cross-Connection·Control·Questionnaire¶
Due:·Month·Day,·Year¶

How·Do·You·Use·Your·Water?·¶
¶
Protecting·public·health·is·a·priority·for·Thurston·PUD·and·the·Washington·State·Department·of·Health·(DOH).·In·order·to·do·so,·it·is·imperative·we·comply·with·the·regulations·outlined·in·the·Washington's·Administrative·Code·(WAC)·246-290-490.·¶
¶
DOH·conducts·Sanitary·Surveys·of·all·public·Group·A·water·systems.·These·surveys·are·thorough·inspections·of·the·PUD's·water·system·facilities,·records,·and·operations·to·identify·conditions·that·may·present·a·public·health·risk.·Large·water·systems,·like·the·one·you·live·on,·undergo·routine·surveys·every·3-5·years.¶
¶
One·component·of·the·survey·is·a·review·of·Thurston·PUD's·Cross-Connection·Control·Plan.·These·plans·help·prevent·drinking·water·contamination·within·water·systems.·The·information·we·gather·about·how·you·use·your·water·helps·us·deliver·safe,·reliable·water·to·your·home.¶

We·Need·Your·Help—·Complete·Documentation·is·Crucial·for·Proper·Evaluation¶
¶
Enclosed·is·a·Cross-Connection·Control·Questionnaire.·This·questionnaire·assists·in·determining·if·there·are·connections·between·the·public·water·supply·and·any·potentially·non-potable·substances,·or·in·other·words,·substances·not·appropriate·for·human·consumption.·**In·order·to·protect·you·and·remain·in·compliance,·please·fill·out·the·Cross-Connection·Control·Questionnaire·on·the·back·of·this·letter**.·The·form·is·also·available·as·a·fillable·pdf·at·http://thurstonpud.org/links-and-forms.htm·(Cross·Connection·Control·Questionnaire).¶
¶
Please·complete·and·return·the·enclosed·Cross-Connection·Control·Questionnaire·to·our·office·by·Month·Day,·Year.¶
¶
If·you·have·questions,·please·feel·free·to·contact·the·Planning·and·Compliance·Department·at·(360)·357-8783,·option·3·or·by·email·at·PUDPlanning@thurstonpud.org.¶
¶
Thank·you·in·advance·for·completing·and·returning·the·questionnaire.¶
¶
Regards,·¶
¶
¶
Kim·Gubbe¶
Director·of·Planning·and·Compliance¶
¶
Enclosure·¶
→ Cross-Connection·Control·Questionnaire¶

K:\Planning and Compliance\Cross Connection Control\Sanitary Survey - CCCQ\Correspondence - CCCQ\Final letters – Templates

~~April 2020~~Updated July 2023

Commissioners
Linda Oosterman – District 1
Russell E. Olsen – District 2
Chris Stearns – District 3

Thurston PUD
Providing safe, reliable, affordable, and sustainable service.

May 21, 2020

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

«AttnLine»

SUBJECT: Cross Connection Questionnaire Request

The «ServiceDistrict» takes pride in providing safe drinking water to our customers. Although the water that reaches your home or business meets all State and Federal drinking water standards and is safe to drink, contamination can still occur within your own plumbing system. This potential for contamination can be caused by an *unprotected cross connection* which is a connection between your drinking water and any substance other than drinking water. Examples of such a connection are: lawn sprinkler systems, livestock water troughs, swimming pools, decorative ponds, or even a garden hose submerged in a hot tub. Cross connections can pose a health risk if *backflow* occurs. Backflow is a reversal of the normal flow direction. (See the enclosed brochure for a better understanding of cross connections and backflow as well as the means of protection available)

The «Regulation» has established rules and requirements to enable the «ServiceDistrict» to protect our water system from contamination. One of these requirements is to implement a *Cross Connection Control Program*. The goal of this program is to identify potential cross connection hazards and take appropriate actions to protect against the possibility of backflow. This is accomplished by the installation of a backflow preventer, which is a mechanical unit designed to stop a flow reversal. Your help is needed to identify and control these hazards, because you are most familiar with how water is being used within your premises.

Please complete the enclosed Cross Connection Questionnaire so that we may better understand how your water is being used. Return it to us within 30 days of the date of this letter. Your participation is essential to the success of our Cross Connection Control Program.

Thank you for your cooperation in protecting our community's drinking water. Your prompt response is appreciated. Please contact us with any questions or updates to your account.

Sincerely,

«DistrictContact»
«ContactTitle»
«ContactPhone»

1230 Ruddell Rd. SE, Lacey, WA 98503
(866) 357-8783 • Fax (360) 357-1172 • www.thurstonpud.org

Notice of Survey of Premises
(Non-Residential/Multi-Family Residential)

Commissioners
Linda Oosterman – District 1
Russell E. Olsen – District 2
Chris Stearns – District 3

Thurston PUD
Providing safe, reliable, affordable, and sustainable service.

May 21, 2020

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

«AttnLine»

RE: «SAddress1» «SAddress2» «SCity» «SState»
SUBJECT: Notice of Initial Cross Connection Survey

The protection of the drinking water supply in «ServiceDistrict» is a matter of mutual concern and benefit. Pursuant to «Regulation» regulating our Cross Connection Control Program, we will soon be conducting surveys throughout our water system. We would appreciate your cooperation during this process.

Literature is enclosed which explains water quality issues and the need for cross connection control and backflow prevention. Please read and become familiar with the information as it answers the most frequently asked questions. We will be in touch to schedule an appointment for your survey.

If you would like to learn more about our Cross Connection Control Program, feel free to contact us at the number below.

Sincerely,

«DistrictContact»
«ContactTitle»
«ContactPhone»

1230 Ruddell Rd. SE, Lacey, WA 98503
(866) 357-8783 • Fax (360) 357-1172 • www.thurstonpud.org

Request to Install Backflow Prevention Assembly

Date

Customer Account Number (optional)
Customer Name
Customer Address Line 1
Customer Address Line 2

Dear _____ Water System Customer:

Washington State drinking water regulations, WAC 246-290-490, require public water systems to develop and implement cross-connection control programs. Cross-connection control programs protect public health by preventing contamination of the drinking water as it is delivered to people served by the water system. **The purpose of this letter is to inform you of a requirement to install a backflow assembly.**

Our water system's policy considers each of our customer's plumbing systems, starting from the termination of the service pipe downstream of the water meter, to pose a potential cross-connection hazard to the public water system. Our policy requires a backflow prevention assembly commensurate with the degree of hazard to be installed on the service line. The purpose of this backflow prevention assembly is to isolate your plumbing system from the water distribution system. We've attached a copy of Resolution {**insert number**} describing our cross-connection control policy.

We have received the cross-connection control survey report submitted by your Cross-Connection Control Specialist (CCS). The survey assessed the overall public health hazard posed by your plumbing system (and water use) to the public water system. We agree with the assessment made by the CCS. **Based on the assessment, a Department of Health-approved {insert type of assembly} is required to be installed on your service line (at a location downstream of the water meter).**

Please make arrangements for the assembly to be installed by {**insert date**} or when your plumbing system is modified, whichever comes sooner. We realize that this expense was not anticipated, so if you are unable to comply with this deadline, please contact us to discuss an alternative date. We've enclosed a copy of our standard installation drawings for this type of assembly. Your CCS should oversee the installation of the assembly to ensure compliance with these standards.

We appreciate your cooperation in this matter. If you have any questions, please contact me at (360) 357-8783.

Sincerely,

Name
CCC Program Manager

cc: {City/County Plumbing Inspector}

Enclosures: Standard Installation Drawings

~~April 2020~~Updated July 2023

Request To Submit Test of Backflow Prevention Assembly

Date

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

Subject: Annual Test Notice
Backflow Prevention Assembly at «SAddress1» «SCity»

Dear Customer Name,

In accordance with and to comply with Washington Administrative Code (WAC) 246-290-490, Thurston PUD developed a ~~Cross Connection~~Cross-Connection Control Plan (Board approved Resolution 05-15) to protect the safety of the public water system supply. Based on the ~~Cross Connection~~Cross-Connection Control Questionnaire you submitted indicating how water is used on your property, you are required to install a backflow prevention assembly and have it tested annually.

Our records indicate the backflow prevention assembly listed below is due for annual testing. The test must be completed by the due date specified below. We have included a list of Thurston PUD pre-verified testers on the reverse side of this letter.

Test Due	Device Serial	Device Location
«Status1»	«Serial»	«Location»

Once the test has been completed, please ensure the Tester forwards a copy of the report to us in one of the following ways:

Mail: 1230 Ruddell Road SE, Lacey, WA 98503
Email: backflow@thurstonpud.org
Fax: (360) 357-1172

Thank you for your cooperation in protecting our community's drinking water. If you have questions, please feel free to contact the Planning and Compliance Department at (360) 357–8783, option 3.

Sincerely,

Kim Gubbe
Director of Planning and Compliance

Enclosure
Pre-Approved Thurston PUD Backflow Assembly Tester List

K:\Planning and Compliance\Cross Connection Control\Correspondence and schedule - Backflow Testing\Final Letters

Commissioners
Linda Oosterman – District 1
Russell E. Olsen – District 2
Chris Stearns – District 3

Thurston PUD
Providing safe, reliable, affordable, and sustainable service.

May 21, 2020

Test to be completed by the end of «TestDue»

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

«AttnLine»

RE: Backflow Prevention Assembly(s) at «SAddress1» «SCity», «SState» «SZip»
SUBJECT: Annual Test Notice

Our records indicate the backflow prevention assembly(s) listed below are due for annual testing. The test(s) must be completed by the due date specified in the box above. A list of certified Backflow Assembly Testers who are qualified to test assemblies in the area is enclosed.

Serial Number	Last Test	Location
«Serial»	«Status1»	«Location»
«Serial2»	«Status2»	«Location2»
«Serial3»	«Status3»	«Location3»
«Serial4»	«Status4»	«Location4»
«Serial5»	«Status5»	«Location5»
«Serial6»	«Status6»	«Location6»
«Serial7»	«Status7»	«Location7»
«Serial8»	«Status8»	«Location8»
«Serial9»	«Status9»	«Location9»
«Serial10»	«Status10»	«Location10»

Once the test(s) has been completed, the Tester is required to provide you with a copy of the test report and forward a copy to the address below.

Thank you for your cooperation in protecting our community's drinking water. Your prompt response is appreciated. Please contact us with any questions or updates to your account.

Sincerely,

«DistrictContact»
«ContactTitle»
«ContactPhone»

1230 Ruddell Rd. SE, Lacey, WA 98503
(866) 357-8783 • Fax (360) 357-1172 • www.thurstonpud.org

Second Notice to Test Backflow Prevention Assembly

~~April 2020~~Updated July 2023

Commissioners
Linda Oosterman – District 1
Russell E. Olsen – District 2
Chris Stearns – District 3

Thurston PUD
Providing safe, reliable, affordable, and sustainable service.

May 21, 2020

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

«AttnLine»

RE: Backflow Prevention Assembly(s) at «SAddress1»
SUBJECT: First Notice of Non-Compliance

According to our records, the backflow prevention assembly(s) listed below is past due for annual testing. The test(s) were to be completed by the end of «TestDue». A list of certified Backflow Assembly Testers who are qualified to test assemblies in your area is enclosed. You have 15 days from the date of this letter to have the test(s) completed. The Tester you select must forward us the test report within this time frame.

Serial Number	Last Test	Location
«Serial»	«Status1»	«Location»
«Serial2»	«Status2»	«Location2»
«Serial3»	«Status3»	«Location3»
«Serial4»	«Status4»	«Location4»
«Serial5»	«Status5»	«Location5»
«Serial6»	«Status6»	«Location6»
«Serial7»	«Status7»	«Location7»
«Serial8»	«Status8»	«Location8»
«Serial9»	«Status9»	«Location9»
«Serial10»	«Status10»	«Location10»

Thank you for your cooperation in protecting our community's drinking water. Your prompt response is appreciated. Please contact us with any questions or updates to your account.

Sincerely,

«DistrictContact»
«ContactTitle»
«ContactPhone»

1230 Ruddell Rd. SE, Lacey, WA 98503
(866) 357-8783 • Fax (360) 357-1172 • www.thurstonpud.org

Date

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

Subject: Second Notice of Non-Compliance
Backflow Prevention Assembly Test Past Due at «SAddress1» «SCity»

~~April 2020~~Updated July 2023

Dear Customer Name,

According to our records, indicate that the backflow prevention assembly listed below is **past due** for annual testing. In 2023, Thurston PUD will begin enforcing our state mandated backflow assembly testing program in accordance with Washington Administrative Code WAC 246-290-490.

If your backflow assembly is not tested in a timely manner each year, your water service will be subject to disconnection. Thurston PUD reconnection policies and fees will apply.

If your property no longer requires a backflow prevention assembly (i.e., you have permanently decommissioned or removed your irrigation system), your backflow prevention device must be removed from the ground or capped off if you do not wish to have it tested annually. Your device test or device decommission must be completed by the due date specified below. We have included a list of Thurston PUD pre-verified testers on the reverse side of this letter.

Test Due	Device Serial	Device Location
<<Date>>	«Serial»	«Location»

Please ensure your Tester forwards a copy of the test report or device decommission/removal report to us in one of the following ways:

Mail: 1230 Ruddell Road, Lacey, WA 98503
Email: backflow@thurstonpud.org
Fax: (360) 357-1172

Thank you for your cooperation in protecting our community's drinking water. If you have questions, please feel free to contact the Planning and Compliance Department at (360) 357–8783, option 3.

Sincerely,

Kim Gubbe
Director of Planning and Compliance

Enclosure
Pre-Approved Thurston PUD Backflow Assembly Tester List

~~April 2020~~Updated July 2023

Third Notice to Test Backflow Prevention Assembly

Date

Test to be completed by «TestDue»

«CustomerName»
«MAddress1»
«MAddress2»
«MCity», «MState» «MZip»

Subject: First Notice of Non-Compliance
Backflow Prevention Assembly(s) at «SAddress1» «SCity»

Dear Customer Name,

According to our records, the backflow prevention assembly listed below is **past due** for annual testing. Please complete your test by the date listed in the box above. We have included a list of Thurston PUD pre-verified testers on the reverse side of this letter.

In accordance with Washington Administrative Code WAC 246-290-490, if your backflow assembly is not tested in a timely manner each year, your water service will be subject to disconnection. Thurston PUD reconnection policies and fees will apply.

If your property no longer requires a backflow prevention assembly (i.e., you have permanently decommissioned or removed your irrigation system), your backflow prevention device must be removed from the ground or capped off if you do not wish to have it tested annually. Your device test or device decommission must be completed by the due date specified below.

Test Due	Device Serial	Device Location
<<Date>>	«Serial»	«Location»

Please ensure your Tester forwards a copy of the test report or device decommission/removal report to us in one of the following ways:

Mail: 1230 Ruddell Road, Lacey, WA 98503
Email: backflow@thurstonpud.org
Fax: (360) 357-1172

Thank you for your cooperation in protecting our community's drinking water. If you have questions, please feel free to contact the Planning and Compliance Department at (360) 357–8783, option 3.

Sincerely,

Kim Gubbe
Director of Planning and Compliance

Enclosure
Pre-Approved Thurston PUD Backflow Assembly Tester List

Door Hanger Final Notice

YOUR IMMEDIATE ATTENTION IS NEEDED TO AVOID DISRUPTION TO YOUR WATER SERVICE

THURSTON PUBLIC UTILITY DISTRICT
1230 Ruddell Rd SE, Lacey WA 98503
Toll Free (866) 357-8783

Enclosed is a copy of the letter mailed to you on XXX notifying you of your backflow assembly test due by XXX. According to our records, we have not received a satisfactory test for your device. **Within ten (10) business days, please ensure you or your tester submits a satisfactory test report, or you may contact us with the testing company and scheduled date for the test to be completed or you will be subject to disconnection of water service due to non-compliance of District policies**. You or your tester may email a test report to backflow@thurstonpud.org.

Attachment 3

~~Cross Connection~~Cross-Connection Control Program -- Backflow Incident Response Plan
Public Utility District No. 1 of Thurston County

A. General

This Backflow Incident Response Plan is considered a supplement to the Emergency Response Plan.

The PUD will immediately begin a backflow incident investigation whenever the initial evaluation of a water quality complaint indicates that:

1. A backflow incident has occurred (i.e., drinking water supply has been contaminated) or may have occurred; or
2. The complaint can't be explained as a "normal" aesthetic problem.

Also, whenever a water main break (or power outage for pumped systems) causes a widespread loss of water pressure in the system (creating backsiphonage conditions), the PUD will initiate a check of distribution system water quality as a precursor to the need for a backflow incident investigation.

WAC 246-290-490 requires the PUD to notify DOH, the Local Administrative Authority and local health jurisdiction as soon as possible, but no later than the end of the next business day when a backflow incident contaminates the potable water supply (in the distribution system and/or in the customer's plumbing system). The PUD's list of emergency contact telephone numbers is included in the Water System Plan.

A backflow incident investigation is often a team effort. The investigation will be made by or initially led by the PUD's DOH-certified Cross-Connection Control Specialist. The investigation team may include state health (regional) staff, local health personnel and/or local plumbing inspectors.

B. Short List of Tasks

The PUD will use the following short list of tasks as initial guidance for dealing with backflow incidents. The PUD will also consult the most recently published edition of the PNWS-AWWA *Backflow Incident Investigation Procedures Manual* referenced above for greater detail as soon as possible after learning of a possible or confirmed backflow incident.

1. Customer Notification

a. As soon as possible, the PUD will notify customers not to consume or use water.

b. The PUD will start the notification with the customers nearest in location to the assumed source of contamination (usually the customer(s) making the water quality complaint).

c. The PUD will inform the customer about the reason for the backflow incident investigation and the PUD's efforts to restore water quality as soon as possible. The PUD will let the customer

know that customers will be informed when they may use water, the need to boil water used for consumption until a satisfactory bacteriological test result is obtained from the lab, etc.

d. Where a customer cannot be contacted immediately, the PUD will place a written notice on the front door handle, and a follow-up visit will be made to confirm that the customer received notice about the possible contamination of the water supply.

e. When dealing with a backflow incident, the PUD will let customers know that it could take several days to identify the source and type of contaminant(s) and to clean and disinfect the distribution system.

2. Identification of Source of Contamination

a. The PUD will give consideration to the distribution system as a potential source of the contaminant (e.g., air valve inlet below ground).

b. The PUD will not start flushing the distribution system until the source of contamination is identified (flushing may aggravate the backflow situation, and will likely remove the contaminant before a water sample can be collected to fully identify the contaminant).

c. The PUD will conduct a house-to-house survey to search for the source of contamination and the extent that the contaminant has spread through the distribution system. Note: a check of water meters may show a return of water (meter running backward) to the distribution system.

d. When the cross-connection responsible for the system contamination is located, the PUD may discontinue water service to that customer, until the customer completes the corrective action ordered by the PUD.

3. Isolation of Contaminated Portion of System

a. The PUD will isolate the portions of the system that are suspected of being contaminated by closing isolating valves; leave one valve open to ensure that positive water pressure is maintained throughout the isolated system.

b. The PUD will be sure to notify all affected customers in the isolated area first and then notify other customers served by the system.

4. Public Health Impacts

a. The PUD will seek immediate input from and work with state and local health agencies to accurately communicate and properly mitigate potential health effects resulting from the backflow incident.

b. If appropriate, the PUD will refer customers that may have consumed the contaminant or had their household (or commercial) plumbing systems contaminated to public health personnel and Local Administrative Authorities (plumbing inspectors).

5. Cleaning/Disinfecting the Distribution System

a. The PUD will develop and implement a program for cleaning the contaminated distribution

system consistent with the contaminant(s) identified.

b. Where both chemical and bacteriological contamination has occurred, the PUD will disinfect the system after the removal of the chemical contaminant.

c. Where any bacteriological contamination is suspected, the PUD will provide field disinfection.

C. Additional Information on Cleaning/Disinfecting the Distribution System

Most chemical or physical contaminants can be flushed from the water distribution system or customer's plumbing system with adequate flushing velocity. However, this may not be the case in systems where scale and corrosion deposits (e.g., tuberculation on old cast iron mains) provide a restriction to obtaining adequate flushing velocity, or where chemical deposits or bacteriological slimes (biofilm) are present (on which the chemical contaminant may adhere).

To remove a chemical or physical contaminant from the distribution system, the PUD may need to:

1. Physically clean the affected area using foam swabs (pigs); and/or
2. Alter the form of the chemical contaminant (e.g., through oxidation using chlorination or addition of detergents).

When adding any chemical (including chlorine) to remove a contaminant from the distribution system, it is essential that the PUD fully understand the chemistry of the contaminant. **Adding the wrong chemical could make the contaminant more toxic to customers and/or more difficult to remove from the distribution system.**

To disinfect water mains using the "slug" or "continuous flow" method, a field unit should be used for chlorine injection, such as a chemical feed - metering or proportioning pump for sodium hypochlorite. The PUD will contact the appropriate DOH regional office to discuss proposed approaches to contaminant removal and disinfection prior to taking corrective action.

Chapter 4
Asset Management Plan

4.1 Asset Management Plan

Thurston PUD has developed an *Asset Management Plan* (AMP) for all its water systems. The District's intention in developing the asset management program was to make capital and *operations and maintenance* (O&M) decisions based on knowledge of an asset's useful life, current condition, probability and consequence of failure, customer service level expectations and full life cycle costs. See example in **Appendix K.**

The AMP is a "living document" that changes as assets are replaced and at least bi-annually all cost replacements numbers are reviewed.

In developing the AMP, a listing of all assets owned by the system, known as an *asset inventory*, was completed. Thurston PUD's asset inventory includes a year-built date for all assets. Based on year-built data and accounting depreciation "useful life" standards, the District is able to estimate when an asset needs to be replaced, and an estimated cost for replacement, with a 3% inflation rate per year.

The District conducts assessments of each asset to determine its current condition. The District expects any additional analysis it conducts to lengthen the service life of the majority of its assets beyond current useful life assumptions. Additional analysis will also provide data that helps the District develop an O&M program aimed at lengthening the service life of assets where such efforts are advantageous based upon full life cycle costs.

Where such efforts are not advantageous, an asset could instead be allowed to "run to failure." Below is a list of factors the District considers when deciding to allow an asset run to failure:

- Group A water systems with redundancies
- Asset is considered "off the shelf" item and is commonly available; not a specialty item
- Asset can be accessed 24/7 - 365 days per year
- Asset can be replaced within an 8-hour period of time

In 2013, Thurston PUD conducted a cost of service rate study using outside consulting services in order to evaluate how best to meet future capital funding requirements as contained in the Asset Management Plan. The District then reached out to customers to better understand their level of service expectations and willingness to pay. In 2015, the District implemented a monthly Capital Improvement Surcharge to help pay for the replacement of assets.

4.2 Capital Improvement Plans

Thurston PUD uses the AMP to help develop the annual budget and Capital Improvement Plan (CIP) for the District as a whole. The CIP is updated, as needed, and approved by the Commissioners by resolution. The approved CIP can be found on our website at Thurston PUD - Our Rates (See ~~2020~~ 2023 Capital Improvement Budget in **Appendix L**)

Since the District takes most of its assets to failure, it is hard to predict which assets will be replaced per year, so past actual costs are also used for planning the annual budget. Notably, the PUD has discovered that assets originally installed in the 1970's, are functioning for about double the life cycle than assets replaced in the 1990's.

For individual systems, CIPs are developed using the AMP that include projects to maintain and protect public health for a 10- and 20-year period. These individual plans are found in the Part B WSP. For each CIP item, a project cost is developed, which includes construction costs plus allowances for sales tax, design fees, and administrative costs.

New Regulations, like PFAS Testing, may require the District to add new projects to the CIP between updating the whole Part A Water System Plan. In order for the District to find funding, the District will follow their standard procedure of adding to current approved CIP and requesting approval to seek funding by resolution to Commissioners.

CERTIFIED COPY OF RESOLUTION
ADOPTED AT THE REGULAR MEETING OF THE COMMISSIONERS
OF
PUBLIC UTILITY DISTRICT NO. 1 OF THURSTON COUNTY

The President and Secretary of the Public Utility District No. 1 of Thurston County (District) certify that a majority of the Commissioners of the District were in attendance at the meeting held on Tuesday, May 23, 2023, and adopted this Resolution. This Resolution has not been revoked.

RESOLUTION NO. 23-15

The Second Amended Capital Budget for the year 2023 has been filed in the records of the District.

The Commissioners have discussed the Second Amended 2023 Capital Budget at the public meeting of May 9, 2023.

NOW, THEREFORE, THE COMMISSIONERS OF THE DISTRICT DO HEREBY RESOLVE AS FOLLOWS:

Section 1. The Second Amended 2023 Capital Budget, a copy of which is attached is adopted as the Operating Budget of Public Utility District No. 1 of Thurston County.

Section 2. Resolution 23-03 is amended to conform to this resolution.

This Resolution was approved and adopted by a majority vote of the Commissioners present.

We additionally certify that this meeting was attended by at least two of the three Commissioners of the District and that this resolution was adopted by a majority vote of the Commissioners of the District in attendance at the meeting.

Christopher Stearns
Christopher Stearns (May 24, 2023 01:32 PDT)

Christopher Stearns
Commissioner and President of
Public Utility District No. 1 of Thurston County

ATTEST:

Linda Oosterman
Linda Oosterman (May 24, 2023 15:09 PDT)

Linda Oosterman
Commissioner and Acting Secretary

Attached: Second Amended 2023 Capital Budget

Thurston PUD
2023 Proposed 2nd Amended Capital Budget

Project Code	Water System PUD Number	Project Description	Adopted 1st Amended 2023 Capital Budget	Revision	Proposed 2nd Amended 2023 Capital Budget
Capital Improvements					
CI-41	multiple	Isolation Valve Maintenance	100,000		100,000
CI-44	multiple	Rebuild Pumphouses (PW)	294,805		294,805
CI-62	multiple	Treatment Systems Upgrade/Media	115,000		115,000
CI-65	multiple	Replace Plumbing/Pressure Tanks	40,000		40,000
CI-66	multiple	Multiple System Upgrades	150,000		150,000
CI-71	multiple	Electrical Controls Upgrades	50,000		50,000
CI-75	multiple	Source and Service Meter Replacement	100,000	50,000	150,000
CI-76	multiple	Well and Booster Pump Replacement	250,000		250,000
CI-89	215	Deschutes Glen Reservoir Replacement	75,000		75,000
CI-96	multiple	Sampling Stations	10,000		10,000
CI-98	multiple	New Meter Installation	150,000		150,000
CI-100	multiple	Combine 4 Grp A water systems in Thurston Co DWSRF	1,673,945		1,673,945
CI-102	239	Tolmie Consolidation	1,500,000		1,500,000
CI-104	610	Webster Hill New Treatment	50,000		50,000
CI-105	multiple	Water Systems Emergency Preparedness	150,000		150,000
CI-106	500	Pattison Infrastructure Replacement and Upgrades DWSRF	3,141,500		3,141,500
CI-107	521	Country Club Estates DWSRF	756,400		756,400
CI-108	522	Glen Alder DWSRF	517,480		517,480
CI-109	351	PFOA/PFAS Treatment	1,100,000	8,900,000	10,000,000
CI-110	690	Meadows Generator and Two Portable Generators FEMA	210,000	20,000	230,000
CI-111	680	Green Cove Culvert Replacement	670,000	430,000	1,100,000
		20% contingency on asset management plan estimates	180,000	(50,000)	130,000
		Subtotal - Capital Improvements	**$ 11,284,130**	**$ 9,350,000**	**$ 20,634,130**
Water System Management					
WM-1	NA	Acquisitions and Disposal of Water Systems	50,000		50,000
WM-4	NA	Water System Plan - Part B	40,000		40,000
WM-4	600	Tanglewilde Water System Plan Update and Engineering DWSRF	390,660		390,660
WM-14	NA	Fleet	150,000	160,000	310,000
WM-29	NA	Building Improvements and Upgrades	100,000		100,000
WM-33	NA	Easements	30,000		30,000
WM-38	NA	Geographic Information System (GIS) Program	10,000		10,000
WM-39	NA	Emergency Preparedness - Facilities and Staff	20,000	5,000	25,000
		Subtotal - Water System Management	790,660	165,000	955,660
		Total - Capital Improvement Program	**$ 12,074,790**	**$ 9,515,000**	**$ 21,589,790**
Funding					
	Transfer from Vehicle/Equipment Replacement Fund		150,000		150,000
	Transfer from Facilities Reserve Fund		25,000		25,000
	Transfer from Capital Surcharge Funding		1,120,000		1,120,000
	Water Revenue Bond 2020		755,481	185,000	940,481
	General Facilities Charge Fund		50,000		50,000
	PWTF Loans 2018		224,805		224,805
	DWSRF Loan/Grant - 4 Group A's Thurston County		1,473,945		1,473,945
	FEMA Grant - Water System Generators		199,519		199,519
	DWSRF Loan/Grant - Pattison Consolidation and Replacement		3,141,500		3,141,500
	DWSRF Loan/Grant - Country Club Estates Consolidation and Replacement		756,400		756,400
	DWSRF Loan/Grant - Glen Alder Consolidation and Replacement		517,480		517,480
	DWSRF Loan/Grant - Tanglewilde Water System Plan Update and Engineering		390,660		390,660
	DWSRF Loan, Grant, Bond or Additional Funding Needed		3,270,000	9,330,000	12,600,000
Total Other Funding			**$ 12,074,790**	**$ 9,515,000**	**$ 21,589,790**
TOTAL CIP FUNDING FROM RATES (TO RESERVES)			**$ -**	**$ -**	**$ -**

2023 Capital Budget – Proposed 2nd Amended Project Code Explanations

The Capital Budget proposed revisions are marked in red.

CI-41 Isolation Valve Maintenance: Project to ensure all isolation valves are in working order so that when needed the main can be shut down in sections to do repairs. This reduces the number of customers affected by any planned or emergency repair on the mainline or service connections. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-44 Rebuild Pump Houses: Project to rebuild pump houses that are at the end of their useful lives. Asset Management Plan. Public Works Trust Fund Loan was obtained; this line item includes five pump house projects (Brown South Prairie, Garden Acres 1, Marshall, Nisqually Vista, and Olin for three years (2021 – 2023)).

CI-62 Treatment Systems Upgrade/Media: Annual program to upgrade treatment systems or replace critical equipment needed for treatment on existing water systems. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-65 Replace Plumbing/Pressure Tanks: Annual program to replace pressure tanks and plumbing in the pump houses. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-66 Multiple Systems Upgrade: Annual program to upgrade water systems to enhance the life of the asset or solve issues identified by DOH as they come up. We can't always project where the failures will be. We analyze historical costs to determine the average cost and use this for miscellaneous projects. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-71 Electrical Controls Upgrades: Annual program to resolve issues with pumping controls and electrical wiring in pump houses. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-75 Source and Service Meter Replacement: Annual program to replace service and source meters as needed. Project identified in the Asset Management Plan, funded by capital surcharges. This project required additional funding.

CI-76 Well and Booster Pump Replacement: Annual program to replace well and booster pumps. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-89 Deschutes Glen Reservoir Replacement This project includes replacing reservoir and pumphouse. Project identified in the Asset Management Plan, funded by capital surcharges.

CI-96 Sampling Stations: Project to install sampling stations on water systems to make it more efficient and accurate to take required water samples. The project funding is reduced.

2023 Capital Budget – Proposed 2nd Amended Project Code Explanations, continued

CI-98 New Meter Installation: Project to install meters at customer services where there was not previously a meter and where the customer has been paying the higher unmetered rate.

CI-100 Combine 4 Group A water systems in Thurston County (DWSRF): This project includes the combining of four Group A water systems to include a new reservoir, booster pumps and mainline. Drinking Water State Revolving Fund Loan (DWSRF) and Grant funding was obtained to complete this project. This project will require additional funding.

CI-102 Tolmie Consolidation: This project includes the combining of three Group A water systems. District staff is pursing external funding sources.

CI-103 Boots and Saddles New Treatment This project includes the installation of treatment to remove iron and manganese. This is new infrastructure, funded by bond proceeds. This project is removed from the 2023 Capital Budget.

CI-104 Webster Hill New Treatment: This project includes the installation of treatment to remove iron and manganese. This is new infrastructure, funded by bond proceeds.

CI-105 Water System Emergency Preparedness: This project includes the installation of water trees and an earthquake early warning system. This is new infrastructure, funded by bond proceeds.

CI-106 Pattison Infrastructure Replacement and Upgrades (DWSRF): This project includes installing a new well, booster pump stations, and reservoir. Drinking Water State Revolving Fund Loan (DWSRF) and Grant funding was obtained to complete this project.

CI-107 Country Club Estates (DWSRF): This project includes replacement of water mains, service meters, and upgrading the existing treatment system. Drinking Water State Revolving Fund Loan (DWSRF) and Grant funding was obtained to complete this project. The customers on this water system are being charged a special capital surcharge for their water improvements identified prior to PUD ownership.

CI-108 Glen Alder (DWSRF): This project includes replacement of water mains, service meters, and installing a permanent generator. Drinking Water State Revolving Fund Loan (DWSRF) and Grant funding was obtained to complete this project. The customers on this water system are being charged a special capital surcharge for their water improvements identified prior to PUD ownership.

2023 Capital Budget – Proposed 2nd Amended Project Code Explanations, continued

CI-109 PFOA/PFAS Treatment: This project includes the installation of treatment to remove Per- and polyfluoroalkyl substances (PFAS). The project is required at the following nine (9) water systems:

1. Whiskey Hollow
2. Crescent Park
3. Spanaway 192nd
4. Burnsville
5. Tanglewilde
6. Horsfall
7. Sandra Avenue
8. East Olympia
9. Lazy Acres

These projects will require new infrastructure; District staff is pursing external funding sources.

CI-110 Meadows Generator and Two Portable Generators: Project to acquire two (2) portable generators and install one (1) permanent generator at the Meadows Water System to reduce the delay in restoring power to operate water systems during an emergency. Federal Emergency Management Agency (FEMA) Hazard Mitigation grant was obtained to fund this project. This project required additional funding.

CI-111 Green Cove Culvert Replacement: Thurston County Public Works has determined the culvert carrying Green Cove Creek under Country Club Road NW is collapsing. This project will require a temporary water main is installed during construction to maintain service as well as installation of a new, permanent water main after construction is complete. District staff is pursing external funding sources. This project required additional funding.

Contingency: This line item is reserved for contingency.

WM-1 Acquisition and Disposal of New Water Systems: Line item reserved to provide funding to evaluate water systems for acquisition.

WM-4 Water System Plan – Part B: Line item to track the cost of updates to the water system plans or small water system management plans for individual water systems.

WM-4 Tanglewilde Water System Plan Update and Engineering: Line item to track the cost of updates to the water system plans or small water system management plans for individual water systems. This line item was added to 2023 to complete the project. A DWSRF loan was obtained to complete this project.

WM-14 Fleet: Line item authorizes the replacement our field vehicles. Project funded by the vehicle and equipment replacement fund. Includes two (2) additional vehicles, funded by Water Revenue Bond 2020 Proceeds.

2023 Capital Budget – Proposed 2nd Amended Project Code Explanations, continued

WM-29 Building Upgrades: This line represents projects to replace the roof on the Administrative Building on Ruddell Road and to remodel the field office at 6800 Meridian Road. Project funded by bond proceeds, and a transfer from the vehicle, building and equipment replacement fund.

WM-33 Easements: Line item for expenditures associated with the negotiation and recording of new easements for the District's water system infrastructure. Project funded by bond proceeds.

WM-34 Audio/Visual Technology: This project includes the installation of Audio/Visual Technology in the Commissioner Meeting Room to enable the use of technology supporting remote attendance at Board meetings. Project is funded by bond proceeds.

WM-38 Geographic Information System (GIS) Program: This line item is for the purchase of equipment needed for the District's GIS Program. Project funded by bond proceeds.

WM-39 Emergency Preparedness – Facilities and Staff: This line item is for items needed to prepare the District for emergencies. Project funded by bond proceeds. This project required additional funding.

2023 Capital Budget Funding Sources

After projects are identified, it is the District's guiding principle for funding to first determine if the project should be funded with District reserves including capital surcharges, general facility charges, vehicle, facility and replacements and water rate revenue. Next, District staff will research available funding through state agencies. As a last resort, the District will use available bond proceeds to fund projects.

Transfer from Vehicle/Equipment Replacement Fund: Amounts held in reserve for vehicle and equipment replacements.

Transfer from Capital Surcharge Funding: Amounts held in reserve from previous surcharge collection.

Transfer from Water Fund Reserve: Amounts held in reserve from water revenues.

Water Revenue Bond 2020: Amounts obtained from financing in January 2020 to use for acquisitions and capital funding.

General Facilities Charge (GFC) Fund: Currently $5,000 paid by customers for new services.

PWTF Loans 2018: District was awarded and has accepted three (3) loans from the Public Works Trust Fund to drill new wells, rebuild pump houses and decommission old unused wells.

DWSRF Loans/Grant: The District was awarded and accepted loans with loan forgiveness from the Drinking Water State Revolving Fund for water system improvements.

FEMA Hazard Mitigation Grant: The District was awarded and has accepted a grant from the Federal Emergency Management Agency to install a generator at the Meadows, Group A water system and purchase two trailer mounted generators in preparation for water outage emergencies.

Proposed Additional Loan/Grant Funding Needed: The District will pursue outside sources of funding to complete this portion of the capital budget.

Resolution 23-15

Final Audit Report 2023-05-24

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