Cross-Connection Control for Small Water Systems 331-234

Appendices Only

Appendix A
Example Cross-Connection Control Program and Legal Instrument for a Community System

Contents

This appendix contains an example written cross-connection control (CCC) program plan and an example legal instrument for a community system. The legal instrument establishes the authority of a public water system (PWS) to adopt and implement a CCC program.

The primary type of program that these documents address is a **premises isolation** type of program. However, alternate wording or passages are included for **combination** or **joint** types of programs. Other commonly used alternate approaches and optional additional requirements are also included where appropriate.

How to Use Appendix A

The example program and legal instrument in Appendix A have been designed for use by community systems where the majority of the service connections are residences or premises owned or occupied by private or public entities separate from the purveyor.

The documents in this appendix have been arranged and formatted for ease of review by the Washington State Department of Health (DOH) when it evaluates the program with respect to the regulations. Therefore, DOH recommends that purveyors follow the format (i.e., use the example program as a template) whenever possible. *However, PWSs are not required to use the example program and legal instrument.* DOH recognizes that some PWSs may have a particular approach or institutional requirements that may dictate a different format or wording in the written program plan.

Instructions

To use the example program plan, water systems are encouraged to:

1. Download the example program file (in Microsoft Word format) from the web site or obtain from DOH electronically;
2. Retain the basic formatting and text of the example program and fill in the blanks, decision table, and check boxes where indicated to "customize" the example program;
3. Include or delete optional and/or additional language shown in the example program to reflect system-specific decisions; and
4. Insert the completed written CCC program plan in the Small Water System Management Program (SWSMP) or Water System Plan (WSP).

Cross-Connection Control Program Plan for _____ Water System

A. Requirement for Program

{Insert public water system name}, {insert public water system identification number}, hereinafter referred to as "the Purveyor", has the responsibility to protect the public water system 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. Prohibition of the return of used water into the public water system (PWS) distribution system; and
3. Inclusion of a written CCC program in a Water System Plan (WSP) or a Small Water System Management Program (SWSMP).

Note: Throughout the example 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 example 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 CCC program are to:

1. Reasonably reduce the risk of contamination of the public water distribution system; and
2. Reasonably reduce the Purveyor'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; and
3. ***[Add for Joint Program:*** *"Cooperate with the LAA by joint operation of program administrative tasks."****]***

C. Summary of Program Decisions

The following table summarizes the major policy and program decisions adopted for the **{Insert PWS name}** water system. The items in the table represent CCC program areas that have more than one acceptable approach or option. ***(The PWS should mark the appropriate boxes under "Decision" in the following table.)***

CCC Program Decision Summary Table for the {Insert PWS name}

Decision Item	Decision
1. Type of Program [General, WAC 246-290-490(2)(e)]	
a. Premises isolation only	
b. Premises isolation and in-premises protection (combination program)	
2. Extent of Coordination with LAA [WAC 246-290-490(2)(d)]	
a. Information exchange	
b. Interaction	
c. Joint program	
3. Relationship with Customer [Element 1]	
a. Signed service agreement or contract	
b. Ordinance/resolution; implied service agreement	
4. Enforcement of Corrective Action [Element 1]	
a. Rely upon shut-off of water service	
b. Rely upon purveyor-installed premises isolation	
5. Assessment and Re-assessment of Hazard [Element 2]	
a. By purveyor's staff or equivalent	
b. By cross-connection control specialist (CCS) employed by customer; report reviewed by purveyor's CCS	
6. Location and Ownership of Premises Isolation Assembly [Element 3]	
a. On purveyor's service line	
b. On customer's service line	
7. CCS Option – Purveyor's Program Management [Element 4]	
a. Purveyor's staff member certified	
b. Inter-agency agreement or use other agency's CCS	
c. Contract with consultant CCS	
8. Testing of Assemblies [Element 5]	
a. By purveyor's staff or purveyor-employed backflow assembly tester (BAT)	
b. By customer-employed (contractor) BAT	
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	

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 water system 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 **{Insert PWS name}** water system has adopted a resolution (Resolution No. _____), reproduced as Exhibit _____, which authorizes the Purveyor 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. ***[Optional approach*:** "*by the water system, and the cost thereof to be billed to the customer."* (see Decision Table Items 6 and 9)***] (The Purveyor can substitute appropriate wording to reflect alternate decisions made by the PWS.)***

The attached service contract referred to in the resolution shall be the primary enforcement authority for all new customers.

For customers supplied prior to the adoption of the attached resolution, an implied service contract allows the Purveyor to protect the distribution system from contamination through a Purveyor-installed backflow preventer on a customer's service.

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

(The Purveyor should complete and include the following schedule for adoption of a legal instrument, if not already adopted:

Legal Instrument Status	***Schedule***
Preparation of proposed legal instrument	
Introduction of the legal instrument to governing body	
Adoption of legal instrument	
Legal instrument becomes effective	

*Schedules may vary depending on governing body procedures.**)***

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 Purveyor 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). ***[Combination or Joint Program Alternative:*** *"or commensurate in-premises backflow protection."****]*** The Purveyor may accept the recommendations or submit the recommendations to a CCS employed by the PWS 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 Purveyor will require that the customer submit with the application for water service a completed "Water Use Questionnaire" (copy shown on page **{PWS insert page number here}**). 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 Purveyor 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. ***[Combination or Joint Program Alternative:*** *"or commensurate in-premises protection."****]***

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

3. For all ***existing non-residential services***, the Purveyor will require the customer to submit to the Purveyor, within nine months 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. ***[Combination or Joint Program Alternative:*** *"or commensurate in-premises backflow preventers."****]*** The Purveyor may accept the recommendations or submit the recommendations to a CCS employed by the Purveyor 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 Purveyor or an alternate time period acceptable to the Purveyor.
4. For all ***existing residential services***, the Purveyor will require the customer to submit to the

Purveyor, within four months 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 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. ***[Combination or Joint Program Alternative: "****or commensurate in-premises backflow preventers".****]***

As an alternative to the above requirement for a survey by a CCS, the Purveyor may specify the backflow preventer required to be installed as a condition of service. The Purveyor'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 Purveyor may have the assessment made by a CCS employed by the Purveyor, 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 Purveyor will require the customer to submit to the Purveyor, within two months of purveyor 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 Purveyor will require the customer to submit to the

Purveyor, within two months of purveyor 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 years and upon change in use or ownership
[Combination or Joint Program Alternative*:** Commercial services when purveyor relies upon in-premises protection]***	Every two years and upon change in use, ownership, or plumbing system
Residential services with special plumbing where the purveyor relies upon compliance with Uniform Plumbing Code (UPC)	Every 2-3 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 Purveyor will inform the customer that the Purveyor's survey of a customer's premises (whether by a representative of the Purveyor or through the evaluation of a questionnaire completed by the customer) is for the sole purpose of establishing the Purveyor's minimum requirements for the protection of the public water supply system, and that the required backflow protection will be commensurate with the Purveyor's assessment of the degree of hazard.

The Purveyor will also inform the customer or any regulatory agencies that the Purveyor'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 purveyor'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 Purveyor 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 Purveyor. All high-hazard connections of the type described in Table 9 of WAC 246-290-490 shall be isolated with an RPBA. ***[Recommended Option: "****All other non-residential customers shall be isolated with a DCVA."****]***

   [Optional Combination or Joint Program Alternative: *"In lieu of isolation with a DCVA, other non-residential customers, with the concurrence of the Purveyor's CCS, may install in-premises protection commensurate with the degree of hazard, as determined by the Purveyor's CCS."****]***

2. The Purveyor 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. ***[Optional addition: "Additional premises requiring premises isolation.*** *The Purveyor 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 aircraft and automotive manufacturers, pulp and paper mills, military bases, tall buildings, premises with complex plumbing, premises with plumbing subject to frequent changes, plumbing with a repeat history of cross-connections being established or reestablished, premises with public swimming pools, and {Purveyor should add other premises or premises types}."****]***

4. ***[Optional addition:*** *"All remaining residential customers will be isolated at the meter by a purveyor-installed meter check valve (single or dual)."****] [Combination or Joint Program Alternative: "****Residential customers not required to be isolated with an RPBA may install in-premises protection in accordance with the Uniform Plumbing Code (UPC) in lieu of isolation with a DCVA."****]***

5. **For all customers that have a written service contract with the Purveyor**, 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 Purveyor's standards described hereinafter; and
- Maintained, tested, and inspected in accordance with the Purveyor's standards described hereinafter.

For new customers, the Purveyor 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 Purveyor's installation and maintenance requirements shall constitute a breach of contract by the customer. The Purveyor may then proceed with corrective action provisions stipulated in the contract.

6. **Customers without written contracts** are considered to have an implied contract that requires the customer to bear all reasonable costs of service. The Purveyor 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 Purveyor'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 Purveyor 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 Purveyor's installation standards described hereinafter.

7. **Approved Backflow Preventers and Installation**

   All backflow preventers relied upon by the Purveyor to protect the public water system shall meet the definition of "approved backflow preventer" as contained in WAC 246-290-010. The Purveyor 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. ***[Optional Alternative:*** *"Installation shall conform to standard construction drawings and specifications of the Purveyor."* ***]***

The Purveyor 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 Purveyor 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 Purveyor's distribution system.

The Purveyor will inform the customer that any action taken by the Purveyor shall not be construed by the customer as guidance on the safety or reliability of the customer's plumbing system. The Purveyor 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 Purveyor's distribution system, the Purveyor will not undertake work on the customer's premises.

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

The following table shows the schedule that the Purveyor 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 purveyor's water	Within 1 year after notification (suggested)

The Purveyor 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 Purveyor. General policy direction and risk management decisions are established by the {**insert name of governing body such as the board of directors, commissioners, town council, etc.**}. ***[Add for Joint Program:*** *"By an inter-agency agreement, the Local Administrative Authority (LAA) may undertake certain administrative tasks, and the Purveyor may undertake additional tasks to assist the LAA."* ***]***

2. The Purveyor 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 Purveyor 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 Purveyor'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 Purveyor 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 Purveyor to manage the Purveyor's CCC program and/or act as the CCC technical resource for the Purveyor:

Name of CCS	
Address	
City, State, Zip	
Telephone Number	
CCS Certification Number	

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 Purveyor relies upon for protection of the water system will be subject to inspection and, if applicable, testing. ***[Add for Combination or Joint Program:*** *"This includes backflow preventers installed for in-premises protection that the Purveyor relies upon for protection of the water systems."****]***

Inspection and testing of backflow preventers will be as follows:

- The Purveyor'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 Purveyor 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 Purveyor 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 Purveyor will be responsible for inspection and testing of all purveyor-owned backflow preventers.

The Purveyor 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 ***[Recommended Optional Alternative:*** *"pre-approved by the Purveyor"**]*** to conduct the inspection and test within the time period specified in the testing notice sent by the Purveyor. The test report shall be completed and signed by the BAT, then countersigned and returned by the customer to the Purveyor, before the due date specified by the Purveyor. The customer may request an extension of the due date for returning a test report by submitting a written request to the Purveyor. The Purveyor may grant one extension up to 90 days.

4. Approved Test Procedures

The Purveyor 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 Purveyor's CCS.

[Optional: *"The Purveyor will require all assembly tests to be reported on the form shown in Appendix {**PWS insert letter here**} and returned as specified above."**]***

5. Notification of Inspection and/or Testing

The Purveyor 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 Purveyor.

6. Enforcement

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

- The Purveyor 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 Purveyor will send a third notice, by certified mail, ***[Optional:*** *"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 Purveyor 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 Purveyor within 10 days of the due date specified in the third notice, the Purveyor will implement water service shut-off procedures.
- ***[Optional Procedure Prior to Shut-Off:*** *"The Purveyor will 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. ***[Recommended Option: "List of Pre-Approved BATs***

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

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

   [Optional addition: *The Purveyor will also maintain a list of local DOH-certified CCSs that are pre-approved by the Purveyor 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."***]***

2. ***[Recommended Option:*** **"Pre-Approval Qualifications**

   BATs ***[Optional addition:*** **"***and CCSs"****]*** who wish to be included on the Purveyor's pre-approved list and/or provide testing in the Purveyor's service area must apply to the Purveyor 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);
- ***[Optional if Applicable:*** *"Evidence showing possession of a license to operate a business in* ***(Insert name of jurisdiction)****."]*

- ***[Optional:*** *"The Purveyor may consider the inclusion of the applicant on a current list of pre-approved CCSs or BATs issued by another public water system with more than 1,000 connections having similar quality assurance requirements as sufficient evidence of qualification to be included on the Purveyor's pre-approved list."]* ***{If this option is chosen, identify the name(s) of the PWS(s) whose list is used.}***

3. Quality Assurance

The Purveyor's CCS will review within 30 days of receipt the backflow preventer inspection/test report forms submitted by the customer. ***[Optional if Applicable:*** *"The Purveyor'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 Purveyor*."***]**

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

The Purveyor'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

The Purveyor's CCS will participate in developing a backflow incident response plan that will be part of the water system's emergency response program as required by WAC 246-290-415(2). The incident response plan will include, but will not be limited to:

- 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.

2. Technical Resources

The Purveyor will use the most recently published edition of the manual, *Backflow Incident Investigation Procedures*, published by the PNWS-AWWA as a supplement to the Backflow Incident Response Plan for the **{Insert PWS name}**.

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

1. Customer Education

The Purveyor will distribute with water bills or some other means, at regular intervals, public education brochures to system customers. For residential customers, such brochures will describe the cross-connection hazards in homes and the recommended assemblies or devices that should be installed by the homeowner to reduce the hazard to the public water system. The education program will emphasize the responsibility of the customer in preventing the contamination of the public water supply. The Purveyor's staff will produce the public education brochures or the Purveyor will obtain brochures from:

- PNWS-AWWA;
- Spokane Regional Cross-Connection Control Committee (SRC4);
- Western Washington Cross-Connection Prevention Professionals Group (The Group);
- USC FCCCHR;
- Other national backflow prevention associations, such as the American Backflow Prevention Association (ABPA); and/or
- Other water utilities.

The information distributed by the Purveyor 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.

The Purveyor will distribute information brochures to all customers every two to three years, and to every new customer at the time the service agreement is signed.

2. *[Optional: "Public Outreach*

In cooperation with other water utilities, the Purveyor will participate in an outreach program consisting of:

- *Distribution of cross-connection control information to hardware and plumbing stores serving the area;*
- *Participation in fairs, exhibits, and other events; and*
- *Special education sessions for irrigation contractors, fire sprinkler contractors, local backflow assembly testers, etc."**]***

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

1. Types of Records and Data to be Maintained

The Purveyor 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 Purveyor will maintain records on all assemblies that protect the public water system from contamination. At a minimum, the Purveyor will maintain records on all premises isolation assemblies required to protect the public water system. ***[Add for Combination Program:*** *"Where applicable, the above information will also be maintained for backflow preventers installed for in-premises protection that are relied upon by the Purveyor to protect the public water system."**]***

[Add for Joint Program (Optional)]: *"By inter-agency agreement, the Purveyor will also maintain the above information for LAA required backflow preventers that are* ***not*** *relied upon by the Purveyor to protect the public water system."**]***

2. Reports to be Prepared and Submitted to DOH

The Purveyor 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 Purveyor's CCS will prepare and sign the exceptions reports.

[Recommended Option 1: "*The Purveyor's CCS will prepare and sign all CCC-related reports required by WAC 246-290-490."****]***

[Option 2: "*The Purveyor's CCS will review all CCC-related reports for correctness."****]***

[Optional addition: *"The manager of the public water system shall sign the CCC reports before submission to DOH*."***]***

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

At this time the **{Insert PWS name}** does not receive or distribute reclaimed water. In the event that reclaimed water use is proposed within the PWS's service area, the Purveyor 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.

[Alternative if PWS receives/distributes reclaimed water: *"The* ***{Insert PWS name}*** *waters system receives/distributes reclaimed water within its service area. Additional CCC requirements are listed in the permit issued in accordance with Chapter 90.46 RCW. A copy of the CCC requirements pursuant to the permit is attached as part of this CCC program."]*

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 Purveyor will provide a copy of this CCC program to **{Insert name of LAA}** via a

copy of the Purveyor's water system plan or in a separate document. The Purveyor will inform the LAA of any changes in policy or procedure that may impact the LAA.

The Purveyor will provide information to the LAA 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 Purveyor to have contaminated the public water system or a customer's plumbing system.

2. ***[Recommended Option, if no PWS/LAA written agreement exists: "Written Agreement with Local Administrative Authority***

   The Purveyor will pursue development of a written agreement with the Local Administrative Authority regarding the details of the coordination on CCC issues between the two parties. The agreement will include, but not be limited to, the following items:

   - *The purpose of the written agreement;*
   - *Identification of the parties and other interested agencies;*
   - *Delineation of responsibilities;*
   - *Procedures regarding new service connections;*
   - *Procedures regarding existing and changes to existing services;*
   - *Special policies and procedures, such as for fire protection and irrigation services;*
   - *Procedures regarding water service shut-offs, backflow incidents, and other events;*
   - *Communications between parties; and*
   - *Other contingencies."**]***

3. ***[Add for Joint Program:** "This CCC program has been developed in cooperation with the LAA for **{Insert name of jurisdiction}** and has been mutually agreed upon by both parties."**]***

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

   Used water is defined as water that has left the control of the Purveyor. 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 **{Insert PWS name}** water system 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.

(Optional Additional Provisions: *Purveyors may want to consider including the following provisions to address some common issues faced by PWSs.)*

5. ***[Recommended Optional Provision: "Unapproved Auxiliary Supplies.*** *All water supplies other than those owned by the Purveyor are considered unapproved auxiliary supplies as defined in WAC 246-290-010. The Purveyor will require backflow protection for customers with auxiliary supplies on their premises as follows:*

    - *Per Table 9 of WAC 246-290-490, the Purveyor 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 Purveyor's water system. [**Optional more stringent approach**: " whether or not there is a physical connection between the unapproved auxiliary supply and the Purveyor's water system."]*
    - ***[Optional Approach for Customers with Unapproved Auxiliary Water Supplies NOT Connected to the Purveyor's water system, if RPBAs are only required when the auxiliary supply is interconnected with the Purveyor's system per the paragraph directly above: "****The Purveyor 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 Purveyor's water system."]***

6. ***[Recommended Optional Provision: "Tanker Trucks.*** *The Purveyor may allow tanker trucks to obtain water from the Purveyor'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."]*
    - ***[Optional:*** *The tanker truck will obtain water from purveyor-designated watering points only. These watering points are equipped with purveyor-installed backflow preventers."]*

7. ***[Recommended Optional Provision: "Temporary Water Connections.*** *The Purveyor 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 Purveyor. 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."]*

8. ***[Recommended Optional Provision: "Interties and Wholesale Water Customers.*** *The Purveyor 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 Purveyor considers the purchasing system or*

*wholesale customer to pose a high-health hazard to the Purveyor's system."**]***

***[Optional:** "The Purveyor 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 Purveyor."**]***

F. Relationship to Other Planning and Operations Program Requirements

The Purveyor 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 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.

Resolution No. _____
Cross-Connection Control Policy

Finding of Fact

Whereas it is the responsibility of a water purveyor to provide water to the customer at the meter that meets Washington state water quality standards;

Whereas it is the water purveyor'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);

Whereas it is a requirement of the Washington State Department of Health (DOH) for the Purveyor to establish a cross connection-control program satisfactory to DOH;

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

Now be it resolved that the **{Insert PWS name}**, hereinafter referred to as the Purveyor, 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

The customer's plumbing system, starting from the termination of the Purveyor's water service pipe, shall be considered 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 the Purveyor'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 Purveyor, 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 purveyor-approved 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 double-check valve assembly (DCVA) or double-check detector assembly (DCDA).
- ***[Add for Combination or Joint Program: "****Any customer, other than a single-family or duplex residential customer to connect directly to the water service pipe (i.e., without a purveyor-approved DCVA or RPBA), PROVIDED THAT the customer installs and maintains backflow preventers, at the point of hazard, that are commensurate with the degree of hazard assessed by the Purveyor."****]***

Conditions for Providing Service

Water service is provided 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 the Purveyor'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 the Purveyor'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 the Purveyor's survey is denied, the Purveyor 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 Purveyor 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 the Purveyor. 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. ***[Optional Wording:*** *"The assemblies shall be installed in accordance with the Purveyor's construction standards and specifications."****]***
5. The customer agrees to:

(a) Have all assemblies (e.g., RPBAs and/or DCVAs) that the Purveyor relies upon to protect the public water distribution system tested upon installation, annually thereafter and/or more frequently if requested by the Purveyor, 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 Purveyor the results of the test(s) on Purveyor-supplied test report forms within the time period specified by the Purveyor.

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 the Purveyor's distribution system.

7. At the time of application for service, if required by the Purveyor, the customer agrees to submit to the Purveyor 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 the Purveyor 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 the Purveyor, the customer agrees to periodically submit a cross-connection control re-survey of the premises by a DOH-certified CCS acceptable to the Purveyor. The Purveyor 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 the Purveyor 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 the Purveyor, a residential customer shall agree to complete and submit to the Purveyor a "Water Use Questionnaire" for the purpose of surveying the health hazard posed by the customer's plumbing system on the Purveyor's distribution system. Further, the residential customer agrees to provide within 30 days of a request by the Purveyor a cross-connection control survey of the premises by a DOH-certified CCS acceptable to the Purveyor.

10. The customer agrees to obtain the prior approval from the Purveyor for all changes in water use, and alterations and additions to the plumbing system, and shall comply with any additional requirements imposed by the Purveyor for cross-connection control.
11. The customer agrees to immediately notify the Purveyor 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 the Purveyor to determine the reason for the backflow incident.

12. The customer acknowledges the right of the Purveyor 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 the Purveyor in the survey of premises, in the installation, maintenance, repair, inspection, or testing of backflow prevention assemblies or air gaps required by the Purveyor, or in the Purveyor'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, the Purveyor 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 the Purveyor's water billing policies.

13. ***[Add for Combination or Joint Program:*** *"The Purveyor will require premises isolation for a customer that is of the high-hazard type or category requiring "Mandatory Premises Isolation" established by the DOH regulations (Table 9, WAC 246-290-490)."* ***]***

14. Where the Purveyor 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 the Purveyor'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 the Purveyor'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 the Purveyor's service pipe.

15. The customer agrees to indemnify and hold harmless the Purveyor for all contamination of the customer's plumbing system or the Purveyor'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 the Purveyor'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.

16. The customer agrees that, in the event legal action is required and commenced between the Purveyor 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.

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

hazard.

It shall not be assumed by the customer or any regulatory agency that the Purveyor'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 Purveyor's personnel constitute an approval of the customer's plumbing system or an assurance to the customer of the absence of cross connections therein.

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

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

Implementation of the Cross-Connection Control Policy

The Purveyor will engage the services of a DOH-certified CCS to develop, implement and be in responsible charge of the **{Insert PWS name}** Water System's cross-connection control program.

The Purveyor, 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).

The Purveyor 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.

4. ***[Optional addition: add additional references here, if applicable].***

The Purveyor will incorporate the written program plan into the Water System Plan ***[Alternative, if WSP is not required:*** *"Small Water System Management Program"****]*** and will submit the plan to DOH for approval when requested.

The Purveyor, 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.

Resolution Passed: _____

Effective Date: _____

Signatures: _____

_____

_____

Appendix B
Example Cross-Connection Control Program for a Non-Community System

Contents

Appendix B contains an example written cross-connection control (CCC) program plan and an example legal instrument for a non-community system.

How to Use Appendix B

The documents in Appendix B have been arranged and formatted for ease of review by the Washington State Department of Health (DOH) when it evaluates the CCC program with respect to the regulations. Therefore, DOH recommends that purveyors follow the format (i.e., use as a template) whenever possible. *However, public water systems are not required to use the example program and legal instrument.* DOH recognizes that some PWSs may have a particular approach or institutional requirements that may dictate a different format or wording in the written program.

Description of Typical Non-Community Systems

The majority of non-community water systems, in addition to the definitions in the Drinking Water Regulations, Chapter 246-290 WAC, have the following characteristics:

- The water system owner (purveyor) serves his/her own facilities; and
- The consumers are the occupants or users (employees, students, patrons, visitors, etc.) of the facilities.

Examples of Non-Community Water Systems

Non-community water systems of this type include, but are not limited to:

- Schools, colleges, day care centers, and similar institutions;
- Clinics, hospitals, public parks, golf courses, fairgrounds, and playgrounds;
- Hotels, motels, resorts, campgrounds, RV parks and highway rest areas;
- Businesses such as stores, nurseries, service stations, restaurants and laundromats; and
- Industrial plants, food processing facilities, shellfish processors, and temporary farm worker housing.

Community Systems with Non-Community System Characteristics

Some community water systems have characteristics similar to non-community systems, i.e., the water system owner (purveyor) serves his/her own facilities, and the consumers are the occupants or users of the facilities.

Examples of such community systems are those that serve long-term occupants such as:

- Educational institutions with dormitories or student and staff residences;
- Nursing homes, retirement centers and mental institutions;
- Correctional institutions such as prisons;
- Mobile home parks and apartment complexes; and
- Military bases with barracks or other personnel housing.

For CCC program purposes, community systems with non-community system characteristics, such as the examples listed above, should develop and implement a program similar to the example CCC program for non-community water systems provided in this Appendix.

Non-Community Systems with Community System Characteristics

Some non-community water systems may have both non-community and community systems characteristics. For example, some non-community systems serve developments where there is a mix of recreational and residential connections. In this example, the Purveyor owns the recreational facilities, but the residential connections are privately owned.

Non-community systems with characteristics of community and non-community systems should base their written programs primarily on Appendix B. However, the relevant elements of Appendix A (or the DOH Very Small Water System CCC Guidance) should be incorporated into the Appendix B program plan where applicable (to address CCC issues for the non-purveyor owned connections).

Instructions

To use the example program plan, non-community water systems are encouraged to:

1. Copy the example program file into Word (download from the web-site or obtain from DOH electronically);
2. Retain the basic formatting and text of the example program and fill in the blanks, decision table and check boxes where indicated to "customize" the example program;
3. Include or delete optional and/or additional language shown in the example program to reflect system-specific decisions; and
4. Insert the completed written CCC program in the Small Water System Management Program (SWSMP) or Water System Plan (WSP).

Cross-Connection Control Program for _____Water System

A. Requirement for Program

The ***{Insert PWS name and ID number}*** hereinafter referred to as "the Purveyor", has the responsibility to protect the 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 WAC 246-290-490 of the Group A Drinking Water Regulations. The minimum required elements of a CCC program are as follows:

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 requirements of a CCC program include:

1. Coordination with the Local Administrative Authority (LAA), i.e. the local building or plumbing official, regarding CCC activities;
2. Inclusion of a written CCC program in a WSP or SWSMP; and
3. Prohibition of the intentional return of used water.

B. Program Objectives

The objectives of the CCC program are to:

1. Reasonably reduce the risk of contamination of the source of supply and water distribution system; and

2. Comply with the applicable plumbing code and other regulations pertaining to the

construction and operation of the Purveyor's facilities.

C. Summary of Program Decisions

The following table summarizes the major policy and program decisions adopted for the ***{Insert PWS name}*** Water System. **[**Since the Purveyor and the "customer" are the same entity in a non-community system, only a limited number of program decisions are needed. For each program area, the table shows some available options for decisions that are likely to be required for a non-community system. **{The PWS should mark the option selected by checking the appropriate boxes under "Decision" in the following table.}]**

Summary of Program Decisions for the {Insert PWS name}

Decision Item	Decision (Check one option per item)
1. Assessment and Re-Assessment of Cross-Connection Hazards (Element 2)	
a. By purveyor's certified CCS	
b. By consultant CCS on contract to water system	
c. By another agency's CCS (via an inter-agency agreement)	
2. CCS Option - purveyor's CCC Program Management (Element 4)	
a. By purveyor's certified CCS	
b. By another agency's CCS (via an inter-agency agreement)	
c. By consultant CCS on contract to water system	
3. Testing of Assemblies (Element 5)	
a. By purveyor's staff or purveyor employed certified BAT	
b. By customer employed (contractor) BAT	
4. **Extent of Coordination with Local Administrative Authority (Other Provisions)** [WAC 246-290-490 (2)(d)	
a. Information exchange	
b. Interaction	
c. Joint program	
d. Not applicable at this time (no new facilities construction or remodeling)	

D. Required Elements of Program

The following program element descriptions are excerpts from the CCC regulations found inWAC 246-290-490.

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

Authority - The Purveyor is the owner and operator of all facilities on the premises. By stated policy *[**Alternate Wording if Applicable: "** resolution by the **{Insert name of governing body}**"]*, the Purveyor is authorized and mandated to protect the water system from contamination via cross connections. A copy of the stated policy or resolution is included as part of this CCC program.

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

Cross-Connection Hazard Assessments

1. Initial Hazard Assessment

   a. ***Existing*** Facilities/Systems - The Purveyor will ensure that a DOH certified cross-connection control specialist (CCS) conducts an initial cross-connection hazard evaluation of the ***{Insert PWS name}*** Water System within six months after adoption of this CCC program.

      Program Adoption Date:_____ Initial Hazard Survey Date:_____

   b. ***New*** Facilities/Systems – The Purveyor will ensure that a DOH-certified CCS conducts an initial cross-connection hazard evaluation, *before* water service is provided to any new facilities, irrigation systems etc. served by the water system.

2. Periodic Resurveys – The Purveyor will ensure that a DOH-certified CCS periodically resurveys for cross-connection hazards the ***{Insert PWS name}*** Water System. Resurveys will be conducted:

   a. Every 2 years after the initial hazard survey {insert alternate frequency if appropriate}; and

   b. Upon any changes in use of the premises, plumbing or distribution facilities.

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

Policy - The following procedures apply to all new and existing buildings or areas of water use in the ***{Insert PWS name}*** Water System:

1. Mandatory Premises Isolation for High-hazard Buildings, Facilities or Systems – The Purveyor will ensure that water services to all buildings, facilities or systems of the type described in Table 9 of WAC 246-290-490 (i.e., high hazard) are isolated by a DOH-approved reduced pressure backflow assembly (RPBA).

2. Compliance with Uniform Plumbing Code/Additional Premises Isolation Requirements – The Purveyor will ensure that all buildings or areas of water use:

   a. Comply with the current plumbing code (amended for Washington) adopted by the State Building Code Council; and

   b. ***[Purveyor's Optional Additional Language*** *"Be isolated with an approved double check valve assembly (DCVA), where the CCS believes the plumbing code does not provide protection commensurate with the assessed degree of hazard."****]***

3. Plumbing/Water System Design – The Purveyor will ensure that the design of the plumbing and/or water system incorporates DOH-approved backflow prevention assemblies appropriate for the degree of hazard assessed by the Purveyor's CCS. Initial plumbing/water system design and subsequent design modifications will be subject to review by a DOH-certified CCS for cross-connection hazards.

4. Approved Backflow Assemblies - The Purveyor will ensure that DOH-approved backflow prevention assemblies protect the public water system from contamination. DOH-approved assemblies are assemblies that appear on DOH's published list of *Backflow Prevention Assemblies Approved for Installation in Washington State*. The Purveyor will keep on file documentation regarding the approval status of all backflow assemblies installed to protect the public water system.

5. Installation Standards – The Purveyor will ensure that all approved backflow preventers are installed in:

   - The orientation for which they are approved;
   - A manner and location that facilitates their proper operation, maintenance, and testing or inspection, and in compliance with safety regulations;
   - A manner and location that protects them from flooding and freezing; and
   - Accordance with the installation standards outlined in the most recently published editions of the PNWS-AWWA *Cross-Connection Control Manual*, or the USC-FCCCHR *Manual Of Cross-Connection Control,* unless the manufacturer's requirements are more stringent.

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

1. Program Administration - The Purveyor or his authorized agent is responsible for administration of the CCC program.

2. DOH-Certified CCS – The Purveyor will employ, or have available on staff, at least one person certified by DOH as a CCS to develop and implement the CCC program. When no staff or employees are qualified, the Purveyor will retain a DOH-certified CCS on contract to provide the necessary expertise and services.

3. CCS Duties – The Purveyor will ensure that a DOH-certified CCS does the following:

   - Performs CCC hazard evaluations;
   - Determines the type of backflow preventer to be installed;
   - Inspects backflow preventers (to ensure protection is provided commensurate for the degree of hazard, for correct installation and for approval status);
   - Reviews assembly test reports;
   - Reports and investigates backflow incidents; and
   - Completes reports (Annual Activities, Program Summary and Exception Reports) required by WAC 246-290-490 and submits them upon request to DOH.

4. Current CCS Information – The following table(s) shows information related to the CCS(s) currently responsible for development, implementation and oversight of the Purveyor's CCC program:

Name of CCS	
Address	
City, State, Zip	
Telephone Number	
CCS Certification Number	

{Insert or attach additional tables, if the Purveyor has more than one CCS that is involved with CCC program implementation.}

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

1. Backflow Preventer Inspection and Testing – The Purveyor will ensure that all backflow preventers in the ***{Insert PWS name}*** Water System are inspected and tested in accordance with WAC 246-290-490. The Purveyor will arrange to have all backflow preventers inspected and tested (if applicable):

   - At the time of installation;
   - Annually after installation (minimum frequency) or more frequently;
   - After a backflow incident; and
   - After an assembly is repaired, reinstalled or relocated (or air gap re-plumbed).

2. DOH-Approved Test Procedures - Per WAC 246-290-490 (7)(d), the Purveyor will ensure that all assemblies protecting the public water system from contamination are tested in accordance with DOH-approved field test procedures.

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

1. DOH-Certified Backflow Assembly Tester (BAT) Required - The Purveyor will ensure that a DOH-certified BAT tests all backflow assemblies that protect the public water system from contamination.

2. BAT Documentation Requirements - Prior to engaging a BAT to test assemblies within the water system, the Purveyor will require the tester to document that he/she:

   a. Is currently certified by DOH as a BAT;
   b. Has appropriate assembly testing equipment (make, model and serial number); and
   c. Has had the testing equipment verified for accuracy and/or calibrated within the past 12 months.

3. Alternate BAT Approach - In lieu of the above documentation, the Purveyor will engage a BAT who is currently on an "Approved" list developed by a public water system of 1000 connections or more having a BAT quality assurance program acceptable to DOH (i.e., that as a minimum meets the BAT documentation requirements stated above). {If this option is chosen, identify the name of the public water system whose list is used.}

   *[**Optional Alternative Language:** "The Purveyor will employ one or more DOH-certified BATs. The Purveyor will ensure that the BATs are currently certified, maintain their certifications in good standing, and that all testing equipment is of the appropriate type and is verified for accuracy and calibrated, if needed, at least once annually."]*

4. Quality Assurance – The Purveyor's CCS will review within 30 days of receipt inspection/test report forms submitted by the BAT and follow-up on any reports that are found to be deficient in any way.

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

1. Backflow Incident Response Plan - The Purveyor will develop a Backflow Incident Response Plan in consultation with the Purveyor's CCS. It will be included:

   a. In the **{Insert PWS name}** Water System's overall emergency plan.
   b. **{*Optional language**: "In the CCC plan"*}.

   The incident response plan will include, but not be limited to:

   - Notification of affected users (employees, occupants, etc.);
   - Notification and cooperation with other agencies, such as DOH, the Local Administrative Authority, and the local health jurisdiction;
   - Identification of the source of contamination;
   - Isolation of the source of contamination and the affected area(s);
   - Provision of alternate supplies of drinking water;
   - Cleaning, flushing and other mitigation measures; and
   - Corrective action to prevent future occurrences.

[*Optional Alternative*: *The Purveyor has developed a Backflow Incident Response Plan and it is included here or in the water system's overall emergency plan {select whichever is applicable}.**]***

2. Technical Resources - The Purveyor will use ***{Optional Alternative**: "has used"}* the manual, *Backflow Incident Investigation Procedures*, First Edition, 1996, published by the PNWS-AWWA as a technical resource and/or supplement to the Backflow Incident Response Plan.

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

1. Public Education Program - The Purveyor's public education program for the Purveyor will consist of distribution of CCC-related educational material (handouts) to (and/or holding special cross-connection classes for) staff and other water users as appropriate. The education program will emphasize the responsibility of the water users in preventing contamination of the water supply. Information distributed will include, the following subjects (as applicable):

a. Cross-connection hazards in general;
b. Cross-connection hazards typical to the Purveyor's premises;
c. Irrigation system hazards and corrective actions;
d. Fire sprinkler cross-connection hazards;
e. Importance of annual inspection or testing of backflow preventers; and
f. Thermal expansion in hot water systems when backflow assemblies are used.

2. Educational Materials - The Purveyor has adapted ***{Optional language:*** *"will adapt"* ***}*** existing educational materials from organizations such as PNWS-AWWA, ABPA, SRC4 and The Western Washington Cross-Connection Prevention Professionals, so that the contents are applicable/relevant to the Purveyor's water system **{Optional language:** "will develop new educational materials"**}**. Samples of the Purveyor's educational materials are attached.

3. Frequency - The Purveyor will distribute, every two to three years, **[*Optional language:*** *"annually" if high-hazard facilities/ systems/activities are on-site"***]** information brochures to (or hold special classes for) new staff, water users, and/or occupants that could inadvertently create cross connections in the Purveyor's water system.

4. Public Education Implementation – The Purveyor will document who has received public education information in the following table *(describe who the Purveyor has educated, by what means and when).*

Target Audience	Method		Date Provided
	Brochure	Class	

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

1. Required CCC Records - The Purveyor will maintain records of the following types of information:

   a. CCC hazard evaluation results;
   b. Backflow preventers required by the CCS to protect the public water system (may include both premises isolation and in-premises preventers);
   c. Air gap location, installation and inspection dates, inspection results, and name of person conducting inspections;
   d. Backflow assembly location, description (type, manufacturer, make, model, size and serial number), installation, inspection and test dates, test results, and person performing tests; and
   e. Information on AVBs used for irrigation system applications, including manufacturer,

make, model, size, dates of installation and inspections, and person performing inspections.

2. CCC Reports Required to be Prepared and Submitted - The Purveyor will prepare the following required reports and submit them to DOH as indicated:

    a. **CCC Program Activities Annual Summary Report:** complete for each calendar year and send to DOH when requested.
    b. **CCC Program Summary Information Report:** complete and submit when requested by DOH or when there are significant policy changes to the CCC program.
    c. **Backflow Incident Reports:** complete and submit to DOH with the CCC Program Activities Annual Summary Report unless otherwise requested by DOH. As a courtesy, the Purveyor will submit a copy to the PNWS-AWWA CCC Committee; and
    d. **Exceptions to Mandatory Premises Isolation Repo**rt (if applicable): complete one report for each exception granted in a calendar (reporting) year and submit to DOH with the CCC Program Activities Annual Summary Report.

3. CCS Review - The Purveyor's CCS will complete and/or review the CCC reports for accuracy.

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

At this time, the ***{Insert PWS name}*** Water System does not receive or distribute reclaimed water. In the event that reclaimed water use is proposed within the System service area, the Purveyor will incorporate into the CCC program and comply with all cross-connection control requirements mandated by the Permitting Authority in accordance with Chapter 90.46 RCW.

[Alternative Option, if PWS receives/distributes reclaimed water: "The ***{Insert PWS name}*** *Water System receives/distributes reclaimed water within its service area. Additional CCC requirements are listed in the permit issued in accordance with Chapter 90.46 RCW. A copy of the CCC requirements pursuant to the permit is attached as part of this CCC program. The Purveyor is currently in compliance with the requirements of the permit"**]**.

E. Other Provisions

1. ***Coordination With Local Administrative Authority:*** *Both WAC 246-290-490 and the Uniform Plumbing Code (as amended for Washington) require coordination between purveyors and the Local Administrative Authority in all matters concerning cross-connection control.*

    a. Identification of Local Administrative Authority (LAA) –the LAA that enforces the plumbing code for the premises served by the Purveyor is **{*Insert name of entity, contact person name, address, phone, e-mail etc. here*}.**

b. Coordination with Local Administrative Authority - A copy of this cross-connection control program has been provided to ***{Insert name of Local Administrative Authority that enforces the Uniform Plumbing Code}*** on ***{Insert date}.***

c. Description of Coordination with LAA – The Purveyor coordinates with the LAA as follows: ***{Indicate whether coordination consists of information sharing only, interaction, joint program, etc.}***.

d. Delineation of Responsibilities – The Purveyor [***Optional language*** "*and the LAA are*"] responsible for the following CCC activities in the **{*Insert PWS name}*** Water System. The respective responsibililties of the two parties are delineated as summarized in the following table:

CCC Responsibility	**Purveyor**	**Local Administrative Authority**
New Construction Plan Reviews		
New Construction Hazard Evaluations/Inspections		
Existing Facilities Hazard Evaluations/ Inspections		
a. Initial		
b. Periodic Resurveys		
Assembly Testing		
Record-Keeping/Data Management (hazard evaluations, test reports, etc.)		
Backflow Incident Response		

e. Notification of Local Administrative Authority - The Purveyor will inform the LAA when there is a:

- Change in plumbing that requires a plumbing permit;
- Change in the use of any part of the premises that alters the cross-connection hazard level; or
- Backflow incident.

2. ***Prohibition of Return of Used Water:*** *The water system must prohibit the intentional return of used water to the Purveyor's distribution system per WAC 246-290-490 (2)(d).*

   a. Definition - Used water is defined as water that has left the control of the Purveyor.

   b. Used Water Policies - Since the Purveyor owns both the water supply facilities and the plumbing systems, the water has not, technically, left the control of the Purveyor. However, for protection of the drinking water quality and the health of the employees/building occupants, the Purveyor will institute the following policies:

      - Plumbing design or changes will not allow water that has been used for such purposes as heating or cooling to be returned to the drinking water system; and

      - Buildings and facilities with two or more water service connections that are internally connected such as to provide a flow–through condition will have each service isolated by either an RPBA or DCVA, depending upon the level of hazard assessed by the Purveyor's CCS.

F. Relationship to Other Planning and Program Operations

The Purveyor will consider the impacts of the CCC program upon the planning and operations requirements of the ***{Insert PWS name}*** Water System. Such considerations include, but are not limited to, ensuring that:

1. The design of the water distribution system (and plumbing system) provides for expected head losses resulting from installation of backflow assemblies;
2. CCC program personnel are consulted in the design of water and wastewater treatment facilities and when proposals are made to receive or distribute reclaimed water;
3. Operations under normal and abnormal conditions do not result in excessive pressure losses;
4. Cross-connection issues are considered in water quality investigations; and
5. Adequate financial and administrative resources are provided to carry out the CCC program.

Legal Instrument for a Non-community Water System CCC Program

Background

Where the Purveyor owns both the public water system and the facilities served by the water system (i.e., the plumbing systems up to the free-flowing tap), the Purveyor may already have the legal authority to establish a CCC program. Proprietors of restaurants or small businesses that have their own water systems are examples where the legal authority already exists. In such cases, the Purveyor may not require a formal legal instrument, but only a declaration of ownership of the system and facilities served and the intent to establish and implement a CCC program consistent with WAC 246-290-490.

In other cases, such as school districts, it may be necessary for the governing body (such as the School Board) to adopt a resolution or similar document to establish the authority and intent to adopt and implement a CCC program. For this reason, a sample resolution for a non-community water system is presented below.

Resolution No. _____
Cross-Connection Control Policy

Finding of Fact:

Whereas it is the responsibility of a water purveyor to provide water that meets Washington State water quality standards to all consumers occupying or visiting the Purveyor's premises;

Whereas it is the water purveyor'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);

Whereas the Purveyor also owns the facilities and the plumbing systems that deliver the water to the consumers;

Whereas it is a requirement of the Washington State Department of Health for the Purveyor to establish a cross-connection control program satisfactory to DOH;

Now be it resolved that the ***{Insert PWS name}***, hereinafter referred to as "the Purveyor", establishes the following policy to protect the Purveyor-owned water system and plumbing facilities from the risk of contamination. For public health and safety, this policy shall apply equally to all new and existing facilities.

A. 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 and Chapter 2 of the Uniform Plumbing Code as amended for Washington State (Chapter 51-56 WAC).

B. Administrative Provisions

1. The Purveyor shall engage the services of a Department of Health (DOH) certified cross-connection control specialist (CCS), by employment or by contract, to develop, implement, and be in responsible charge of the {***{Insert PWS name}*** Water System's CCC program.

2. The Purveyor, under the direction of the CCS as provided for in B-1, shall prepare a written CCC program plan to implement the requirements of this resolution. The written CCC program plan will be consistent with this resolution and shall comply with the requirements of Chapter 246-290 WAC (Group A Drinking Water Regulations) and with Chapter 51-56 WAC (Uniform Plumbing Code as amended for Washington).

3. The Purveyor will use the most recently published editions of the following publications as references and technical aids:

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

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

    c. *Cross-Connection Control Guidance Manual for Small Water Systems,* published by the Washington State Department of Health, Office of Drinking Water.

4. The Purveyor shall incorporate the written program plan into the Water System Plan or Small Water System Management Program as applicable and shall submit the program to DOH for approval when requested.

C. Technical Provisions

1. The Purveyor's CCS shall perform hazard assessments of all water system and water-using facilities owned by the Purveyor according to a reasonable schedule.

2. The Purveyor shall eliminate all cross-connections that are discovered by the CCS. Where it is impossible or impractical to eliminate the cross-connections, they shall be protected against by installation of a backflow preventer. The type, location and schedule of installation of the backflow preventer shall be as recommended by the Purveyor's CCS.

3. When a facility or building owned or served by the Purveyor is of a type included on Table 9 of WAC 246-290-490(4), the building or facility plumbing system shall be isolated from the rest of the water system by installation of a reduced pressure principle backflow assembly (RPBA) or air gap (AG). The premises isolation backflow preventer will be installed at a location recommended by the CCS.

4. Cross-connection hazards found within buildings owned by the Purveyor will be protected against as according to the Uniform Plumbing Code (UPC) as amended for Washington. For cross-connection hazards and/or specific plumbing fixtures that are not address in the UPC, the Purveyor will provide protection in accordance with the fixture protection tables found in the most recently published edition of the PNWS-AWWA *Cross Connection Control Manual*.

5. All backflow preventers owned by the Purveyor shall be inspected and/or tested in accordance with WAC 246-290-490 (i.e. at the time of installation, after repair, reinstallation or relocation and after a backflow incident). After the initial test, the Purveyor will ensure that Purveyor-owned backflow preventers are tested at least once annually. The

Purveyor will ensure that a purveyor-approved, DOH-certified backflow assembly tester (BAT) tests all assemblies. The Purveyor will reinstall, repair or replace as soon as feasible any backflow preventers that fail an inspection and/or a test.

6. The Purveyor shall maintain records of hazard assessments, backflow preventers, and backflow preventer tests and inspections. The Purveyor shall make all data concerning the CCC program available to DOH when requested.

7. The Purveyor shall allocate resources as necessary to implement the provisions of this resolution and the CCC program adopted.

D. Other Provisions

If any provisions in this resolution, or in the written CCC program plan adopted by the Purveyor, are found to be less stringent than or inconsistent with the Drinking Water Regulations (Chapter 246-290 WAC), the Uniform Plumbing Code (Chapter 51-56 WAC), or any other Washington State statutes or rules, the more stringent statute, rule, or regulations shall apply.

Resolution Passed: _____

Effective Date: _____

Signatures: _____

_____

_____

Appendix C
Backflow Incident Response Plan
for a Small Water System

A. General

This Backflow Incident Response Plan should be considered a supplement to the Purveyor's Emergency Plan.

Purveyors should 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), purveyors should initiate a check of distribution system water quality as a precursor to the need for a backflow incident investigation.

WAC 246-290-490 requires purveyors 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). Purveyors should include a list of emergency contact telephone numbers at the beginning of the water system's O & M Manual, so that the information is readily available when an incident occurs.

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

Purveyors can get more detailed guidance on how to respond to a backflow incident from the manual, *Backflow Incident Investigation Procedures*, published by the Pacific Northwest Section, American Water Works Association (PNWS-AWWA). Contact information for the PNWS-AWWA is provided in Appendix F.

B. Short List of Tasks

Small water system purveyors can use the following short list of tasks as initial guidance for dealing with backflow incidents. Purveyors should 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. Note: the water system is referred to as the Purveyor in the short task list.

1. Customer Notification

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

b. The Purveyor 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 Purveyor will inform the customer about the reason for the backflow incident investigation and the Purveyor's efforts to restore water quality as soon as possible. The Purveyor 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 Purveyor 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 Purveyor 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 Purveyor will give consideration to the distribution system as a potential source of the contaminant (e.g., air valve inlet below ground).

b. The Purveyor 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 Purveyor 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 Purveyor should discontinue water service to that customer, until the customer completes the corrective action ordered by the Purveyor.

3. Isolation of Contaminated Portion of System

a. The Purveyor 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 Purveyor 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 Purveyor 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 Purveyor 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 Purveyor 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 Purveyor will disinfect the system after the removal of the chemical contaminant.

c. Where any bacteriological contamination is suspected, the Purveyor 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, purveyors 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 Purveyor 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. Purveyors should contact the appropriate DOH regional office to discuss proposed approaches to contaminant removal and disinfection prior to taking corrective action.

Appendix D
Program Administration Documents

Appendix D contains sample forms, letters and standard installation drawings. Purveyors may use any or all of these documents as they administer their cross-connection control programs. The content of these forms and letters may be adjusted where appropriate to meet system-specific needs or program requirements.

Sample Forms

The first section of Appendix D contains the following forms:

- Application for Water Service (service agreement);
- Backflow Assembly Test/AG Inspection Report;
- Backflow Assembly Test/AG Inspection Report - File Record;
- Backflow Assembly Testers - Pre-Approved for Submitting Test Reports;
- Preliminary Hazard Assessment Form – Non-Residential Customers;
- Cross-Connection Control Survey Report – Non-Residential Customers;
- Water Use Questionnaire - Residential Customers; and
- Backflow Incident Report Form.

Sample Letters

The second section of Appendix D contains sample letters from the Purveyor to the customer relating to the administration of a cross-connection control program. These letters include:

- Request to Complete Water Use Questionnaire;
- Notice of Survey of Premises;
- Request to Install Backflow Prevention Assembly;
- Request to Submit Test of Backflow Prevention Assembly; and
- Second Notice to Test Backflow Prevention Assembly.

Sample Standard Installation Drawings

The last section of Appendix D contains the following sample installation drawings:

- Standard Details - Single Family Residential Service Connection Options; and
- Backflow Prevention Assemblies - Recommended Premises Isolation Installations.

Application for Water Service (Service Agreement)

Owner's Name: _____Phone: _____

Mailing Address: _____

Location Address: _____

Legal Description: _____

1. The undersigned applicant hereby applies for a water connection to the above-described property.

2. The applicant is the owner of the described property or the authorized agent of the owner.

3. As a condition of the {**Insert PWS Name**}, hereinafter referred to as the Purveyor, providing and continuing service to the above described property, the property owner, by signing this application, agrees to comply with:

   a. All provisions of the attached current Ordinance, Resolution and/or By-laws of the Purveyor, or latest revision thereof; and

   b. Other such current (attached) and future rules and regulations that govern the Purveyor's water system.

4. The property owner specifically agrees:

   a. To install and maintain at all times his plumbing system in compliance with the most current edition of the {**PWS to insert applicable code, i.e. city, county and/or state}** Plumbing Code as it pertains to the prevention of potable water system contamination and prevention of pressure surges and thermal expansion in his water piping (for thermal expansion, it shall be assumed that a check valve is installed by the Purveyor on the water service pipe);

   b. Within 30 days of the Purveyor's request (or alternate schedule acceptable to the Purveyor):

      i) To install, maintain, test and repair in accordance with the Purveyor's cross-connection control standards all premises isolation backflow prevention assemblies required by the Purveyor to be installed to protect the public water system from contamination; and
      ii) To report to the Purveyor the results of all assembly tests and/or repairs to the premises isolation backflow prevention assemblies.

   c. As a condition of the Purveyor waiving the requirement for premises isolation by a reduced pressure backflow assembly on the property owner's service pipe:

      i) To authorize the Purveyor to make periodic water use surveys of the premises;
      ii) Within 30 days of the Purveyor's request, to install, test, maintain, and repair in accordance with the Purveyor's cross connection control standards (copy received with this application) all in-premises backflow prevention assemblies that provide equivalent protection for the Purveyor's distribution system;
      iii) To report to the Purveyor within 30 days of obtaining the results of all tests and repairs to the aforementioned backflow prevention assemblies; and
      iv) To report to the Purveyor any change to the plumbing system.

d. Not to make a claim against the Purveyor or its agents or employees for damages and/or loss of production, sales or service, in case of water pressure variations, or the disruption of the water supply for water system repair, routine maintenance, power outages, and other conditions normally expected in the operation of a water system.

e. To pay his water bill within 30 days from the date of billing.

After 30 days of the Purveyor mailing a written notice to the property owner of his breach of this agreement, the Purveyor may terminate water service.

In the event legal action is required and commenced between the parties to this agreement to enforce the terms and conditions herein, the substantially prevailing party shall be entitled to reimbursement of all its costs and expenses including but not limited to reasonable attorney's fees as determined by the Court.

Applicant's Signature _____Date _____

Attachments received (have customer initial):

Water Rates/Charges _____
Service Connection Information _____
Water Service Policy _____

For Purveyor Use Only

_____/_____/____ Date connection fee received

_____/_____/____ Date Water Use Survey questionnaire received

_____/_____/____ Date risk assessment completed; by _____
{Insert Name of CCS}

_____/_____/____ Date customer notified of requirement for BPA

_____/_____/____ Date BPA installation approved

_____/_____/____ Date BPA test report accepted

_____/_____/____ Date BPA information entered into database

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 the {Insert PWS name}

{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. *{**Optional language:** 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
- *{**Optional** language: Meet other criteria established by our system including_____ {**insert additional requirements here such as business licenses, etc.**}*

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 purveyor's water and adding chemicals*		Other (describe) *[Purveyor 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 water purveyor 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: {insert name/address}.

Cross-Connection Control Hazard Survey Report

Non-Residential Customers

Survey date: _____

Customer Information

Premises name: _____Telephone: _____

Address: _____ZIP: _____

Contact person: _____Title: _____

Description of premises: _____

Description of water use: _____

Water Service and Backflow Prevention Assembly (BPA) Size/Type

Service Type	Service Size	Meter Size	BPA Size	BPA Type
Domestic				
Fire				
Irrigation				
Other				

Cross-Connection Control Specialist (CCS) Information

Name: _____ Telephone: _____

Company name: _____

Address: _____ZIP: _____

DOH CCS Certification #: _____ Year certified: _____

Survey Results

Note: The CCS's survey shall include an inspection of the premises isolation assembly to verify that it is installed correctly and is a currently listed DOH-approved assembly.

Item	Location & Description of Cross Connection	Backflow Prevention Provided/Required

Attach additional sheets if needed.

Surveyor's Comments

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Surveyor's Recommendations

I certify that this cross-connection hazard survey accurately reflects the overall risk posed by the customer's plumbing system to the Purveyor's distribution system. Based on the above survey, I certify that:

1. I found the following type(s) of premises isolation backflow preventer(s):

   Air Gap ____ RPBA/RPDA ____ DCVA/DCDA _____ None ____.

2. The existing backflow preventer(s) is/are properly installed.

   Yes ____ No ____ N/A ____.

3. The existing backflow preventer(s) is/are commensurate with the degree of hazard:.

   Yes ____ No ____ N/A ____.

4. Since no backflow preventer was installed for premises isolation, the premises owner should install a premises isolation backflow preventer of the following type:

   Air Gap ____ RPBA/RPDA ____ DCVA/DCDA ____ N/A ____.

5. The premises owner should replace the existing premises isolation backflow preventer(s) with the following:

   Air Gap ____ RPBA/RPDA ____ DCVA/DCDA ____ N/A ____.

The completed survey report shall be first signed by the CCS conducting the survey, and then counter-signed by the owner of the premises or the owner's authorized agent.

CCS Signature: _____Date: _____

As the Owner of the Premises (or Owner's authorized agent), I certify that I have received a copy of this completed Cross-Connection Control Hazard Survey Report.

Signature: _____**Date**: _____

Note: Customers and regulatory agencies should be aware that the Purveyor's requirement for this cross-connection hazard survey and/or for the installation of a specific backflow prevention assembly on a service pipe ***do not*** constitute an approval of the customer's plumbing system, compliance of the customer's plumbing system with the Uniform Plumbing Code or an assurance of the absence of cross connections in the customer's plumbing system.

Water Use Questionnaire
Residential Customers

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

Please indicate whether the special plumbing or activities listed below apply to your premises:

Yes	No	Plumbing or Activity Present on Customer's Premises*
		Underground sprinkler system
		Water treatment system (e.g., water softener)
		Solar heating system
		Residential fire sprinkler system
		Other water supply (whether or not connected to plumbing system)
		Sewage pumping facilities or grey water system
		Boat moorage with water supply
		Hobby farm
		Animal watering troughs
		Swimming pool or spa
		Greenhouse
		Decorative pond
		Photo lab or dark room
		Home-based business. If Yes, list type/describe (e.g., beauty salon, machine shop, etc.): _____ _____ _____

* Based on their knowledge of residential connections served, public water systems may "customize" this list by adding or deleting plumbing categories or activities

Completed by (print name): _____ Date: _____

Resident's Signature: _____

Backflow Incident Report Form

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 Purveyor 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 purveyor 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.

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: _____

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 (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: _____

Notification of Washington State Health Department:

Date: _____ Time: _____ Person Notified: _____

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

Letter Requesting Customer to Complete Water Use Questionnaire

Date

Customer Account Number (optional)
Customer
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 help protect public health by preventing contamination of the drinking water as it is delivered to water system customers. The attached brochure explains what a cross connection is, describes typical household cross connections and what you can do to help protect your drinking water.

As part of our efforts to keep your drinking water safe, we are conducting a cross-connection control hazard survey of residential customers served by our system. The purpose of the survey is to help us determine if any of our residential customers have special plumbing or activities on their premises that could increase the risk of contamination to our water system.

For most residential customers, the cross-connection control hazard posed to the public water system is minimal. This is because your household plumbing was installed in compliance with the Uniform Plumbing Code. The Uniform Plumbing Code generally provides adequate protection of your water potable water piping and our public water distribution system from cross connections. However, a few customers with special plumbing or activities on their premises may pose an increased health risk to other customers served by our system. These customers may need to have a backflow preventer installed on their service lines or provide alternate protection to prevent contamination of the public water system.

Please complete the attached questionnaire by checking the applicable boxes on the table; and return the completed, signed questionnaire by {insert date} to the address shown on the letterhead {or insert address if different}.

Thanks in advance for filling out the questionnaire. We appreciate your cooperation in helping us to protect the drinking water we deliver to our customers. If you have any questions about the survey or how to fill out the questionnaire, please contact me at {**insert phone number**}. We will review your questionnaire and determine whether we need to contact your for further information.

Sincerely,

Name
CCC Program Manager

Enclosures: CCC Brochure
Water Use Questionnaire

Notice of Survey of Premises (Non-Residential/Multi-Family Residential) Customer-Employed Cross-Connection Control Specialist

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 supply. The attached brochure explains what a cross connection is and what you can do to help protect your drinking water.

As part of the cross-connection control program, our system must assess the degree of hazard posed by each of our customer's plumbing systems upon the public water system. Non-residential customers and multi-family residential customers pose a special concern, because of the greater scope and complexity of their plumbing systems, special uses of water on the premises (e.g., manufacturing), fire protection systems, etc. Depending on the hazard assessment results, you may need to have a backflow preventer installed on your service line or provide alternate protection.

A cross-connection survey needs to be conducted for us to make the hazard assessment for your premises. The drinking water regulations require a person with special training, i.e., a Department of Health certified Cross-Connection Specialist (CCS), to conduct the surveys. Our system's policy is to have surveys of all non-residential premises and multi-family residential premises conducted by a CCS *employed by the customer*. Survey results must be submitted to our system for review.

Please arrange for the attached survey form to be completed and returned to this office by {insert date}. A list of local CCSs who provide this type of service is attached.

We appreciate your cooperation in meeting this hazard survey requirement. If you have any questions, please contact me at **{insert phone number}**.

Sincerely,

Name
CCC Program Manager

Enclosures: CCC Brochure
Water Use Questionnaire
CCS List

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. {***Optional language***: 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 {**insert phone number**}.

Sincerely,

Name
CCC Program Manager

cc: {City/County Plumbing Inspector}

Enclosures: Standard Installation Drawings

Request To Submit Test of 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 to protect the drinking water supply from contamination. As part of this program, backflow prevention assemblies have been installed on your water service(s) and/or within your plumbing system to protect our water distribution system. Annual testing is required to ensure that the backflow prevention assemblies properly function.

The purpose of this letter is to request that you now arrange for the annual testing of the reduced pressure principle (RPBA), double check valve (DCVA), and/or pressure vacuum breaker (PVBA or SVBA) assembly/assemblies described on the attached list. A Washington State Department of Health certified backflow assembly tester (BAT) must conduct the testing. **Testing results should be sent to the address above and submitted by {insert date}.**

For your convenience, we are enclosing a list of backflow assembly testers pre-approved to test assemblies that protect our water system. Test report forms are also enclosed. The test report forms need to be properly completed by the BAT, signed by the customer/assembly owner, and returned to us.

Note: the Uniform Plumbing Code in effect in Washington also requires annual assembly testing. In addition to the testing required for the assemblies that protect the public water system (i.e., identified on the attached list), you may wish to have all of the remaining assemblies within your premises tested at this time.

If you have any questions, please feel free to contact me at {**insert phone number**}.

Sincerely,

Name
CCC Program Manager

Enclosures: Assembly List
Pre-Approved BAT List
Assembly Test Report Forms

Second Notice to Test Backflow Prevention Assembly

Date

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

Subject: Testing of Backflow Prevention Assembly - Second Notice
First Notice Date: _____ Second Notice Date: _____

Dear _____ Water System Customer:

Washington State drinking water regulations, WAC 246-290-490, require public water systems to implement cross-connection control programs to protect the drinking water supply from contamination. As part of this program, backflow prevention assemblies were installed on your service or within your premises to protect our water distribution system from contamination. The WAC requires these assemblies to be tested annually to verify that they are in good working condition.

The assembly/assemblies identified in our letter of {**insert date**} (copy attached) must be tested by a Department of Health certified Backflow Assembly Tester (BAT) upon installation and annually thereafter. This requirement is a condition of our system continuing to supply potable water to your premises. **According to our records, as of today's date, you have not submitted the requested Assembly Test Report(s).** If you believe this is in error, please contact me as soon as possible at the number below.

If you have not submitted the Assembly Test Reports as requested, please:

- Immediately employ a DOH-certified BAT to test the listed assembly/assemblies; and
- Submit a signed copy of the completed Assembly Test Report(s) to me at the address above **within 15 days of the date of this letter**.

Your cooperation in this matter is essential for protecting your drinking water supply and the public water supply from contamination. Failure to comply with the annual assembly testing requirement will trigger an enforcement action by our system. Enforcement could include a shut-off of your water service.

If you have any questions, please contact me at {**insert phone number**}.

Sincerely,

Name
CCC Program Manager

Enclosure: First Test Notice Letter

Standard Installation Drawings

The following pages show typical premises isolation installations of backflow assemblies (Illustrations 5 and 6).

Illustration 5
Standard Details - Service Connection Options
Single Family Residential

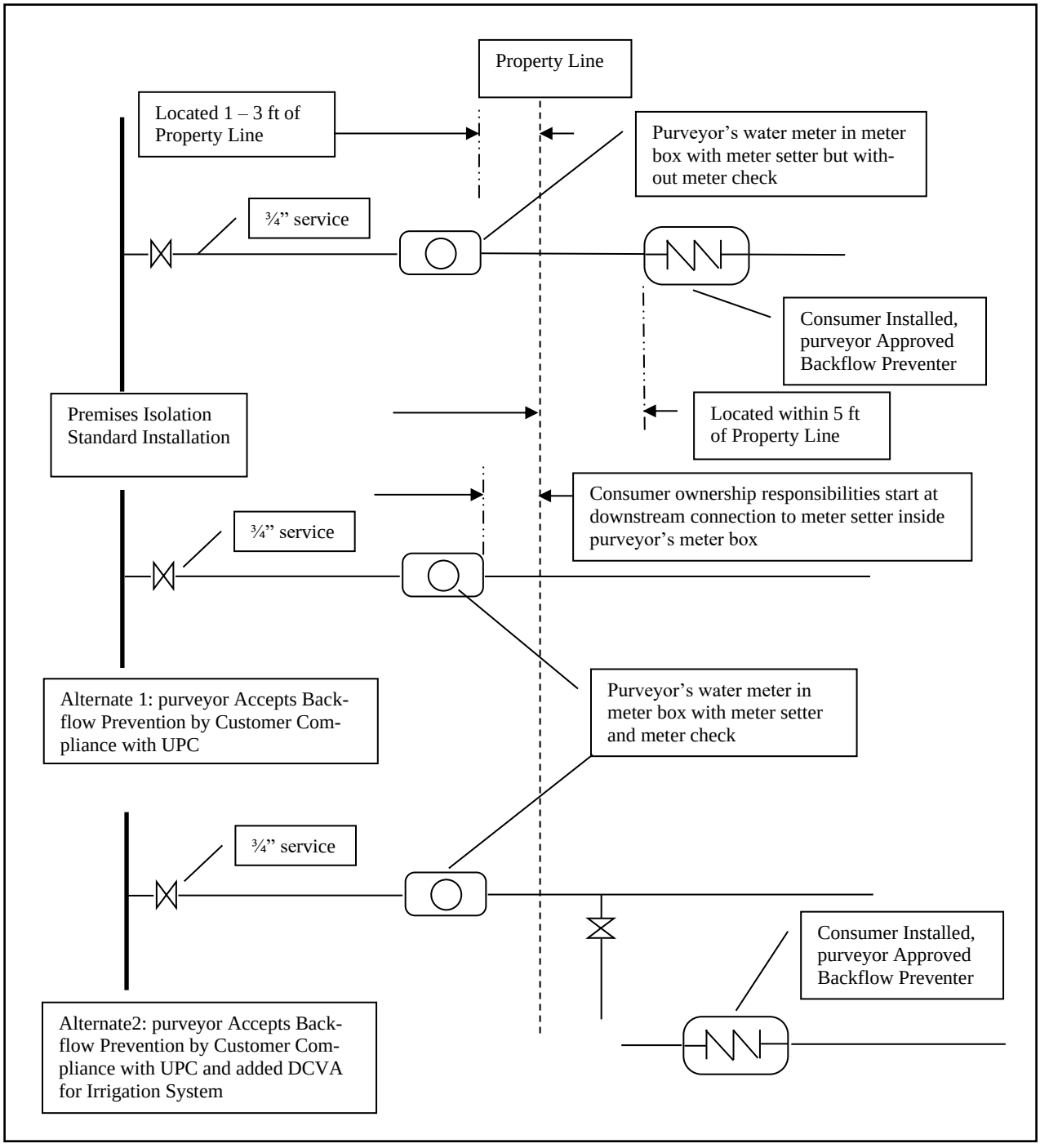
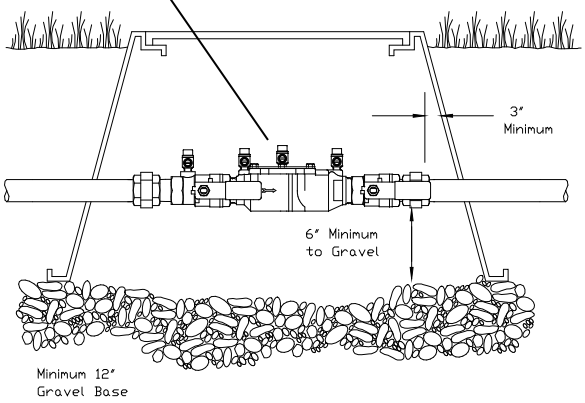


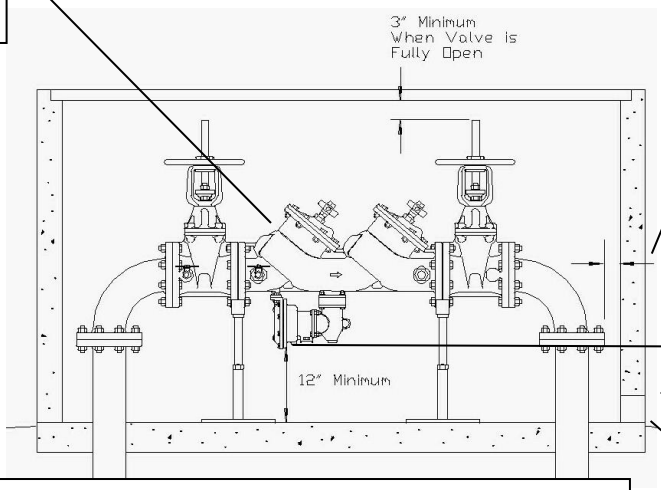
Illustration 6
Backflow Prevention Assemblies
Recommended Premises Isolation Installations

Purveyor Approved DCVA with test cocks pointed upwards with plastic plugs



Vault Installation – DCVA only

Purveyor Approved RPBA or DCVA



3" Minimum

Approved Air Gap - Required for RPBA

Drain to daylight- Required for RPBA

Lockable Insulated Enclosure Installation – RPBA and DCVA

All installations comply with manufacturer's recommendation and USCFCCCHR CCC Manual and PNWS-AWWA Manual standards

Appendix E
Annual Summary Report Forms

Appendix E contains sample cross-connection control (CCC) Annual Summary Report forms. Per WAC 246-290-490, purveyors are required to complete these forms to report information on the status of a public water system's CCC program and implementation activities. When the Department of Health sends out hard copies or electronic copies of the forms, they are color-coded. Purveyors often refer to the forms by color instead of name. The respective color of each form is noted below.

The three forms are:

1. **Cross-Connection Control Activities Annual Summary Report**

   Purveyors use this form to report (for a calendar year) their CCC implementation activities, such as status of high-hazard premises protection, backflow preventer inventory/testing information, and hazard evaluations. This is the "blue form."

2. **Cross-Connection Control Program Summary Report**

   This form is use to report the type, policies, and provisions of a public water system's CCC written program. This is the "cream form."

3. **Exceptions to High Health Hazard Premises Isolation Requirements**

   Purveyors use this form to document and report exceptions to mandatory premises isolation requirements allowed under WAC 246-290-490(4)(b)(iii). Only purveyors granting exceptions need to complete and submit this form. This is the "green form."

The forms provided are those used for the reporting year indicated on the forms. For copies of forms for later years, or for versions suitable for completion on screen using MS Word, contact the DOH Office of Drinking Water (see Appendix F)

Public Water System Cross-Connection Control Activities
Annual Summary Report for Year 2003

Part 1: Public Water System (PWS) and Cross-Connection Control Specialist (CCS) Information

PWS ID:	PWS Name:	County:
Provide name and Certification Number of CCS who develops and implements your CCC program.		
CCS Name (Last, First & MI): ,		CCS Phone: (___) ___-____
CCS Cert. No.:	BAT Cert. No. (if applicable):	
CCS is (check one): PWS owner or employee ☐ On contract to PWS ☐ Volunteer or other ☐		

Part 2: Status of Cross-Connection Control (CCC) Program

PWS has: A written CCC program Y ☐ N ☐ CCC implementation activities Y ☐ N ☐

(Written program may be a separate document or part of water system plan or small water system management program.)

Please provide information regarding PWS's specific CCC Program Elements. Check one box in each column.

Program Element Number	Description of Element [See WAC 246-290-490(3)]	This Program Element is Currently:	
		Included in Written Program	Being Implemented or is Completed
1	Legal Authority Established	Y ☐ N ☐	Y ☐ N ☐
2	Hazard Evaluation Procedures and Schedules	Y ☐ N ☐	Y ☐ N ☐
3	CCC Procedures and Schedules	Y ☐ N ☐	Y ☐ N ☐
4	Certified CCS Provided	Y ☐ N ☐	Y ☐ N ☐
5	Backflow Preventer Inspection and Testing	Y ☐ N ☐	Y ☐ N ☐
6	Testing Quality Control Assurance Program	Y ☐ N ☐	Y ☐ N ☐
7	Backflow Incident Response Procedures	Y ☐ N ☐	Y ☐ N ☐
8	Public Education Program	Y ☐ N ☐	Y ☐ N ☐
9	CCC Records	Y ☐ N ☐	Y ☐ N ☐
10	Reclaimed Water Permit	Y ☐ N ☐ N/A ☐	Y ☐ N ☐ N/A ☐

Part 3A: System Characteristics at End of 2003

Indicate the number of connections of each type that the PWS serves (whether or not they are protected by backflow preventers). **Estimate if necessary**.

Type of Service Connection	Number
Residential (as defined by PWS)	
All Other (include dedicated fire sprinkler and irrigation lines and PWS-owned facilities such as water and wastewater treatment plants and pumping stations, parks, piers and docks)	
Total Number of Connections	

Part 3B: Cross-Connection Control for High-Hazard Premises or Systems Served by the PWS

If PWS does not serve any high-hazard premises or systems, check here ☐ and go to Part 4.

- Complete all cells. Count only premises PWS serves water to. Enter zero (0) in cells if PWS does not serve such premises.
- Estimate number of connections served if necessary (OK to use phone book).
- Hazard evaluations do not need to be done to complete this table.

Type of High-Hazard Premises or Systems [WAC 246-290-490(4)(b)]	Number of Connections at end of 2003			
	Being Served Water by PWS[1]	With Premises Isolation by AG/RP[2]	With Premises Isolation AG/RP Inspected or Tested[3]	Granted Exception from Mandatory Premises Isolation
Agricultural (farms and dairies)				
Beverage bottling plants (including breweries)				
Car washes				
Chemical plants				
Commercial laundries and dry cleaners				
Both reclaimed water and potable water provided				
Film processing facilities				
Dedicated fire protection systems with chemical addition or using unapproved auxiliary supplies				
Food processing plants (including canneries, slaughter houses, rendering plants)				
Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers				
Separate irrigation systems using purveyor's water supply and chemical addition[4]				
Laboratories				
Metal plating industries				
Mortuaries				
Petroleum processing or storage plants				
Piers and docks				
Radioactive material processing plants or nuclear reactors				
Survey access denied or restricted				
Wastewater lift stations and pumping stations				
Wastewater treatment plants				
Unapproved auxiliary water supply interconnected with potable water supply				
Other high-hazard premises (list)[5]				
Totals				

[1] Count multiple connections or parallel installations as separate connections.

[2] Count only those connections with AG or RP installed for premises isolation. Do not include connections with only in-premises protection, or those with DCVA/DCDAs installed for premises isolation.

[3] Count only those connections ***whose premises isolation preventers*** were tested or inspected during year 2003

[4] For example, parks, playgrounds, golf courses, cemeteries, estates, etc.

[5] Premises with hazardous materials or processes (requiring isolation by AG or RP), such as: aircraft and automotive manufacturers, pulp and paper mills, metal manufacturers, military bases, and wholesale customers that pose a high hazard to the PWS. May be grouped together in categories, e.g.: other manufacturing, or other commercial. ***If needed, attach additional sheet giving same information as requested by table.***

Part 4A: Backflow Preventer Inventory and Testing Data During Year 2003

- Complete all cells. Enter zero (0) if there are no backflow preventers in the category.
- **Count only the backflow preventers that the PWS relies upon for protection of the distribution system.** ***If your records do not distinguish between premises isolation and in-premises protection preventers, enter all data in Premises Isolation section and check the box.***
- Count AVBs on irrigation systems only. **If you do not track AVBs, check box above the "AVB" column.**
- Count multiple tests or failures for any particular backflow preventers as one test or failure for that backflow preventer.
- Multiple Service or Parallel Connections**:** count each assembly separately.
- Assemblies on Dedicated Fire or Irrigation Lines: count as Premises Isolation Assemblies. **If PWS does not track AVBs check here** ☐

	Backflow Preventer Category and Testing/ Inspection Information	**Air Gap**	**RPBA**	**RPDA**	**DCVA**	**DCDA**	**PVBA**	**SVBA**	**AVB**
Premises Isolation, including preventers isolating PWS-owned facilities. ***If In-Premises Protection preventers are also included, check here*** ☐**.**									
Rows 1 – 3 pertain ONLY to Premises Isolation preventers in service at beginning of 2003									
1	In service at beginning of 2003								
2	Inspected and/or tested in 2003[1]								
3	Failed Inspection or test in 2003								
Rows 4 – 6 pertain ONLY to NEW Premises Isolation preventers installed during 2003									
4	New preventers installed in 2003[2]								
5	Inspected and/or Tested in 2003[1]								
6	Failed inspection or test in 2003								
Premises Isolation Total at end of 2003[3]									
Installed for In-Premises Protection (Fixture Protection or Area Isolation), including preventers within PWS-owned facilities.									
Rows 7 – 9 pertain ONLY to In-Premises Protection preventers in service at beginning of 2003									
7	In service at beginning of 2003								
8	Inspected and/or Tested in 2003[1]								
9	Failed Inspection or Test in 2003								
Rows 10 – 12 pertain ONLY to NEW In-Premises Protection preventers installed during 2003									
10	New preventers installed in 2003[2]								
11	Inspected and/or Tested in 2003[1]								
12	Failed inspection or test in 2003								
In-Premises Protection Total at end of 2003[3]									
Grand Total at end of 2003									

[1] Initial and/or routine annual inspection (for proper installation and approval status) and/or test (for testable assemblies only using DOH/USC test procedures).

[2] Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced preventers those in service at beginning of 2003. Replacement preventers may be of a different type than the original.

[3] Total installed at end of 2003 can't be more than preventers in service at beginning of 2003 plus those installed during 2003. May be less due to changes in preventer type and preventers taken out of service during 2003.

Part 4B: Other Implementation Activities in 2003

Complete all cells. Enter zero (0) if not applicable.

Activity or Condition	Number
New services connections evaluated for cross-connection hazards to PWS in 2003.	
New services connections requiring backflow protection to protect PWS.[1]	
Existing services connections evaluated for cross-connection hazards to PWS in 2003.	
Existing services connections requiring backflow protection to protect PWS.[1, 2]	
Exceptions granted to high-hazard premises per WAC 246-290-490(4)(b) in 2003.[3]	
CCC Corrective enforcement actions taken by PWS during 2003.[4]	

[1] Include services where either premises isolation or in-premises preventers were required to protect the PWS.
[2] Include existing services that need new, additional or higher level backflow prevention.
[3] A DOH Exception to Hazard Premises Form *must* be attached for each exception granted during the year.
[4] "Enforcement actions" mean actions taken by the PWS (such as water shut-off, PWS installation of backflow preventer) when the customer fails to comply with PWS's CCC requirements.

Part 5: Backflow Incidents, Risk Factors and Indicators during 2003

	Backflow Incidents, Risk Factors and Indicators during 2003	***Number*** (Enter 0 if none)	Check if Data Not Available
Backflow Incidents during 2003			
1	Backflow incidents that contaminated the PWS.[5]		☐
2	Backflow incidents that contaminated the customer's drinking water system ***only***.[5]		☐
Risk Factors for Backflow during 2003			
3	Distribution main breaks per 100 miles of pipe.		☐
4	Low pressure events (<20 psi in PWS distribution system).		☐
5	Water outage events.		☐
Indicators of Possible Backflow during 2003			
6	Total health-related complaints received by PWS.[6]		☐
7	Received during BWA or PN events.[7]		☐
8	Received during low pressure or water outage events.		☐
9	Total aesthetic complaints (color, taste, odor, air in lines, etc.).		☐
10	Received during BWA or PN events.[7]		☐
11	Received during low pressure or water outage events.		☐

[5] Complete and submit a Backflow Incident Report form for each known backflow incident.
[6] Such as stomach ache, headache, vomiting, diarrhea, skin rashes, etc.
[7] "**BWA**" means ***Boil Water Advisory*** and **"PN"** means ***Public Notification*** for water quality reasons.

.Part 6: Comments and Clarifications

Enter comments or clarifications to any of the information included in this report.
Note for on-screen completion: Comments will not "wordwrap" from one line to the next. Press <Enter> to continue on new line. Maximum length of each comment is 255 characters, including spaces.

Part No.	Comment

Part 7: Report Completion Information

Enter dates in MM/DD/YYYY format.

I certify that the information provided in this CCC Activities Report is complete and accurate to the best of my knowledge.		
CCC Program Mgr. Name (Print)[1]:		Title:
Signature:		Date:
Phone: (___) ___-____	E-mail: _____@_____	
I have reviewed this report and certify that the information provided is complete and accurate to the best of my knowledge.		
PWS Mgr./Owner Name (Print)[2]:		Title:
Signature:	Op. Cert. No.:	Date:

[1] CCC Program Manager is generally the CCS who is responsible for development and implementation of the PWS's CCC Program.
[2] The person that the CCC Program Manager reports to or other manager having direct responsibility and or oversight of the CCC program.

Cross-Connection Control Program Summary
For 2003

Describe the characteristics of the PWS's CCC Program at the end of the 2003 reporting year.

Part 1: Public Water System (PWS) Identification

PWS ID:	PWS Name:	County:

Part 2: Cross-Connection Control (CCC) Program Characteristics

A. Type of Program Currently Implemented

Type of Program	Check One
Premises isolation only.	☐
Combination program: reliance on both premises isolation and in-premises protection.	☐
In transition from a combination program to a premises isolation only program.	☐

B. Coordination with Local Administrative Authority (LAA) on Cross-Connection Issues

Indicate the status of coordination with LAAs in your service area. The LAA is the entity that enforces the Uniform Plumbing Code. ***Check one box in each of last 3 columns for each LAA in your service area***.

LAA No.	Name of LAA[1] (e.g., the City or County Building Department)	PWS currently:		If not coordinating, did LAA Decline to Coordinate?
		Coordinates with LAA	Has Written Agreement with LAA	
1		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
2		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
3		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
4		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
5		Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐

[1] If more than 5 LAAs, attach separate sheet giving the above information.

C. Corrective or Enforcement Actions Available to the Purveyor

Type of Corrective Action	Indicate Whether Available	Most Often Used (Check one)
Denial or discontinuance of water service.	Y ☐ N ☐	☐
purveyor installs backflow preventer and bills customer.	Y ☐ N ☐	☐
Assessment of fines (in addition to elimination or control of cross-connection).	Y ☐ N ☐	☐
Other corrective actions (describe below):	Y ☐ N ☐	☐

D. CCC Program Typical Responsibilities

Typical responsibilities *do not* include enforcement action related procedures or circumstances.

CCC Program Activity	Responsible Party (Check one per row)	
	Customer	**Purveyor**
Hazard Evaluation by DOH-certified CCS.	☐	☐
Backflow preventer (BP) ownership.	☐	☐
BP installation.	☐	☐
BP ***initial*** inspection (for proper installation – all BPs).	☐	☐
BP ***initial*** test (for testable assemblies).	☐	☐
BP ***annual*** inspection (Air Gaps and AVBs).	☐	☐
BP ***annual*** test (for testable assemblies).	☐	☐
BP maintenance and repair.	☐	☐

E. Backflow Protection for Fire Protection Systems

Please remember to enter number of days allowed if you require retrofitting.

PWS coordinates with ***LAA*** on CCC issues for fire protection systems (FPS).		Y ☐ N ☐ N/A ☐
PWS coordinates with ***local Fire Marshal*** on CCC issues for FPS.		Y ☐ N ☐ N/A ☐
PWS ensures backflow prevention is installed before serving ***new*** connections with FPS.		Y ☐ N ☐
PWS requires retrofits to ***high***-hazard FPS.	Y ☐ (No. of days allowed: _____)	N ☐ N/A ☐
PWS requires retrofits to ***low***-hazard FPS.	Y ☐ (No. of days allowed: _____)	N ☐ N/A ☐

F. Backflow Protection for Irrigation Systems

Minimum level of backflow prevention required on irrigation systems ***without*** chemical addition.	Not Addressed ☐ AVB ☐ PV/SVBA ☐ DCVA ☐ RPBA ☐
PWS currently inspects AVBs upon ***initial*** installation.	Y ☐ N ☐ N/A ☐
PWS currently inspects AVBs upon repair, reinstallation or relocation.	Y ☐ N ☐ N/A ☐

G. Used Water

PWS prohibits, by ordinance, rules, policy or agreement, the intentional return of used water (e.g., for heating or cooling**)** into the distribution system.		Y ☐ N ☐
If not prohibited at present, date plan to prohibit.	Date (mm/dd/yyyy):	N/A ☐
Current number of service connections returning used water to distribution system.		

H. Backflow Protection for Unapproved Auxiliary Water Supplies[1] NOT Interconnected with PWS

Indicate the **minimum** backflow preventer and type of protection required for service connections having unapproved auxiliary water supplies *when they are NOT interconnected to the PWS.* Check only one per row.

Existing service connections.	None ☐	DCVA ☐	RPBA ☐	AG ☐
Type of protection required.	None ☐	In-premises protection ☐	Premises isolation ☐	
New service connections.	None ☐	DCVA ☐	RPBA ☐	AG ☐
Type of protection required.	None ☐	In-premises protection ☐	Premises isolation ☐	

[1] An auxiliary water supply is any water supply on or available to the customer's premises in addition to the Purveyor's potable water supply.

I. Backflow Protection for Tanker Trucks and Temporary Water Connections

Minimum level of backflow protection (installed on or associated with the truck) required for tanker trucks taking water from PWS.	AG ☐ DCVA ☐ RPBA ☐ Not specified ☐ Tanker trucks not allowed ☐
PWS requires tanker trucks to obtain water at designated filling sites each equipped with permanently installed backflow preventer(s).	Y ☐ (Min. site protection: DCVA ☐ RPBA ☐) N ☐ N/A ☐ No sites provided ☐
PWS currently accepts tanker trucks approved by other PWSs without further inspection or testing.	Y ☐ N ☐ N/A ☐
Minimum level of backflow protection required for temporary water connections (e.g., for construction sites).	AG ☐ DCVA ☐ RPBA ☐ Not specified ☐ Temp. connections not allowed ☐
PWS requires testing each time the temporary connection backflow preventer is relocated.	Y ☐ N ☐ N/A ☐ (Temp. connections not allowed)
PWS provides approved backflow preventer for temporary connections.	Y ☐ N ☐ N/A ☐ (Temp. connections not allowed)

J. Backflow Protection for Non-Residential Connections

For each category shown, indicate whether PWS has non-residential connections of that type and the **minimum** level of ***premises isolation*** backflow protection required (whether or not PWS currently has that type of customer).

Type of Connection	**PWS has Customers of this Type**	**Minimum Premises Isolation Backflow Protection Required**
Commercial	Y ☐ N ☐	Not required ☐ DCVA ☐ RPBA ☐
Industrial	Y ☐ N ☐	Not required ☐ DCVA ☐ RPBA ☐
Institutional	Y ☐ N ☐	Not required ☐ DCVA ☐ RPBA ☐
Other (specify): _____	Y ☐ N ☐	Not required ☐ DCVA ☐ RPBA ☐
Other (specify): _____	Y ☐ N ☐	Not required ☐ DCVA ☐ RPBA ☐

K. Backflow Protection for Wholesale Customers

Indicate whether the PWS requires backflow protection at interties with wholesale customers (other PWSs).

Type of Intertie	**PWS has (plans to have) Customers of this Type**	**Backflow Protection Required** (If protection is required, indicate minimum level)
Existing	Y ☐ N ☐	Not specified/Not required ☐ Always required ☐ Required only if purchaser's CCC program is inadequate ☐ Minimum required (if applicable): DCVA ☐ RPBA ☐
New	Y ☐ N ☐	Not specified/Not required ☐ Always required ☐ Required only if purchaser's CCC program is inadequate ☐ Minimum required (if applicable): DCVA ☐ RPBA ☐

Part 3: CCC Program Record-Keeping and Inventory

Indicate the type or name of computer software used by the PWS to track CCC records.

BMI ☐ BPMS ☐ Engsoft ☐ Tokay ☐ Other commercial CCC software ☐ (specify): _____
Custom developed for or by PWS[1] ☐ Other non-CCC software (e.g., Excel) ☐ None Used ☐

[1] Do not include commercial CCC software customized for PWS. Indicate these on line above.

Part 4: Comments and Clarifications

Enter comments or clarifications to any of the information included in this report.
Note for on-screen completion : Comments will not "wordwrap" from one line to the next. Press <Enter> to continue on new line. Maximum length of each comment is 255 characters, including spaces.

Part No.	Comment

Part 5: CCC Program Summary Completion Information

Enter dates in MM/DD/YYYY format.

I certify that the information provided in this CCC Program Summary is complete and accurate to the best of my knowledge.		
CCC Program Mgr Name (Print)[2]:		Title:
Signature:		Date:
Phone: (___) ___-____	E-mail: _____@_____	
I certify that the information provided in this report accurately represents the status and description of this water system's CCC Program.		
PWS Mgr Name (Print)[3]:		Title:
Signature:	Op. Cert No:	Date:

[2] The CCC Program Manager is generally the CCS who is responsible for development and implementation of the CCC program.
[3] The person that the CCC Program Manager reports to or other manager having direct responsibility and/or oversight of CCC program.

Exceptions to High Health Hazard Premises Isolation Requirements For 2003 Annual Summary Report

Exceptions forms must be completed and submitted to the Department of Health (DOH) with the Annual Summary Report per WAC 246-290-490(4)(b)(iii).

Complete one form for **each** exception that was granted:

- During 2003; or
- Prior to 2003, **if** you didn't submit an Exceptions form to DOH previously (i.e., don't duplicate previously submitted Exception forms).

If your system didn't grant any exceptions in 2003, and you have already submitted forms for exceptions granted prior to 2003, don't complete any Exception forms for 2003.

Part 1: Public Water System (PWS) Information

PWS ID:	PWS Name:	County:

Part 2: Premises Information

Name of Premises	
Service Address	
Premises Type or Category – Refer to Table 9 of WAC 246-290-490(4)(b)	
Additional Information or Description of Premises to help explain why exception is appropriate:	

Part 3: Information Regarding Exception to Premises Isolation

Enter dates in MM/DD/YYYY format.

Date of Hazard Evaluation	
Date Exception Granted	
Expiration Date of Exception (if any)	
Date of Next Hazard Evaluation	

Name of Premises: _____

Part 4: Justification for not Requiring Premises Isolation Using AG, RPBA or RPDA

- The reasons for not requiring mandatory premises isolation shown in the table are typical examples. *purveyors are not required to follow or apply any of these reasons.*
- purveyors may provide other reasons consistent with WAC 246-290-490(4)(b)(ii), i.e., no hazard exists for this particular service.

Reason that the Premises *Do Not* Pose a High Health Hazard to PWS	**Check if Applicable**
Medical/Health Services Facility not having laboratory or similar facilities, e.g., Psychiatric or Counseling Office.	☐
Dental Office having independent water supplies for dental work (no interconnection with purveyor's water system).	☐
"Bottling Plant" without bottling processes, e.g., Warehousing only.	☐
Laundry or Dry Cleaners without cleaning processes on premises, e.g., customer drop-off and/or pick-up only.	☐
Marina/Dock for small boat moorage only (no water/sewage facilities on board).	☐
Agricultural Premises with "hobby farm" (non-commercial) activities only.	☐
Other (please describe):_____	☐
	☐
	☐
	☐

Part 5: Form Completion Information

Enter dates in MM/DD/YYYY format.

I am the Cross-Connection Control Specialist (CCS) who granted this exception to mandatory premises isolation and certify that the information provided is complete and accurate to the best of my knowledge.		
Name (Print)**:**		CCS Cert. No:
Signature:		Date:
Phone: (___) ___-____	E-mail: _____@_____	
I am the Manager* of the PWS and I concur with the granting of this exception to mandatory premises isolation and certify that the information provided is complete and accurate to the best of my knowledge.		
Name (Print)**:**		Title:
Signature :	Op. Cert. No:	Date:

* The person that the CCS reports to or other manager having direct responsibility for and/or oversight of the CCC program. It is not required that this person be in charge of the entire water system.

Appendix F
Cross-Connection Control Resource Information

Guide to Cross-Connection Control Publications

Title	Publisher	Contact Information
Cross Connection Control Manual, Accepted Procedure And Practice 6th Edition, 1995 ("Yellow Manual")	Pacific Northwest Section, American Water Works Association	PO Box 2050 Clackamas, OR 97015-2050 (877) 767-2992 (toll-free)
Summary of Backflow Incidents 4th Edition, 1995	Pacific Northwest Section, American Water Works Association	PO Box 2050 Clackamas, OR 97015-2050 (877) 767-2992 (toll-free)
Backflow Incident Investigation Procedures 1st Edition, 1996	Pacific Northwest Section, American Water Works Association	PO Box 2050 Clackamas, OR 97015-2050 (877) 767-2992 (toll-free)
Note: the above three manuals along with two additional manuals are available on one CD-ROM (pdf format). The cost of the CD is much lower than the cost to purchase the three manuals separately in printed form.		
Manual of Cross-Connection Control 9th Edition, 1993	University of Southern California, Foundation for Cross-Connection Control & Hydraulic Research	KAP-200 University Park MC-2531 Los Angeles, CA 98089-2531 (213) 740-2032

Local, Regional and National Cross-Connection Control Organizations

Organization Information	Description	Resources Available (*Publications in Italics*)
Within Washington		
Washington State Department of Health Office of Drinking Water P. O. Box 47822 Olympia, WA 98504-7822 1-800-521-0323 (toll-free) www.doh.wa.gov/ehp/dw	Administers the State Drinking Water Regulations (Chapter 246-290 WAC), including Cross-Connection Control (CCC) Requirements for Public Water Systems (WAC 246-290-490).	• Regulation interpretation and general technical assistance on starting and implementing a CCC program • *Cross-Connection Control Guidance Manual for Small Water Systems* • *Backflow Assemblies Approved for Installation in Washington State* (available from Training and Outreach Section)
Western Washington Cross-Connection Prevention Professionals Group ("The Group") P. O. Box 94551 Seattle, WA 98124 www.backflowgroup.org	An organization of CCC professionals (including Cross-Connection Specialists [CCSs], Backflow Assembly Testers [BATs], and others interested in CCC) in Western Washington who meet monthly to discuss CCC-related topics and exchange information on program development and implementation. Annual dues are $10.00.	• *Brochures on assembly installation requirements* • Annual seminar in October each year • BAT forum in the spring • Special CCC seminars • Internet access to USC List of Approved Assemblies
Spokane Regional Cross-Connection Control Committee (SRC4) P. O. Box 13086 Spokane, WA 99213 www.src4.org	An organization of CCC professionals (CCSs, BATs, and others) in Eastern Washington who meet monthly to discuss CCC-related topics and exchange information on program development and implementation. Annual dues are $20.00.	• *Brochures for consumers on common CCC subjects* • Annual seminar in February each year • Special CCC seminars and exam review sessions • Comprehensive CCC Newsletter periodically • Internet access to USC List of Approved Assemblies

Organization Information	Description	Resources Available (*Publications in Italics*)
Washington Environmental Training and Resource Center (WETRC) 2401 SE 320th Street, M/S WW Auburn, WA 98029 1-800-562-0858 (toll-free) http://www.greenriver.edu/WETRC/	Part of Green River Community College, WETRC is the principal training center in Washington for drinking water related subjects, including CCC. WETRC offers various CCC courses including those designed to prepare individuals for the CCS and BAT certification exams. WETRC also currently administers the BAT program for DOH.	• *Backflow Assembly Field Test Procedures Approved for Use in Washington State (DOH publication provided as part of BAT classes)* • General CCC classes • CCS classes • BAT classes and exams
Evergreen Rural Water of Washington (ERWOW) P. O. Box 2300 Shelton, WA 98584 1-800-272-5981 (toll-free) www.erwow.org	An organization that represents small public water systems in Washington. It provides training in various subjects of interest to small systems, including CCC program development and implementation.	• CCC program review course • CCS exam review course
Regional		
British Columbia Institute of Technology (Piping Department) 3700 Willingdon Ave Burnaby, British Columbia Canada V5G 3H2 (604) 434-5734 www.bcit.ca	An educational institution, founded by the British Columbia Provincial government, that specializes in technical and technology subjects. The Institute grants Bachelor degrees in several areas. Cross-Connection Management and Backflow Assembly Tester certificates are offered through the British Columbia Water and Wastewater Association (BCWWA).	• CCC Program Management (CCS) • Backflow Assembly Testing (BAT)

Organization Information	Description	Resources Available (*Publications in Italics*)
CCC Committee **Pacific Northwest Section** **American Water Works Association** (PNWS-AWWA) P. O. Box 2050 Clackamas, OR 97015-2050 1-877-767-2992 (toll-free) www.pnws-awwa.org	An official committee of the PNWS-AWWA that has a well-defined membership representing the Pacific Northwest states. The Committee publishes numerous CCC-related manuals, provides CCC training and offers CCS scholarships for systems with ≤ 2500 connections. The Committee holds quarterly meetings that are open to all interested parties.	• *Cross-Connection Control Manual, Accepted Procedure and Practice – 6th Edition* • *Summary of Backflow Incidents – 4th Edition* • *Backflow Incident Investigation Procedures** • *Numerous CCC public education brochures* *First 3 publications available on CD-ROM for $25.
Clackamas Community College 19600 South Molalla Ave Oregon City OR 97045 (503) 675-6958 www.clackamas.cc.or.us	Clackamas Community College is one of the principal training centers in Oregon for drinking water related subjects, including CCC. The Water and Environmental Technology Program offers Certificate and Associate of Applied Science Degree Programs.	Clackamas offers various CCC courses including those designed to prepare individuals for the CCS and BAT certification exams, such as: • General CCC classes • Inspector (CCS) classes • BAT classes and exams
National		
American Backflow Prevention Association (ABPA) P. O. Box 3051 Bryan, TX 77805-3051 (979) 846-7606 www.abpa.org	An international organization whose members are from all aspects of the backflow prevention industry including, building officials, standards organizations, CCC professionals, assembly testers, plumbers, public health officials and backflow preventer manufacturers. Annual dues are $30.00.	• *ABPA News* (bimonthly publication with news and technical articles on the CCC industry) • *The Dangers of Cross-Connections* (video for public water systems on the need for CCC programs and how to develop them) • Website has a forum for discussion of CCC topics

Organization Information	Description	Resources Available (*Publications in Italics)*
University of Southern California Foundation for Cross-Connection Control and Hydraulic Research Kaprielian Hall - 200 Los Angeles, CA 90089-2531 (213) 740-2032 www.usc.edu/dept/fccchr	The Foundation, associated with the University of Southern California, conducts research and has products and services (technical assistance) to help public water systems and others with their CCC programs. The Foundation has a comprehensive backflow assembly evaluation program, publishes a list of approved backflow prevention assemblies, and publishes a CCC manual. Annual membership costs vary depending on system size and/or type of organization.	• *Manual of Cross-Connection Control, 9th Edition* (10th Edition currently under development) • *List of Approved Backflow Prevention Assemblies* (for Foundation members only) • Website has useful introduction to CCC and prevention of backflow
Drinking Water and Backflow Prevention S.F.A. Enterprises, Inc. P.O. Box 33209 Northglenn, CO 80233-9951 1-888-367-3927 (toll-free) www.dwbp-online.com	A private company whose emphasis is to provide information and assist in the awareness of the potential hazards associated with the quality of drinking water supply.	• *Drinking Water and Backflow Prevention.* (a monthly magazine with news and technical articles about CCC and backflow prevention industry)

Cross-Connection Control Software

The following list identifies some of the companies that supply PC software database management programs for cross-connection control. The average price is in excess of $1,000. However, prices often depend upon the maximum number of assemblies being tracked. Many companies have free demo CDs available. ***Note: appearance on this list does not constitute an endorsement by DOH.***

Software Program Title	Company Name and Address	Contact Information
BPMS	**BPMS Software** 4060 Irmin St Burnaby, British Columbia Canada V5J 1X4	**www.bpms.net** 1-877-250-2698 (toll-free) Email: bpms@bpms.net
C4-Complete Cross Connection Control Software	**Hydro Designs, Inc.** 2222 Franklin Road, #200 Bloomfield Hills, MI 48302	**www.hydrodesignsinc.com** (248) 335-3122 Email: Jhudak@hydrodesignsinc.com
CHS MMIS7 for Water	**CHS Software & Consulting, Inc.** 12507 Bel-Red Rd., Ste 101 Bellevue, WA 98005	**www.chssoftware.com** (425) 637-3693 Email: chs@seanet.com
Cross-Track	**BMI** 17752 NE San Rafael St Portland, OR 97230	**www.bmi-backflow.com** 1-800-841-7689 (toll-free) Email: support@bmi-backflow.com

Software Program Title	Company Name and Address	Contact Information
Smart Water Systems	**Smart Water Systems** P O Box 481 Manchester, WA 98353-0481	**(No website at present)** (360) 871-4987 Email: gherbison@netscape.net
Specialized Systems Software	**Specialized Systems Software** 356 NE Kingwood Place College Place, WA 99324	**www.specsys.us** (509) 629-0877 Email: info@specsys.us
Tokay Backflow Prevention Management Software	**Tokay Software** P O Box 2439 Framingham, MA 01703	**www.tokay.com** 1-800-865-2965 (Toll-free) Email: tokay@tokay.com
XC^2	**Engsoft Solutions** 9 Mono Avenue Fairfax, CA 94930	**www.engsoft.com** 1-800-761-4999 (Toll-free) Email: XC2@engsoft.com