

CITY OF ROY, WASHINGTON

RESOLUTION NO. 873

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROY,
PIERCE COUNTY, WASHINGTON, ADOPTING CROSS-
CONNECTION CONTROL IMPLEMENTATION PROCEDURES.**

WHEREAS, the Roy City Council adopted the City of Roy Cross-Connection Control Program by Ordinance No. 687; and

WHEREAS, the City of Roy is required by the state Department of Health to adopt specific procedures for the implementation of the CCC Program; and

WHEREAS, city staff members have created the document attached as Exhibit A using the Department of Health's Guidance Document: *Cross-Connection Control for Small Water Systems*; and

WHEREAS, city staff members have requested additional input from Thurston PUD, ERWoW, city engineers and our liaison with the Department of Health;

NOW, THEREFORE, be it resolved by the City Council of the City of Roy, Washington:

Section 1. That the document attached as Exhibit A, "Cross-Connection Control Implementation Procedures," is hereby adopted and shall be made available in the City Clerk-Treasurer's Office.

Section 2. Severability. If any section, sentence, clause or phrase of this Resolution should be held to be unconstitutional or unlawful by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this Resolution.

Section 3. All acts consistent with this Resolution are hereby authorized.

Introduced, passed and approved this 23rd day of July, 2018.


RAWLIN MCDANIEL, Mayor

Attest:


DEBRA DEARINGER
City Clerk-Treasurer

Approved as to Form:


LISA MARIE ROYBAL ELLIOTT
City Attorney

CROSS-CONNECTION CONTROL IMPLEMENTATION PROCEDURES

Ordinance No. 687 adopted the City of Roy Cross-Connection Control Program, which is **Appendix D of the City of Roy Water System Plan**.

The Program designates the certified cross-connection control specialist (“CCS”) as the Cross-Connection Control Program **Administrator**. The CCS may be a Satellite Management Agency, and in that case shall oversee but delegate the tasks of the Administrator to the City’s Public Works Director. The Public Works Director delegates certain tasks to the City Clerk-Treasurer or designee.

The Program puts the direction of the water system and the Program under the elected **Board**. The city council is the elected body responsible for the water system. On 1/23/2017 the city council named a Board for the Program consisting of the council member in the position taking primary responsibility for the water system, the city clerk-treasurer and the water system’s cross-connection control specialist.

Cooperation

City representatives (CCS, Administrator, Board, designees, building code staff and contractors, emergency personnel) shall exchange information and work together to ensure that public health is protected and shall seek assistance when necessary from other agencies and jurisdictions. Conflicts shall be resolved by the mayor after considering the input of those involved.

Service agreement

Every customer obtains water service by implied agreement. The agreement may be verbal or written. Initially the agreement (contract) may be in the form of the customer requesting to open a water service account or purchase a connection, payment of the associated fees, and the City opening the account or approving the service connection. Thereafter, the agreement continues in the form of the customer's payment of the water bill. The terms of the agreement (contract) are set forth in city code and adopted plans. New customers receive information about the Program, which is also accessible on the City’s website. Notices to customers concerning CCC actions include an explanation of the consequences of failing to comply.

The service agreement elements incorporated into notices to the customer to test assemblies or submit a hazard survey could include the following:

- In the past, the City requested the installation of a backflow assembly on the customer's water service to protect the water distribution system;
- This benefits the customer by providing protection for the water distribution system and protection against liability for contamination by the customer;
- To continue with this arrangement, the customer must have the assemblies tested by a DOH-certified BAT and maintained, repaired, or replaced as needed to assure performance;

- The customer has an assembly on his service pipe; however, such installation will not relieve the customer of his responsibility to comply with the requirements of the Uniform Plumbing Code enforced by the City of Roy.
- Reclaimed water shall not be returned into the water system distribution system.

Corrective actions

The failure of a customer to comply with the City's requirement for inspection, testing, etc., or a backflow assembly that fails the annual test may be cause for corrective action. Corrective action is taken after appropriate notice and may include, but is not limited to:

1. Denying or discontinuing water service to a customer's premises until the cross-connection hazard is eliminated or controlled to the satisfaction of the City;
2. Requiring the customer to install an approved backflow preventer for premises isolation commensurate with the degree of hazard; and/or
3. The City installing an approved backflow preventer for premises isolation commensurate with the degree of hazard."
4. Requiring the customer to install, or the City installing, a RPBA in an approved installation if the customer wishes to preclude inspections to assess degree of hazard.

Evaluation

- New connections: Customers apply for building permits and water service permits together. Applications request information about water use. The building code inspector and the CCS cooperate to determine necessary backflow assembly.
- Existing connections, new customers: If building permits are involved, the "new connections" evaluation procedure applies. If no building permits are involved, the City gives the new customer the CCC information and a water use questionnaire to be completed within 30 days. The CCS evaluates the answers and acts accordingly.
- Existing connections: A water use questionnaire was collected from customers in 2017 and will be repeated for residential customers every 5 years, from non-residential low hazard facilities every 2 years, and from non-residential high hazard facilities every 12 months. (See Table 9 of WAC 246-290-490) The CCS evaluates the answers and acts accordingly.
- Questionnaire incomplete/insufficient: The CCS will give written notice by mail or door hanger of the requirement to inspect the facility/residence within 15 days, or by a specified date. Failure to allow access will generate second and third notices with similar deadlines by door hangers subject to the City's applicable fees for posting notices. Service will then be shut off.

Specific requirements

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

(RPBA). The City may accept the recommendations or submit the recommendations to the City's CCS for peer review and concurrence, before acceptance. As an alternative to the above requirement for a survey by a CCS, the customer may agree to install an approved air gap (AG) or RPBA for premises isolation as a condition of service.

2. For all ***new residential services***, the City will require that the customer submit with the application for water service a completed "Water Use Questionnaire." 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 City an evaluation by a DOH-certified CCS of the hazard posed by the proposed special plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA. As an alternative to the above requirement for a survey by a DOH-certified CCS, the City, at its discretion, may specify the backflow preventer required to be installed as a condition of service.
3. For ***existing services*** with water use questionnaires submitted, where a backflow preventer is not currently installed but is needed, the City will offer the customer the option of:
 - a. obtaining a plumbing permit, having a contractor install the required preventer to required standards, submitting test results by a certified BAT, and passing inspection by the City's CCS and its building code inspector
 - b. obtaining a plumbing permit, having a contractor install the required preventer to required standards, having the assembly tested by the City's contracted BAT with the cost added to the customer's water account, and passing inspection by the City's CCS and its building code inspector
 - c. having the City's contractors perform all of these services with the cost added to the customer's water account
4. For ***all services with backflow preventers installed*** the City will contract with a certified BAT to perform annual testing, and the cost will be added to the customers' water bills monthly at the amount specified in the City of Roy Fee Schedule.

Type of backflow assembly required

The City uses the method of premises isolation for backflow prevention, due to the potential for plumbing to be changed without the City's knowledge and the variations in pressure within the water system. Within this method, cross connections are controlled commensurate with the degree of hazard assessed by the CCS.

Installations of approved backflow preventers ONLY shall be performed to the standards published in the *Cross-Connection Control Manual, Accepted Procedure and Practice* by the Pacific Northwest Section, American Water Works Association, unless DOH or manufacturer requirements are more stringent. Under WAC 246-290, backflow prevention assemblies that appear on the USC-Approved Assemblies List are acceptable for protection of the public water system.

Backflow preventer requirements

1. The City 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 City. All high-hazard

connections of the type described in Table 9 of WAC 246-290-490 shall be isolated with an RPBA.

2. The City 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. The required premises isolation DCVA or RPBA shall be:
 - Installed at the customer's expense immediately downstream of the water meter in accordance with the City's standards described hereinafter; and
 - Maintained, tested, and inspected in accordance with the City's standards described hereinafter.

For new connections, the City will not turn on water (except for testing purposes) at the meter until the customer complies with the above requirements.
4. All backflow preventers relied upon by the City to protect the public water system shall meet the definition of "approved backflow preventer" as contained in WAC 246-290-010. The City will obtain and maintain a current list of assemblies approved for installation in Washington State from the DOH Office of Drinking Water.
5. 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.

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 City 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 City's distribution system. The City will inform the customer that any action taken by the City shall not be construed by the customer as guidance on the safety or reliability of the customer's plumbing system. The City will not provide advice to the customer on the design and installation of plumbing other than by the normal building/plumbing permit/inspection process. Except for easements containing the City's distribution system, the City will not undertake work on the customer's premises.

Backflow Incident Response Plan

A. General

This Backflow Incident Response Plan supplemental to the City's Emergency Plan.

The City 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), the City 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 the City to notify DOH and Tacoma-Pierce County Health Department 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). A list of emergency contact telephone numbers is in the Water System Plan's O & M chapter.

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

More detailed guidance on how to respond to a backflow incident is in the manual, *Backflow Incident Investigation Procedures*, published by the Pacific Northwest Section, American Water Works Association (PNWS-AWWA

B. Short List of Tasks

The following short list of tasks is initial guidance for dealing with backflow incidents. The City 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.

Records

The City will keep all original records. Contractors may retain copies. Property-specific records will be kept in a CCC jacket file attached to the tap file. Records will be maintained per the retention schedules of the SOS Archives department.

Records of backflow preventers installed will include:

- description of exact location where installed
- description of hazard(s) isolated
- type, size, make, model, serial number, other pertinent details, and installation date

Records of inspections will include:

- name and certification number of the BAT performing each test or inspection
- test results (pass/fail and actual readings) or inspection results
- repair/re-plumbing history

Correspondence records will include:

- current service agreement, if applicable (permanent)
- notification to customer to install a backflow preventer(s) to protect the public water system from contamination (permanent)
- completed questionnaires
- current notifications of required inspections or other necessary actions
- educational information sent to multiple customers

Reports records will include:

- incident reports on DOH-acceptable form with accompanying supporting information (photos, lab analyses, etc.)
- annual summary reports
- complaints that could be related to backflow and their resolution, compiled with a view to inclusion in the next WSP update

Inventory records will include:

- Excel workbook with worksheets for each factor(s) tracked (assemblies/test reports/BAT's/etc.)
- Excel worksheets will be maintained to allow cross reference to property-specific records kept in CCC jacket files, and to allow sorting alphabetically, chronologically and geographically.

ORDINANCE NO. 687

CITY OF ROY, WASHINGTON

AN ORDINANCE adopting by reference the City of Roy Cross-Connection Control Program regulating the use of cross connections to the City's public water system.

WHEREAS, the City of Roy's Public Works Department has established a proposed Cross Connection Control Program designed to identify and regulate actual and potential cross connections to the City of Roy water system, which may permit contaminants or pollutants to enter the City's drinking water supply by means of backflow;

WHEREAS, in order to protect the public health, safety and property of the citizens of the City, it is now necessary to adopt the proposed Cross Connection Control Program; now, therefore,

THE CITY COUNCIL OF THE CITY OF ROY, WASHINGTON

DO ORDAIN AS FOLLOWS:


Section 1. The City hereby adopts by reference the City of Roy Cross-Connection Control Program.

Section 2. Effective Date. This ordinance shall become effective five (5) days from and after its passage, approval and publication as provided by law.

Passed by the City Council and approved by the Mayor of the City of Roy, Washington, at a regular meeting thereof this 11 day of October, 2004.


MAYOR RAY BOURNE

ATTEST:


BETTY J. GARRISON, CMC
City Clerk/Treasurer

Approved as to Form:


HARRY R. BOESCHE, JR., WSBA #29893
City Attorney

1st Reading 9-13-04
2nd Reading 9-27-04
3rd Reading 10-11-04

CROSS CONNECTION CONTROL PROGRAM

City of Roy
107 Warren Street
PO Box 700
Roy, Washington 98580
Phone: 253.843.1113

SECTIONS

1. Definitions:
2. Purpose and references
3. General Rules
4. Surveillance Program
5. Records & Reports

ACRONYMS:

AG - Air Gap
AVB - Air Vacuum Breaker
BAT - Backflow Prevention Assembly Tester (Certified)
CCS - Cross Connection Specialist
DCVA - Double Check-valve Assembly
UPC - Uniform Plumbing Code
PVB - Pressure Vacuum Breaker
RCW - Revised Code of Washington
RPBA - Reduced Pressure Backflow Assembly
WAC - Washington Administrative Code

Definitions

- 1.1 **Accessible** In reference to the installation of backflow preventers, accessible shall mean that such backflow preventers shall be placed so that they can be reached for testing and /or maintenance safely. On approval of the CCS, panels, doors, etc. may be allowed.
- 1.2 **Air Gap (AG)** The vertical separation between the free flowing discharge end of the potable water supply line and the overflow rim of a non-pressurized receiving vessel.
The separation must be at least twice the inside diameter of the supply line, but never less than one inch when unaffected by vertical surfaces (sidewalls) and;
three times the diameter of the supply piping, if the horizontal distance between the supply pipe and a vertical surface is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and the intersecting vertical surface is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

- 1.3 **Approved/Approval** Approved in writing by the agency having jurisdiction.
- 1.4 **Atmosphere Vacuum Breaker (AVB)** A device that only prevents back-siphonage by creating an atmospheric vent when there is negative water pressure in the distribution system. It is designed to protect against backsiphonage only.
- 1.5 **Auxiliary Water Supply** Any water supply on or available to a premise in addition to the purveyor's approved public potable water supply.
- 1.6 **Backflow** The flow of water or other liquids, gases or solids from any source back into the customer's plumbing system or the water purveyor's water distribution system.
- 1.7 **Backflow Assembly Tester, Certified (BAT)** A person who is certified by the health authority to test backflow prevention assemblies.
- 1.8 **Backflow Prevention Assembly** The nomenclature "assembly" refers to a backflow preventer which are designed to be in line tested and repaired, and to meet the head loss and flow requirements of the recognized approval authority. The "assembly" consists of the backflow prevention unit, two resilient seated shut off valves and test cocks(s).
- 1.9 **Backflow Prevention Assembly – Approved** An assembly that has been listed by the Washington State Department of Health, Drinking Water Program, and so shown on their current listing of approved assemblies.
- 1.10 **Backflow Prevention Device** The nomenclature "device" refers to a backflow preventer that is not designed for in-line testing.
- 1.11 **Backpressure** Water pressure which exceeds the operating pressure of the public potable water supply. Any increase in pressure above the supply pressure, at a given point in the water distribution system (caused by pump, elevation of piping, heat expansion and/or air pressure) which would cause backflow.
- 1.12 **Backsiphonage** means flow of water, mixtures, substances, or gases into the potable water distribution system from a partial vacuum within the system itself. A negative or reduced pressure within the public potable water supply.
- 1.13 **Board** The duly elected City Council, of the City of Roy, employees of the City Council and/or duly appointed or assigned representatives of the City Council.
- 1.14 **Bore Sight to Daylight** Providing adequate drainage for backflow prevention assemblies installed in vaults through the use of unobstructed drain pipe.

- 1.15 **Code Authority & Enforcement** The enforcement of this cross-connection control program in the area served by the purveyor, will be in accordance with WAC 246-290-490.
- 1.16 **Consumer** means any person receiving water from a public water system from either the meter, or the point where the service line connects with the distribution system if no meter is present. For purpose of cross-connection control, "consumer" means owner or operator of a water system which is connected to a public water system through a service connection.
- 1.17 **"Consumer's water system"** as used in WAC 246-290-490, means any potable and/or industrial water system that begins at the point of delivery from the public water system and is located on the consumers premises. The consumer's water system includes all auxiliary sources of supply, storage, treatment, and distribution facilities, piping, plumbing, and fixtures under the control of the consumer.
- 1.18 **Contaminant** A substance that will impair the quality of water to a degree that it will create a health hazard to the public leading to poisoning, the spread of disease or is a violation of the water quality standards.
- 1.19 **Cross-Connection** A physical arrangement connecting a public water system, directly or indirectly, or has the potential of being connected to any source that is not a part of the public water supply.
- 1.20 **"Cross-connection control program"** means the administrative and technical procedures the purveyor implements to protect the public water system from contamination via cross-connection as required in WAC 246-290-490.
- 1.21 **Cross-Connection Control Specialist (Certified)** A person who is certified by the administrative authority having jurisdiction to administer a cross connection control program and to conduct cross connection surveys.
- 1.22 **Degree of Hazard** The low or high hazard classification that shall be attached to all actual or potential cross connections.
- 1.23 **Distribution System** The net work of pipes and other facilities which are used to distribute water from the source, treatment, transmission, or storage facilities to the water user.

- 1.24 Double Check Detector Assembly (DCDA)** An approved assembly consisting of two approved double check valve assemblies with suitable connections for testing, set in parallel, equipped with a meter on the bypass line to detect small amounts of water leakage or use. This unit must be purchased as a complete assembly. The assembly may be allowed on fire line water services in place of an approved double check valve assembly upon approval by the CCS or local water authority.
- 1.25 Double Check Valve Assembly (DCVA)** An approved assembly consisting of two independently operating check valves, loaded to the closed position by springs or weights, and installed as a unit with, and between, two resilient seated shut-off valves and having suitable connections for testing. This unit may only be used to protect against non-health hazards and must be purchased as a complete assembly.
- 1.26 Dual Distribution System** A facility, or property which has two water systems, one potable and the other non-potable.
- 1.27 Flood Level** The highest level to which water, or other liquid, will rise within a tank or fixture (i.e. the overflow rim of the receiving vessel).
- 1.28 Health Authority** The appropriate state department of public health or in some cases, a local agency having jurisdiction.
- 1.29 Health Hazard** An actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.
- 1.30 High Cross-Connection Hazard** A condition, device, or practice which could impair the quality of potable water and create an actual public health hazard through the introduction of waterborne disease organisms, or harmful chemical, physical, or radioactive substances into the public water system, and which presents an unreasonable risk to health.
- 1.31 Industrial Piping System** A customer's "industrial piping" system refers to that piping system that transmits, confines, or stores any fluids that are not approved potable water. Such a system would include all pipes, tanks, fixtures, equipment and other extensions of the non-potable water system.
- 1.32 "In-premises protection"** means a method of protecting the health of consumers served by the consumer's potable water system, located within the property lines of the consumer's premises by the installation of an approved air gap or backflow prevention assembly at the point of hazard, which is generally a plumbing fixture.

- 1.33 **“Local administrative authority”** means the City Council, of the City of Roy, Board or Mayor authorized to administer and enforce the provisions of the Uniform Plumbing Code as adopted under chapter 19.27 RCW. The local administrative authority may appoint a certified cross-connection control program administrator to administer and enforce the provisions of the UPC as they apply to Cross-Connection Control.
- 1.34 **“Low health cross-connection hazard”** means a cross-connection that could cause an impairment of the quality of the potable water to a degree that does not create a hazard to the public health, but does adversely and unreasonably affect the aesthetic qualities of such potable water for domestic use.
- 1.35 **Maximum Contaminant Level** The maximum amount of a contaminant allowed in a sample of water according to federal and state regulations. The importance of this to cross connection control is that the presence of a higher level than at the source may signify the occurrence of a cross connection incident.
- 1.36 **Non-Potable Water** Any water, other liquid, gas or substance which is not safe for human consumption, or is not part of the public potable water supply as described by the health authority.
- 1.37 **Non-Potable Piping System** A piping system which is made of non-potable material. Such material, such as black iron and certain plastics are to be considered non-potable if they can affect either the aesthetics or degradation of the healthfulness of the water.
- 1.38 **Potable Water** Water which is safe for human consumption, free from harmful or objectionable materials, as describe by the health authority.
- 1.39 **Public Water System** is water furnished by the Water Department, City of Roy, to the general public , the residences of the City of Roy and the immediate surrounding area which is intended or used for human consumption. It includes the source, treatment, storage, transmission and distribution facilities.
- 1.40 **Purveyor** means The City of Roy. Purveyor also means the authorized agents of The City of Roy.

- 1.41 **Reduced Pressure Backflow Assembly (RPBA)** means a Washington State approved backflow prevention assembly containing a minimum of two (2) independently acting, approved check valves including tightly closing resilient seated ball shutoff valves located at each check valve, together with an automatically operated pressure differential relief valve located between the two approved check valves. During normal flow, the pressure between these two valves shall be less than the upstream (supply) pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the two check valves at less than the supply pressure.
- 1.42 **Safe Drinking Water Act** The Safe Drinking Water Act was legislation that was enacted by the United State Congress in 1974 to ensure that the public is provided with safe drinking water, thereby protecting the public welfare.
- 1.43 **Service Connection** means the piping connection by means of which water is conveyed from the water purveyor's distribution main to a customer's premise. For the City of Roy, the portion of the service connection which conveys water from the distribution main to the customers service meter and including the meter, is under the jurisdiction of the water purveyor.
- 1.44 **Thermal Expansion** Thermal expansion is the pressure increase due to a rise in water temperature. The problem becomes acute in a heated water piping system when such system becomes "closed" due to a backflow preventer which disallows expansion beyond that point.
- 1.45 **Unreasonable Risk to Health** A risk to health which is not necessary or acceptable to the water purveyor and/or the customer; a term which is used to distinguish what type of backflow prevention should be required.
- 1.46 **Used Water** Any potable water which is no longer in the purveyor's water distribution system. In most cases, the potable water has moved past (downstream of) the water meter and/or the property line.
- 1.47 **Water System** All parts of a system that supplies water to customers including wells, pumps, components and equipment, storage facilities, piping and all appurtenances, structures, treatment facilities, necessary vehicles and equipment and anything required to meet current regulations and standards of operation.

Purpose & References

This program is adopted by the Council of the City of Roy and provides requirements to prevent actual or potential cross-connections, and defines the degree of protection necessary when such cross-connections cannot be eliminated. The following references are the basis for this program.

- 2.1 **Washington Administrative Code 246-290-490** establishes requirements for a cross-connection control program for Group A water systems and allows for the disconnection of service.
- 2.2 **Revised Code of Washington, Chapter 70.54** establishes failure to furnish pure water as a criminal misdemeanor.
- 2.3 **Uniform Plumbing Code** describes water distribution systems and cross-connection control provisions.
- 2.4 **Cross-Connection Control Manual**, a guide to purveyor's in establishing and operating a cross connection control program published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC Manual).
- 2.5 **Cross-Connection Control Manual, Accepted Procedure and Practice**, published by the Pacific Northwest Section of the American Water Works Association (PNWS-AWWA Manual).

General Rules

It is the intention of this policy to provide for the permanent abatement or control of all cross-connections to the public water system. A complete cross connection control program identifies actual and potential cross connections between the potable water supply lines and any pipe or vessel that may contain a contaminant or pollutant which could enter the drinking water system by means of backflow

No cross connection or potential cross connection shall be created, used or maintained within the City of Roy water system. WAC 246-290, Group A Public Water Systems, shall be the basis for this program, and specific requirements of that document will be followed.

When it is deemed necessary by the administrator of the cross-connection control program, there shall be installed at the service connection a suitable backflow prevention assembly commensurate with the degree of hazard to the public water supply.

- 3.1 The City of Roy water system, under the direction of the elected Board, is the water purveyor and has the right to protect public health. Water service shall be terminated immediately, if the Board determines at anytime a threat exists to the public health.
 - (A) As a condition of water service, and after reasonable notice, owners shall allow all properties to be inspected for potential cross-connections and shall follow the requirements of this program if a cross-connection or potential cross-connection is found.
 - (B) Approved backflow assemblies, if required, shall be installed, at the expense of the owner, at the service connection (premises isolation) or, in limited cases, within the premises as approved by the Board.
 - (C) A Reduced Pressure Backflow Assembly (RPBA) shall be installed at the service connection to the premises, at the expense of the owner, in an approved installation, if the owner wishes to preclude inspections.
- 3.2 The most common source of cross connections in residential settings are on-site wells, water troughs, swimming pools, ponds, fountains, and lawn irrigation systems.
 - (A) Leaving a hose pressurized or using a hose bib to provide water to trailers/campers or to fill any kind of tank, also allows for potential contamination. These types of activities must be isolated from the public water system, either by air-gap. or approved backflow assemblies.
 - (B) All irrigation and lawn sprinkler systems shall have, as a minimum, an Atmospheric Vacuum Breaker (AVB) protection. Increased protection may be required for unusual or complex systems.

- (C) If an owner desires to keep an on-site well operational as an auxiliary water supply, an approved Reduced Pressure Backflow Assembly (RPBA) shall be installed. Capping the well or pulling the pump is not proper abandonment and shall require premises isolation. An owner shall properly abandon a well using a licensed well-driller and complying with (WAC) 173-160 and 248-54.
- 3.3 The Board shall ensure that plans for all new construction are reviewed, cross connection hazard inspections are performed prior to water system connection, and will inform the owner of required or recommended corrections for the prevention of cross connections. The home owner or business owner shall pay inspection costs, which are included in the connection fee.
- 3.4 The Board shall develop an information flyer, which will provide information on cross connections. This will be given to new customers and will be included in the annual Consumer Confidence Report mailing.
- 3.5 The Board shall utilize a Cross Connection Control Specialist (CCS) to implement this program and provide technical assistance as necessary. The CCS will coordinate with local officials, as necessary to ensure water system policy and rules compliment the Uniform Plumbing Code, and other local requirements.
- 3.6 The purveyor shall ensure that inspections and/or test of approved air gaps and approved backflow assemblies are conducted:
- (1) At the time of installation;
 - (2) Annually after installation, or more frequently, if required by the purveyor for connections serving premises or systems that pose a high health cross-connection hazard or for assemblies that repeatedly fail;
 - (3) After a backflow incident; and
 - (4) After an assembly is repaired, reinstalled, or relocated or an air gap is re-plumbed.
- 3.7 Should a backflow incident occur, the Board shall take immediate action to prevent further hazard to the public health, and will notify the community, the Department of Health, immediately.
- 3.8 The Board shall re-evaluate potential cross-connection hazards and conduct a system assessment from time to time, but not less than every two years, based upon new connections or change of use of water.

Surveillance Program

The control of cross-connections requires cooperation between the customer, water purveyor, the health officer, and the plumbing inspector. The water purveyor has primary responsibility to prevent contamination of the public water supply (WAC 246-290-490). The local Administrative Authority, the Public Health Officer, and the customer served are jointly responsible for contamination of the water system within the customers premises. The property owner must realize that he/she may be held responsible for acts of negligence.

A surveillance program for cross-connection and sanitary hazards requires the inspection and evaluation of all new and existing buildings, structures, and grounds. As proposed, the premises isolation procedure requires a certified cross-connection control specialist (CCS) who shall be designated as the Cross-Connection Control Program Administrator.

The systematic program of inspection and evaluation shall be established with priority given on the basis of risk to public health and shall be conducted as outlined below:

- 4.1 Upon application for a building permit, the authorized CCS shall evaluate the proposed premises and determine the appropriate backflow assembly installation required for premises isolation.
- 4.2 During the construction phase of any new building, structure, or ground installation, the authorized CCS for the City of Roy shall perform the required premises isolation cross-connection control inspection. Upon completion of the inspection, but prior to the establishment of a water service connection, the CCS shall advise the customer of the results of the inspection. The CCS will notify the customer at that time that a Washington State certified backflow assembly tester (BAT) shall test any backflow assemblies required prior to use of the new water service, and on a continuing annual basis.

Existing Buildings, Structures, and Grounds

- 4.3 An initial premises inspection and /or evaluation shall be conducted on all existing structures (prioritized by degree of health hazard) by an authorized CCS. Upon completion of the initial premises inspection/evaluation, the CCS shall notify the customer orally of his/her findings.
- 4.4 The CCS shall issue a compliance letter to the property owner. The compliance letter shall include the recommendations and requirements for corrective actions and a corrective action completion date (normally 90 calendar days) depending on the degree of hazard.

- 4.5 On the corrective action completion date of the warning letter, the CCS shall insure the corrective actions have been completed. If the corrective actions have not been completed, the CCS shall issue a termination letter notifying the property owner that water service to the premises shall be discontinued within 15 calendar days (depending on the degree of hazard) if the corrective actions have not been completed.
- 4.6 The compliance and corrective action letter and the compliance termination letter shall be issued as certified mail with return receipt requested. A copy of all communications between the customer and the purveyor shall be filed in the permanent cross-connection control file for the premises in the administrator's office.
- 4.7 When all required actions have been completed, the file copy of the completed actions shall be placed in the CCS control file for the premise/facility, together with any completed backflow assembly test report forms. Records will be kept on file for a minimum of ten years, and as long as the backflow assembly remains in service.
- 4.8 Evaluation and/or re-inspection of each premise found to be subject to this procedure shall be accomplished at least annually, or more often if the degree of hazard so indicates.

Records & Reports

Cross-Connection Control Inspection File:

- 5.1 A separate jacket file shall be established by the water division Cross-Connection Control Program Administrator, for each individual customer that requires the installation of a backflow prevention assembly. Jacket files shall be filed in alphabetical sequence by customers name (last name first) and files shall be separated by geographic location.
- 5.2 The following information shall be maintained in each individual jacket file:
 - (a) Copies of all correspondence with customer relative to cross-connection control.
 - (b) Copy of inspection reports completed with field drawings.
 - (c) Copy of application and completed installation order.
 - (d) Copies of backflow assembly test reports for all backflow assemblies.
- 5.3 All backflow assemblies shall be kept on index file showing owner, address, phone number, location, serial number, date of activation, date of last inspection, and shall be filed by month of installation.
- 5.4 Upon demand, an annual Cross-Connection Control summary shall be made available to the Washington State Department of Health. This report will describe the status of the purveyor's Cross-Connection Control Program.