

CITY OF DUVALL

Cross-Connection Control Program

Program Administration, Requirements, and Implementation



March 2021

INTRODUCTION

PURPOSE AND SCOPE

This Cross Connection Control Procedures Program, used in conjunction with *Duvall Municipal Code (DMC) 9.02.040* and state regulations *WAC 246-290-490*, outlines the framework for implementing cross connection control requirements for the City of Duvall. All public water systems in Washington State are required to implement a cross-connection control program. To be acceptable to the Washington State Department of Health (DOH) the cross connection control program must include 10 minimum program elements listed in *WAC 246-290-490(3)*.

The ten minimum required elements in a CCC program are as follows:

ELEMENT 1: Adopt a local ordinance, resolution or code that establishes the purveyor's legal authority, describes operating policies and the corrective actions of a CCC program.

ELEMENT 2: Develop and implement procedures and schedules for evaluating new and existing service connections to assess hazards.

ELEMENT 3: Develop and implement procedures and schedules that eliminate or control cross-connections and ensure approved backflow preventers are properly installed.

ELEMENT 4: Ensure that personnel, including one certified Cross-Connection Control Specialist (CCS), are provided to develop and implement the CCC program.

ELEMENT 5: Develop and implement procedures to ensure approved backflow preventers are properly inspected and tested.

ELEMENT 6: Develop and implement a backflow prevention assembly testing quality control assurance program.

ELEMENT 7: Develop and implement procedures for backflow incident response.

ELEMENT 8: Include cross-connection control program information in customer education materials.

ELEMENT 9: Develop and maintain CCC program records.

ELEMENT 10: Meet any additional CCC requirements if reclaimed water is distributed or received in the water service area.

This cross-connection control (CCC) program is a proactive and ongoing effort of the City to protect the health of its customers by preventing contamination to the municipal water supply that it supplies by preventing backflow of contaminants through cross-connection. This program provides direction to staff on implementation activities, describes policies and procedures, and summarizes current City, State, and Federal requirements regarding cross connection control. The program is structured so that it may be supplemented with updated documents and materials developed by Public Works for its specific use. The authority to enforce these practices and policies is established in *DMC 9.02.040* and *Ordinance 1071 (April 24, 2008)*.

Cross connection control is an integral part of the multiple-barrier approach to ensure safe drinking water. This concept includes providing protection to the City's water supply through source protection programs like wellhead protection areas, providing treatment (disinfection),

covered storage tanks, using good engineering design and practices, implementation of a cross connection control program compliance, and surveillance water quality monitoring programs, having certified operators, and emergency planning.

Implementation of this program results in protecting the City's water system from contamination from the customers plumbing supply / system through proper installation of the right backflow prevention assembly and annual testing of these assemblies by a DOH certified Backflow Assembly Tester (BAT).

DEFINITIONS

Air Gap (AG): means a physical separation between the free flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. This separation must be at least:

- Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be 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 (sidewall) is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) 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.

Approved: depending upon the context, City of Duvall-approved or Washington State Department of Health-approved.

Approved backflow prevention assembly: means a reduced pressure backflow assembly (RPBA), a reduced pressure detector assembly (RPDA), a double check valve assembly (DCVA), a double check detector assembly (DCDA), a pressure vacuum breaker assembly (PVBA), or a spill resistant vacuum breaker (SVBA) of make, model, and size that is approved by DOH. Assemblies that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research or other entity acceptable to the DOH are considered approved by the DOH.

Atmospheric Vacuum Breaker (AVB): means an AVB or make, model, and size that is approved by the DOH. AVBs that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research or that are listed or approved by other nationally recognized testing agencies (such as IAPMO, ANSI, or UL) acceptable to the authority having jurisdiction are considered approved by the DOH.

Authority having jurisdiction: (formerly known as local administrative authority) means the local official, board, department, or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code as adopted under chapter 19.27 RCW.

Backflow: means the undesirable reversal of flow of water or other substances through a cross connection into the public water system or consumer's potable water system.

Backflow Prevention Assembly: an assembly to prevent backflow; an assembly that, when

installed, controls cross connections.

BAT: a Washington State certified Backflow Assembly Tester holding a valid, State of Washington-issued, certificate in accordance with chapter WAC 246-290.

Category of contaminant: means a communicable disease, chemical, or physical hazard. Communicable diseases and chemical hazards can cause illness and in some cases death and are high health hazards. Physical hazards such as gasoline, propane, hot water and steam are examples of both low and high health hazards.

CCC: Cross Connection Control; a program to control or eliminate cross connections; the act of controlling or eliminating cross connections.

CCS: Cross Connection Control Specialist; one who is certified by the State of Washington to execute the City's Cross Connection Control Program.

City: The City of Duvall, City personnel or designee, having the authority to perform the associated duties described herein.

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

DCDA: Double Check Detector Assembly; a type of backflow prevention assembly used to protect against low-health hazard. Generally installed on fire systems that require metering.

DCVA: Double Check Valve Assembly; a type of backflow prevention assembly used to protect against low-health hazard.

Degree of hazard: means either a low cross connection hazard or a high health cross connection hazard.

DMC: Duvall Municipal Code; the body of law for the City of Duvall.

DOH: the Washington State Department of Health, Division of Drinking Water, the authoritative body for public drinking water systems.

High health cross connection hazard (HHH): means a cross connection involving any substance that could impair the quality of potable water and create an actual public health hazard through injury, poisoning, or spread of disease. WAC 246-290-490 refers to these types of hazards as Table 9 hazards.

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.

Low cross connection hazard: means a cross connection that could impair the quality of 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 potable waters for domestic use.

Potable: water suitable for drinking by the public.

Premises isolation: means a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer's water system from the purveyor's distribution system.

Purveyor: means an agency, subdivisions of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or other entity owning or operating a public water system. Purveyor also means the authorized agents or these entities.

RCW: The Revised Code of Washington; the compilation of all permanent laws now in force.

RPBA: Reduced Pressure Backflow Assembly; a type of backflow prevention assembly used to protect against high-health hazard.

RPDA: Reduced Pressure Detector Assembly; a type of backflow prevention assembly used to protect against high-health hazard. Generally installed on fire systems that require metering.

Table 9 hazards:

Test Report: a report completed by a BAT that denotes the current condition of a backflow prevention assembly.

WAC: the Washington Administrative Code; rules and regulations adopted by State agencies.

CITY, STATE, AND FEDERAL PROGRAM HISTORY

The requirement for the City to have a Cross Connection control Program (Program) is not something new. State regulations administered by DOH, dating back to 1970, require the City's water system be protected from backflow and cross connection contamination. Though the federal Safe Drinking Water Act (SDWA) passed by Congress in 1974 does not specifically address the topic of cross connection control, it does state water purveyors are responsible for the water quality delivered to the customer's meter. The Environmental Protection Agency, which administers the SDWA, developed a series of nine "white papers" (2001) on distribution system issues of potentially significant public health concern. One of the papers is titled *Potential Contamination Due to Cross Connections and Backflow and the Associated Health Risks*. Water industry experts expect future federal rule making will require water purveyors to develop and implement a cross connection control program. The City is well positioned to meet any future federal requirements pertaining to having a Program given the years DOH has had state regulations requiring one.

The City's Program was developed in the mid-1990s. The City has made great progress over the last few years in our efforts to develop and implement an effective Program. These efforts include updating DMC, creating and implementing a backflow device tracking system, having dedicated administrative support, and protecting against the most severe and high health risk premises.

AUTHORITY

Legal Authority to Establish a Program (ELEMENT 1)

The control or elimination of cross connections is done according to the most current revisions of state and local rules and regulations. State regulations include:

- Chapters 51-56 and 51-57 WAC, Uniform Plumbing Code and Uniform Plumbing Code RCW 18.106,
- Washington State Plumbers Code,
- RCW 19.27, Washington State Building Code,

- RCW 43.20.050, Washington State Powers and Duties of the State Board of Health,
- RCW 70.119A.060, Washington State Public Water Systems Mandate, and
- WAC 246-290-490, Cross Connection Control (Appendix A).

The City has an adopted cross-connection control ordinance in *Section 9.02.040(c), Water Systems, Cross Connections and Back Flow Prevention* of the DMC (Ordinance 1071, adopted in 2008) (Appendix B). This code establishes the City's authority in implementing a cross-connection program, prohibits cross-connections, gives the City authority to discontinue water service until correction is made, and details penalties for non-compliance. Where cross connections cannot be eliminated, they are controlled by installation of an approved backflow assembly preventer(s) which are appropriate to the degree of hazard it is protecting against.

ROLES AND RESPONSIBILITY

The City has the responsibility for cross connection control and it shall begin at the water supply source, include all the public water treatment, storage, and distribution facilities, and end at the point of delivery to the consumer's water system, which begins at the downstream end of the service connection or water meter (e.g. premises isolation). The City is responsible for protecting its public water supply from contamination from backflow of pollutants through water service connections. If the City determines that a backflow prevention device is necessary at a customer's premise, the City will notify the customer to install an approved backflow device on the premise. Installation of said backflow device(s) shall be a condition of continued water service from the City.

The water customer is responsible for providing the necessary information, scheduling, and providing access for inspection of cross connection potential and the necessary control methods. The water customer is responsible for notifying the City's Cross Connection Control Specialist (CCS) of any assembly the customer believes is no longer required. Finally, the water customer is responsible for all costs associated with the inspection, testing, repair, and replacement of backflow prevention assemblies. Upon installation, the customer shall provide the City with a "Backflow Prevention Assembly Inspection Report" completed by a certified Backflow Assembly Tester (BAT) showing satisfactory inspection and testing of said device(s). The customer will be responsible for all applicable testing and inspection fees.

The City's Program consists of premises isolation to protect the City's water system from contamination. The functions of the Program are primarily carried out by the City's CCS and include survey, inspection, notification, enforcement, and record keeping. The minimum City certification requirements for the position include DOH certifications as a CCS.

The inspection, repair, and annual testing of backflow prevention assemblies for all City facilities is contracted out with a certified BAT.

FAILURE TO COMPLY

Any person, firm, or corporation who violates any of the provisions of this document or *DMC Section 9.02.040(c)*, may be punished in accordance with the rules stated in the DMC. Any person, firm or corporation who violates any provisions and requirements of this document shall

be subject to discontinuance of supply of City water to the premise. Discontinuance of the City potable supply to the premise shall remain in effect until corrective action, as required by the City, is completed, tested and approved.

CROSS-CONNECTION CONTROL PROGRAM

PROGRAM IMPLEMENTATION

Procedures and Schedule for Hazard Evaluations, Eliminating or Controlling Cross Connections (ELEMENTS 2 AND 3)

Several guidance, policies, and procedures exist for determining the appropriate level of protection. The evaluation for the appropriate level of protection shall be in accordance with the most current editions of the following:

- *Cross Connection Control Manual, Accepted Procedure and Practice* published by the Cross Connection Control Committee of the Pacific Northwest Section of the American Water Works Association,
- *Manual of Cross Connection Control* published by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California,
- *Recommended Practice for Backflow Prevention and Cross Connection Control, AWWA M14*, published by the American Water Works Association,
- *Development Design Standards Manual, Chapter 2 (Water)*, City of Duvall, and
- *Group A Design Standards*, Washington State Department of Health.

The City also enacted various policies to ensure the safety and quality of drinking water for all its customers. Many of these policies are referenced in the approved 2012 Water Comprehensive Plan.

The City prioritizes its backflow prevention efforts based on acceptable risk (probability of occurrence), category of contaminant, degree of hazard, and the reliability of the backflow preventer. The City developed an action plan in 2008, identifying unprotected Table 9 hazards and inspected these water customers of backflow prevention requirements.

For customers requesting new service connections, an initial evaluation of the premises' planned or future water service is done by the City's CCS during the plan review process. Proper selection and installation of a backflow prevention assembly, as determined by the City's CCS, shall be a condition of allowing new water service connection. Installation and testing by a certified BAT is required. If the initial test fails, it is the responsibility of the applicant/contractor/customer to immediately have the assembly repaired and retested by a certified BAT. All assemblies must be tested at least annually thereafter by a certified BAT.

Approved backflow prevention assemblies are those which appear on DOH's Approved Assemblies List, developed by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research. This institute is currently the only one which the

DOH recognizes as having the authority to approve backflow prevention assemblies. The backflow prevention assemblies include:

1. Atmospheric Vacuum Breakers (AVB),
2. Reduced Pressure Principle Backflow Assembly (RPBA),
3. Double Check Valve Assembly (DCVA),
4. Pressure Vacuum Breaker Assembly (PVBA), and
5. Spill-Resistant Vacuum Breakers (SVBA).

All backflow assemblies shall operate as designed and approved by the approval agency having jurisdiction. Assemblies not meeting design standards shall be considered unapproved and will require repair or replacement.

The City's CCS becomes aware of possible cross connections associated with existing service connections through the course of doing City business. Periodic reevaluations are done by the City's CCS in response to remodels, notification by city inspectors, fire department personnel, or water quality complaints. An emphasis is placed on severe and high health premises (Table 9) followed by low hazard premises. The City notifies the customer of the outcome of the hazard assessment by letter and in some cases by email. Timelines for corrections are based on the degree of hazard and are generally completed within 30 days. Larger and more complex premises can require additional time (six months or longer) due to securing adequate funding to complete the installation(s). The assemblies must also be on DOH's Approved Assemblies List and be installed in the correct orientation, and by a certified BAT.

Unless otherwise approved by the City's CCS, installation of the appropriate type of backflow prevention assembly or air gap system for premises isolation is required at the meter (e.g. premises isolation). Any deviation from this must be pre-approved by the City's CCS. Below is a summary of requirements based on the evaluation of acceptable risk, degree of hazard, and the reliability of the backflow preventer:

Commercial/Industrial Service: The degree of hazard for these types of services is a high health cross connection hazard. An approved premise isolation cross connection control assembly of a RPBA, RPDA or approved AG.

Multi-Family Service: The degree of hazard for this type of service is a high health cross connection hazard. A residential development having one or more metered connections serving more than two living units per meter will be treated as a commercial service.

Fire Service: The degree of hazard for this type of service may be high or low, depending on the type of system installed. For example, backflow protection is not required for residential flow through or combination fire protection systems. However, dry fire suppression systems require a DCDA while a fire suppression system using chemicals requires an RPDA.

Single-Family Residential Service: The degree of hazard for this type of service is generally low. However, premises isolation with a RPBA is required if high health hazards exists.

Irrigation Only Service: The degree of hazard for this type of service is generally low. An approved DCVA is required as long as no chemicals are involved, otherwise an RPBA is required.

Designate at Least One Person Certified as a CCS (Element 4)

WAC 246-290-490 requires that personnel, including one certified Cross-Connection Control Specialist (CCS), are provided by the purveyor to develop and implement a CCC program. The certified operator in “responsible charge” as the CCS for the City’s Program currently resides in the Public Works Department and includes the Public Works Director, Public Works Superintendent, and City Engineer. These individuals have the authority and responsibility to develop and implement the Program. There are 3 additional City personnel who also hold CCS certifications.

Procedures and Schedules for Backflow Preventer Inspection, Testing and Repairs (Element 5)

There are over 228 backflow assemblies installed in the City’s service area which require annual testing. The yearly due date for testing is September 1. Notification of annual testing is sent out approximately June 1st and reminders to those not received again August 1.

The Program developed a tracking system utilizing Excel in 2010 to maintain an inventory of all these assemblies and test history data. This data also generates custom reports (e.g., DOH Annual Summary Report), annual testing notification letters, and repair letters to customers. The testing frequency of backflow assemblies and approved air gaps, used in place of assemblies, are done:

- At Initial installation,
- After the assembly is repaired or moved,
- Immediately after a backflow incident occurs,
- Annually after the initial installation, and
- As required by the CCS, if testing indicates repeated failures.

The test procedures used are those specified in the most recent edition of the Manual of Cross Connection Control, published by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research, currently the 10th edition, and approved by DOH. There are no alternate test procedures allowed.

The testing notification to customers are done by mailing notification letters annually by June 1. Customers are sent up to three notification letters (first notice – 30 days; second notice – 30 days, final notice – 14 days) informing them annual testing is due. Prior to shut off of water, courtesy phone calls are made and where necessary, a site visit is made. This same notification process is used for dealing with installations and repairs.

The majority of completed test reports are emailed within 10 days from the date the test was performed. If the premises involves a separate irrigation line, the meter shall be locked, or the hazard eliminated by removing piping so a connection is not possible. The City’s notification letters provide the website address to Washington Certification Services, where customers can obtain a public listing of certified BATs to have their testing completed by.

No appeals process is necessary prior to turning off water service because customers are given adequate notification of testing requirements and staff is flexible in working out schedules with them.

BATs can use their own test report form provided it includes the minimum test reporting elements found in the City of Duvall's Form (Appendix C). If the minimum test reporting elements are not provided, then the test report will be denied, and the City's CCS may require the re-testing of the assembly utilizing the City of Duvall's Form or the testing be completed in front of him / her. Test results are to be emailed, mailed or faxed to the CCS within 10 days and contain the signature and printed name of the BAT. The results are then hand entered into the excel database. When the field test report shows an assembly has failed its test, the City requires the customer to repair the assembly and return it to proper working condition in an amount of time to be determined on a case-by-case basis, depending on the hazard.

Multiple assembly failures of an assembly will result in the property owner having the assembly repaired or replaced by a certified BAT with an assembly appropriate for the degree of hazard.

The City will notify the DOH, Office of Drinking Water when it suspects a test report is falsified for their follow-up.

Retesting may be required, at the City's discretion, on backflow assemblies which have questionable test results or on assemblies which have test report information which has changed (e.g., the serial number, model number, location, or other information does not match information provided at the time of installation) and no prior notice was given.

QUALITY ASSURANCE PROGRAM (ELEMENT 6)

BATs are required to submit in a copy of their current certification card and current test kit calibration information annually. BAT certifications are also verified prior to entering test results into the Excel tracking spreadsheet. The BAT certification information is checked against information provided from Washington Certification Services.

BATs are notified immediately if the test report contents are incomplete or incorrect. Correction generally occurs within a week.

The City requires BATs to submit current copies of their DOH certification (or renewal) and test kit verification of accuracy every January. The City also requires minimum test report content, which can be found in Appendix C.

RESPONDING TO BACKFLOW INCIDENTS (ELEMENT 7)

In the event of a cross connection incident, which contaminates the City's water supply, or occurs within the premises of a consumer served by the City, the City will notify DOH, and the King County Health Department as soon as possible after the incident, but no later than the end of the next business day. The City's response includes an onsite inspection to determine the extent of the backflow event and depending on the nature of the event, samples may be taken, the water line flushed, or the water turned off to contain the contamination. If the incident occurs after hours, staff will contact DOH using their emergency after hours phone number (1-877-481-4901). The City will document the details of the backflow incident using DOH's Backflow Incident Report Form found in Appendix D. Additional supporting information such as photographs and sampling results (if taken) are attached to the report. Generally, there is a follow-up meeting with DOH staff to discuss the incident and actions taken. Also, the City will include all backflow incident report(s) as part of the Annual Summary Report (ASR).

Outline of City response to a backflow incident:

Emergency Condition: Water System Contamination Due to a Backflow Incident

Impact on System: Potentially major impact. Water not suitable for potable use - loss of supply.

Emergency Response:

1. Notify the City CCS personnel of the incident.
2. Shut down the affected mains, if possible, to contain the affected contaminants.
3. Notify DOH of the backflow incident.
4. Notify all customers of the problem and instruct them to boil all water to be used for consumption and cooking or issue a no-drinking warning.
5. Flush affected water mains to remove contaminants.
6. Disinfect reservoirs and water mains, as necessary, to remove contaminated residuals.
7. Analyze water quality in other parts of the distribution system to ensure that all contaminants were contained.

PUBLIC EDUCATION (ELEMENT 8)

The City's primary educational effort involves using the annual Consumer Confidence Report to convey the importance of preventing cross connections and maintaining backflow prevention assemblies through annual testing. The City's website and occasionally reminders in the City's monthly newsletter is also another avenue used to inform the public about the importance of preventing cross connections. Lastly the City has brochures available to contractors, businesses, and used at various City events promoting water conservation and backflow prevention. The City will continue to provide CCC program information with bill inserts, handouts distributed to customers, or other CCC program handouts.

RECORD KEEPING AND REPORTING (ELEMENT 9)

Original records, such as project submittals, correspondence, plans, etc., are kept on file, either directly with the City's CCS, or if in conjunction with a larger project, on file with Building Department. Eventually these files are archived according to retention schedules set forth in chapter 40.14 RCW and chapter 246-290 WAC. Records are kept both in paper and electronic format. As mentioned previously, annual test results are emailed, faxed or mailed, and results entered into the Excel database. Notification and violation letters along with emails are records which are also kept. These records will form the basis of any enforcement action or legal defense by the City. The master list, inventory information, list of approved AVBs, and ASR records are available to DOH upon request.

Master List

The Excel database maintains a master list of service connections of severe, high and low hazards for as long as the hazard exists. It is from this database the annual notification letters are generated and sent.

Inventory of Backflow Prevention Assemblies

The Excel database maintains the inventory of active and inactive assemblies including the exact assembly location, assembly description (type, manufacturer, model, size and serial number), and the assessed degree of hazard, the installation date, history or inspection, tests and repairs, test results and the person performing the inspection. Approved air gaps installed in lieu of approved

assemblies will include the same information as that of mechanical backflow prevention assemblies. The City does not allow atmospheric vacuum breakers (AVBs) for irrigation protection, therefore, there is no record keeping associated with AVBs. However, AVBs are allowed for in-premise use but a higher form of backflow protection is required upstream at the meter.

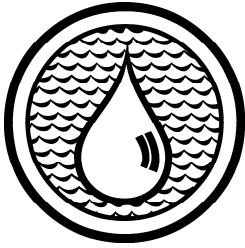
Annual Test Report Results Retention: State regulations require retention of all test results for five years.

SPECIAL REQUIREMENTS FOR RECLAIMED WATER (ELEMENT 10)

Additional cross-connection control requirements may be imposed by DOH for systems that distribute or receive reclaimed water within their water service area in accordance with Chapter 90.46 RCW. The City currently does not distribute or receive reclaimed water within its service area; therefore, these requirements are not applicable. However, if reclaimed water is used in the future, then the City will follow all requirements of the permits issued under Chapter 90.46 RCW.

The degree of hazard for this type of service is a high health hazard. A RPBA will be required on the water service to properties which both potable and reclaimed water are present. Where potable water is being used for makeup water for reclaimed water uses, the potable water supply must be protected with an air gap system.

APPENDIX A: DOH Cross Connection Control Requirements



Cross-connection control rules and definitions

Extracts from Group A Public Water Supplies, chapter 246-290 WAC

The full rule is online at <http://www.doh.wa.gov/ehp/dw/publications/331-010.pdf>

WAC 246-290-010 Definitions.

"**Approved air gap**" means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. To be an air gap approved by the department, the separation must be at least:

- Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be 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 (sidewall) is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) 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.

Acronyms

AG	air gap
AVB	atmospheric vacuum breaker
AWWA	American Water Works Association
BAT	backflow assembly tester
CCS	cross-connection control specialist
DCDA	double check detector assembly
DCVA	double check valve assembly
EPA	U.S. Environmental Protection Agency
IAPMO	International Association of Plumbing and Mechanical Officials
PVBA	pressure vacuum breaker assembly
RPBA	reduced pressure backflow assembly
RPDA	reduced pressure detector assembly
SVBA	spill resistant vacuum breaker assembly
UPC	Uniform Plumbing Code
WAC	Washington Administrative Code

"**Approved atmospheric vacuum breaker (AVB)**" means an AVB of make, model, and size that is approved by the department. AVBs that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or that are listed or approved by other nationally recognized testing agencies (such as IAPMO, ANSI, or UL) acceptable to the authority having jurisdiction are considered approved by the department.

"**Approved backflow preventer**" means an approved air gap, an approved backflow prevention assembly, or an approved AVB. The terms "approved backflow preventer," "approved air gap," or "approved backflow prevention assembly" refer only to those approved backflow preventers relied upon by the purveyor for the protection of the public water system. The requirements of WAC 246-290-490 do not apply to backflow preventers installed for other purposes.



"Approved backflow prevention assembly" means an RPBA, RPDA, DCVA, DCDA, PVBA, or SVBA of make, model, and size that is approved by the department. Assemblies that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or other entity acceptable to the department are considered approved by the department.

"Authority having jurisdiction" (formerly known as local administrative authority) means the local official, board, department, or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code as adopted under chapter 19.27 RCW.

"Backflow" means the undesirable reversal of flow of water or other substances through a cross-connection into the public water system or consumer's potable water system.

"Backflow assembly tester" means a person holding a valid BAT certificate issued under chapter 246-292 WAC.

"Backpressure" means a pressure (caused by a pump, elevated tank or piping, boiler, or other means) on the consumer's side of the service connection that is greater than the pressure provided by the public water system and which may cause backflow.

"Backsiphonage" means backflow due to a reduction in system pressure in the purveyor's distribution system and/or consumer's water system.

"Combination fire protection system" means a fire sprinkler system that:

- Is supplied only by the purveyor's water;
- Does not have a fire department pumper connection; and
- Is constructed of approved potable water piping and materials that serve both the fire sprinkler system and the consumer's potable water system.

"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 purposes of cross-connection control, "consumer" means the owner or operator of a water system connected to a public water system through a service connection.

"Consumer's water system" as used in WAC 246-290-490, means any potable or industrial water system that begins at the point of delivery from the public water system and is located on the consumer's 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.

"Contaminant" means a substance present in drinking water that may adversely affect the health of the consumer or the aesthetic qualities of the water.

"Council" means the Washington state building code council under WAC 51-04-015(2).

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

"Cross-connection control program" means the administrative and technical procedures the purveyor implements to protect the public water system from contamination via cross-connections as required in WAC 246-290-490.

"Cross-connection control specialist" means a person holding a valid CCS certificate issued under chapter 246-292 WAC.

"Cross-connection control summary report" means the annual report that describes the status of the purveyor's cross-connection control program.

"Department" means the Washington state department of health or health officer as identified in a joint plan of operation under WAC 246-290-030(1).

"Distribution system" means all piping components of a public water system that serve to convey water from transmission mains linked to source, storage and treatment facilities to the consumer excluding individual services.

"Emergency" means an unforeseen event that causes damage or disrupts normal operations and requires immediate action to protect public health and safety.

"Flow-through fire protection system" means a fire sprinkler system that:

- Is supplied only by the purveyor's water;
- Does not have a fire department pumper connection;
- Is constructed of approved potable water piping and materials to which sprinkler heads are attached; and
- Terminates at a connection to a toilet or other plumbing fixture to prevent stagnant water.

"High health cross-connection hazard" means a cross-connection involving any substance that could impair the quality of potable water and create an actual public health hazard through injury, poisoning, or spread of disease.

"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.

"Low cross-connection hazard" means a cross-connection that could impair the quality of 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 potable waters for domestic use.

"Potable" means water suitable for drinking by the public.

"Premises isolation" means a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer's water system from the purveyor's distribution system.

"Public water system" is defined and referenced under WAC 246-290-020.

"Purveyor" means an agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or other entity owning or operating a public water system. Purveyor also means the authorized agents of these entities.

"Reclaimed water" means effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for beneficial use or a controlled use that would not otherwise occur, and it is no longer considered wastewater.

"Severe health cross-connection hazard" means a cross-connection which could impair the quality of potable water and create an immediate, severe public health hazard through poisoning or spread of disease by contaminants from radioactive material processing plants, nuclear reactors, or wastewater treatment plants.

"State building code" means the codes adopted by and referenced in chapter 19.27 RCW; the state energy code; and any other codes so designated by the Washington state legislature as adopted and amended by the council.

"Unapproved auxiliary water supply" means a water supply (other than the purveyor's water supply) on or available to the consumer's premises that is either not approved for human consumption by the health agency having jurisdiction or is not otherwise acceptable to the purveyor.

"Uniform Plumbing Code (UPC)" means the code adopted under RCW 19.27.031(4) and implemented under chapter 51-56 WAC. This code establishes statewide minimum plumbing standards applicable within the property lines of the consumer's premises.

"Used water" means water which has left the control of the purveyor.

WAC 246-290-490 Cross-connection control.

(1) Applicability, purpose, and responsibility.

- (a) All community water systems shall comply with the cross-connection control requirements specified in this section.
- (b) All non-community water systems shall apply the principles and provisions of this section, including subsection (4)(b) of this section, as applicable to protect the public water system from contamination via cross-connections. Noncommunity systems that comply with subsection (4)(b) of this section and the provisions of WAC 51-56-0600 of the UPC (which addresses the installation of backflow preventers at points of water use within the potable water system) shall be considered in compliance with the requirements of this section.
- (c) The purpose of the purveyor's cross-connection control program shall be to protect the public water system, as defined in WAC 246-290-010, from contamination via cross-connections.
- (d) The purveyor's responsibility for cross-connection control shall begin at the water supply source, include all the public water treatment, storage, and distribution facilities, and end at the point of delivery to the consumer's water system, which begins at the downstream end of the service connection or water meter located on the public right of way or utility-held easement.
- (e) Under this section, purveyors are not responsible for eliminating or controlling cross-connections within the consumer's water system. Under chapter 19.27 RCW, the responsibility for cross-connection control within the consumer's water system, i.e., within the property lines of the consumer's premises, lies with the authority having jurisdiction.

(2) General program requirements.

- (a) The purveyor shall develop and implement a cross-connection control program that meets the requirements of this section, but may establish a more stringent program through local ordinances, resolutions, codes, bylaws, or operating rules.
- (b) Purveyors shall ensure that good engineering and public health protection practices are used in the development and implementation of cross-connection control programs. Department publications and the most recently published editions of references, such as, but not limited to, those listed below, may be used as guidance for cross-connection program development and implementation:
 - (i) *Manual of Cross-Connection Control* published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC Manual);
 - (ii) *Cross-Connection Control Manual, Accepted Procedure and Practice* published by the Pacific Northwest Section of the American Water Works Association (PNWS-AWWA Manual); or
 - (iii) Guidance document: *Cross-Connection Control for Small Water Systems* published by the department.
- (c) The purveyor may implement the cross-connection control program, or any portion thereof, directly or by means of a contract with another agency or party acceptable to the department.
- (d) The purveyor shall coordinate with the authority having jurisdiction in all matters concerning cross-connection control. The purveyor shall document and describe the coordination, including delineation of responsibilities, in the written cross-connection control program required in (e) of this subsection.
- (e) The purveyor shall include a written description of the cross-connection control program in the water system plan required under WAC 246-290-100 or the small water system management program required under WAC 246-290-105. The cross-connection control program shall include the minimum program elements described in subsection (3) of this section.
- (f) The purveyor shall ensure that cross-connections between the distribution system and a consumer's water system are eliminated or controlled by the installation of an approved backflow preventer commensurate with the degree of hazard. This can be accomplished by implementation of a cross-connection program that relies on:
 - (i) Premises isolation as defined in WAC 246-290-010; or
 - (ii) Premises isolation and in-premises protection as defined in WAC 246-290-010.
- (g) Purveyors with cross-connection control programs that rely both on premises isolation and in-premises protection:
 - (i) Shall comply with the premises isolation requirements specified in subsection (4)(b) of this section; and
 - (ii) May reduce premises isolation requirements and rely on in-premises protection for premises other than the type addressed in subsection (4)(b) of this section, only if the following conditions are met:
 - (A) The in-premises backflow preventers provide a level of protection commensurate with the purveyor's assessed degree of hazard;
 - (B) Backflow preventers which provide the in-premises backflow protection meet the definition of approved backflow preventers as described in WAC 246-290-010;

- (C) The approved backflow preventers are installed, inspected, tested (if applicable), maintained, and repaired in accordance with subsections (6) and (7) of this section;
 - (D) Records of the backflow preventers are maintained in accordance with subsections (3)(j) and (8) of this section; and
 - (E) The purveyor has reasonable access to the consumer's premises to conduct an initial hazard evaluation and periodic reevaluations to determine whether the in-premises protection is adequate to protect the purveyor's distribution system.
- (h) The purveyor shall take appropriate corrective action as authorized by the legal instrument required by subsection (3)(b) of this section, when:
 - (i) A cross-connection exists that is not controlled commensurate to the degree of hazard assessed by the purveyor; or
 - (ii) A consumer fails to comply with the purveyor's requirements regarding the installation, inspection, testing, maintenance or repair of approved backflow preventers required by this chapter.
 - (i) The purveyor's corrective action may include, but is not limited to:
 - (i) Denying or discontinuing water service to a consumer's premises until the cross-connection hazard is eliminated or controlled to the satisfaction of the purveyor;
 - (ii) Requiring the consumer to install an approved backflow preventer for premises isolation commensurate with the degree of hazard; or
 - (iii) The purveyor installing an approved backflow preventer for premises isolation commensurate with the degree of hazard.
 - (j) Except in the event of an emergency, purveyors shall notify the authority having jurisdiction prior to denying or discontinuing water service to a consumer's premises for one or more of the reasons listed in (h) of this subsection.
 - (k) The purveyor shall prohibit the intentional return of used water to the purveyor's distribution system. Used water includes, but is not limited to, water used for heating, cooling, or other purposes within the consumer's water system.

(3) Minimum elements of a cross-connection control program.

- (a) To be acceptable to the department, the purveyor's cross-connection control program shall include the minimum elements identified in this subsection.
- (b) **Element 1:** The purveyor shall adopt a local ordinance, resolution, code, bylaw, or other written legal instrument that:
 - (i) Establishes the purveyor's legal authority to implement a cross-connection control program;
 - (ii) Describes the operating policies and technical provisions of the purveyor's cross-connection control program; and
 - (iii) Describes the corrective actions used to ensure that consumers comply with the purveyor's cross-connection control requirements.
- (c) **Element 2:** The purveyor shall develop and implement procedures and schedules for evaluating new and existing service connections to assess the degree of hazard posed by the consumer's premises to the purveyor's distribution system and notifying the consumer within a reasonable time frame of the hazard evaluation results. At a minimum, the program shall meet the following:

- (i) For connections made on or after April 9, 1999, procedures shall ensure that an initial evaluation is conducted before water service is provided;
 - (ii) For all other connections, procedures shall ensure that an initial evaluation is conducted in accordance with a schedule acceptable to the department; and
 - (iii) For all service connections, once an initial evaluation has been conducted, procedures shall ensure that periodic reevaluations are conducted in accordance with a schedule acceptable to the department and whenever there is a change in the use of the premises.
- (d) **Element 3:** The purveyor shall develop and implement procedures and schedules for ensuring that:
- (i) Cross-connections are eliminated whenever possible;
 - (ii) When cross-connections cannot be eliminated, they are controlled by installation of approved backflow preventers commensurate with the degree of hazard; and
 - (iii) Approved backflow preventers are installed in accordance with the requirements of subsection (6) of this section.
- (e) **Element 4:** The purveyor shall ensure that personnel, including at least one person certified as a CCS, are provided to develop and implement the cross-connection control program.
- (f) **Element 5:** The purveyor shall develop and implement procedures to ensure that approved backflow preventers relied upon to protect the public water system are inspected and/or tested (as applicable) under subsection (7) of this section.
- (g) **Element 6:** The purveyor shall develop and implement a backflow prevention assembly testing quality control assurance program, including, but not limited to, documentation of BAT certification and test kit calibration, test report contents, and time frames for submitting completed test reports.
- (h) **Element 7:** The purveyor shall develop and implement (when appropriate) procedures for responding to backflow incidents.
- (i) **Element 8:** The purveyor shall include information on cross-connection control in the purveyor's existing program for educating consumers about water system operation. The public education program may include periodic bill inserts, public service announcements, pamphlet distribution, notification of new consumers and consumer confidence reports.
- (j) **Element 9:** The purveyor shall develop and maintain cross-connection control records including, but not limited to, the following:
- (i) A master list of service connections and/or consumer's premises where the purveyor relies upon approved backflow preventers to protect the public water system from contamination, the assessed hazard level of each, and the required backflow preventer(s);
 - (ii) Inventory information on backflow preventers that protect the public water system including:
 - (A) Approved air gaps installed in lieu of approved assemblies including exact air gap location, assessed degree of hazard, installation date, history of inspections, inspection results, and person conducting inspections;
 - (B) Approved backflow assemblies including exact assembly location, assembly description (type, manufacturer, model, size, and serial number), assessed degree of hazard, installation date, history of inspections, tests and repairs, test results, and person performing tests; and

- (C) Approved AVBs used for irrigation system applications including location, description (manufacturer, model and size), installation date, history of inspection(s), and person performing inspection(s).
 - (iii) Cross-connection program summary reports and backflow incident reports required under subsection (8) of this section.
- (k) Element 10:** Purveyors who distribute and/or have facilities that receive reclaimed water within their water service area shall meet any additional cross-connection control requirements imposed by the department in a permit issued under chapter 90.46 RCW.

(4) Approved backflow preventer selection.

- (a) The purveyor shall ensure that a CCS:
 - (i) Assesses the degree of hazard posed by the consumer's water system upon the purveyor's distribution system; and
 - (ii) Determines the appropriate method of backflow protection for premises isolation as described in Table 8.

TABLE 8

APPROPRIATE METHODS OF BACKFLOW PROTECTION FOR PREMISES ISOLATION

Degree of Hazard	Application Condition	Appropriate Approved Backflow Preventer
High health cross-connection hazard	Backsiphonage or backpressure backflow	AG, RPBA, or RPDA
Low cross-connection hazard	Backsiphonage or backpressure backflow	AG, RPBA, RPDA, DCVA, or DCDA

- (b) Premises isolation requirements.
 - (i) The purveyor shall ensure that an approved air gap, RPBA, or RPDA is installed for premises isolation for service connections to premises posing a high health cross-connection hazard including, but not limited to, those premises listed in Table 9, except those premises identified as severe in (b)(ii) of this subsection.
 - (ii) For service connections to premises posing a severe health cross-connection hazard including wastewater treatment plants, radioactive material processing plants, and nuclear reactors, the purveyor shall ensure that either an:
 - (A) Approved air gap is installed for premises isolation; or
 - (B) Approved RPBA or RPDA is installed for premises isolation in combination with an in-plant approved air gap.
 - (iii) If the purveyor's CCS determines that no hazard exists for a connection serving premises of the type listed in Table 9, the purveyor may grant an exception to the premises isolation requirements of (b)(i) of this subsection.
 - (iv) The purveyor shall document, on a case-by-case basis, the reasons for granting an exception under (b)(i) of this subsection and include the documentation in the cross-connection control program annual summary report required in subsection (8) of this section.

TABLE 9

**SEVERE* AND HIGH HEALTH CROSS-CONNECTION HAZARD PREMISES
REQUIRING PREMISES ISOLATION BY AG OR RPBA**

Agricultural (farms and dairies)

Beverage bottling plants

Car washes

Chemical plants

Commercial laundries and dry cleaners

Premises where both reclaimed water and potable water are provided

Film processing facilities

Food processing plants

Hospitals, medical centers, nursing homes, veterinary, medical and dental clinics, and blood plasma centers

Premises with separate irrigation systems using the purveyor's water supply and with chemical addition⁺

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^{*}

Premises with an unapproved auxiliary water supply interconnected with the potable water supply

⁺ For example, parks, playgrounds, golf courses, cemeteries, estates, etc.

^{*} RPBA's for connections serving these premises are acceptable only when used in combination with an in-plant approved air gap; otherwise, the purveyor shall require an approved air gap at the service connection.

(c) Backflow protection for single-family residences.

- (i) For single-family residential service connections, the purveyor shall comply with the premises isolation requirements of (b) of this subsection when applicable.
- (ii) If the requirements of (b) of this subsection do not apply and the requirements specified in subsection (2) (g)(ii) of this section are met, the purveyor may rely on backflow protection provided at the point of hazard in accordance with WAC 51-56-0600 of the UPC for hazards such as, but not limited to:
 - (A) Irrigation systems;
 - (B) Swimming pools or spas;
 - (C) Ponds; and
 - (D) Boilers.

For example, the purveyor may accept an approved AVB on a residential irrigation system, if the AVB is properly installed under the UPC.

(d) Backflow protection for fire protection systems.

- (i) Backflow protection is not required for residential flow-through or combination fire protection systems constructed of potable water piping and materials.
- (ii) For service connections with fire protection systems other than flow-through or combination systems, the purveyor shall ensure that backflow protection consistent with WAC 51-56-0600 of the UPC is installed. The UPC requires minimum protection as follows:
 - (A) An RPBA or RPDA for fire protection systems with chemical addition or using unapproved auxiliary water supply; and
 - (B) A DCVA or DCDA for all other fire protection systems.
- (iii) For connections made on or after April 9, 1999, the purveyor shall ensure that backflow protection is installed before water service is provided.
- (iv) For existing fire protection systems:
 - (A) With chemical addition or using unapproved auxiliary supplies, the purveyor shall ensure that backflow protection is installed within ninety days of the purveyor notifying the consumer of the high health cross-connection hazard or in accordance with an alternate schedule acceptable to the purveyor.
 - (B) Without chemical addition, without on-site storage, and using only the purveyor's water (i.e., no unapproved auxiliary supplies on or available to the premises), the purveyor shall ensure that backflow protection is installed in accordance with a schedule acceptable to the purveyor or at an earlier date if required by the code official administering the State Building Code as defined in chapter 51-04 WAC.
 - (C) When establishing backflow protection retrofitting schedules for fire protection systems that have the characteristics listed in (d)(iv)(B) of this subsection, the purveyor may consider factors such as, but not limited to, impacts of assembly installation on sprinkler performance, costs of retrofitting, and difficulty of assembly installation.

- (e) Purveyors may require approved backflow preventers commensurate with the degree of hazard as determined by the purveyor to be installed for premises isolation for connections serving premises that have characteristics such as, but not limited to, the following:
 - (i) Complex plumbing arrangements or plumbing potentially subject to frequent changes that make it impracticable to assess whether cross-connection hazards exist;
 - (ii) A repeated history of cross-connections being established or reestablished; or
 - (iii) Cross-connection hazards are unavoidable or not correctable, such as, but not limited to, tall buildings.

(5) Approved backflow preventers.

- (a) The purveyor shall ensure that all backflow prevention assemblies relied upon by the purveyor are models included on the current list of backflow prevention assemblies approved for use in Washington state. The current approved assemblies list is available from the department upon request.
- (b) The purveyor may rely on testable backflow prevention assemblies that are not currently approved by the department, if the assemblies:
 - (i) Were included on the department and/or USC list of approved backflow prevention assemblies at the time of installation;
 - (ii) Have been properly maintained;
 - (iii) Are commensurate with the purveyor's assessed degree of hazard; and
 - (iv) Have been inspected and tested at least annually and have successfully passed the annual tests.
- (c) The purveyor shall ensure that an unlisted backflow prevention assembly is replaced by an approved assembly commensurate with the degree of hazard, when the unlisted assembly:
 - (i) Does not meet the conditions specified in (b)(i) through (iv) of this subsection;
 - (ii) Is moved; or
 - (iii) Cannot be repaired using spare parts from the original manufacturer.
- (d) The purveyor shall ensure that AVBs meet the definition of approved atmospheric vacuum breakers as described in WAC 246-290-010.

(6) Approved backflow preventer installation.

- (a) The purveyor shall ensure that approved backflow preventers are installed in the orientation for which they are approved (if applicable).
- (b) The purveyor shall ensure that approved backflow preventers are installed in a manner that:
 - (i) Facilitates their proper operation, maintenance, inspection, in-line testing (as applicable), and repair using standard installation procedures acceptable to the department such as those in the USC Manual or PNWS-AWWA Manual;
 - (ii) Ensures that the assembly will not become submerged due to weather-related conditions such as flooding; and
 - (iii) Ensures compliance with all applicable safety regulations.

- (c) The purveyor shall ensure that approved backflow assemblies for premises isolation are installed at a location adjacent to the meter or property line or an alternate location acceptable to the purveyor.
- (d) When premises isolation assemblies are installed at an alternate location acceptable to the purveyor, the purveyor shall ensure that there are no connections between the point of delivery from the public water system and the approved backflow assembly, unless the installation of the connection meets the purveyor's cross-connection control requirements and is specifically approved by the purveyor.
- (e) The purveyor shall ensure that approved backflow preventers are installed in accordance with the following time frames:
 - (i) For connections made on or after April 9, 1999, the following conditions shall be met before service is provided:
 - (A) The provisions of subsection (3)(d)(ii) of this section; and
 - (B) Satisfactory completion of the requirements of subsection (7) of this section.
 - (ii) For existing connections where the purveyor identifies a high health cross-connection hazard, the provisions of (3)(d)(ii) of this section shall be met:
 - (A) Within ninety days of the purveyor notifying the consumer of the high health cross-connection hazard; or
 - (B) In accordance with an alternate schedule acceptable to the purveyor.
 - (iii) For existing connections where the purveyor identifies a low cross-connection hazard, the provisions of subsection (3)(d)(ii) of this section shall be met in accordance with a schedule acceptable to the purveyor.
- (f) The purveyor shall ensure that bypass piping installed around any approved backflow preventer is equipped with an approved backflow preventer that:
 - (i) Affords at least the same level of protection as the approved backflow preventer that is being bypassed; and
 - (ii) Complies with all applicable requirements of this section.

(7) Approved backflow preventer inspection and testing.

- (a) For backflow preventers that protect the public water system, the purveyor shall ensure that:
 - (i) A CCS inspects backflow preventer installations to ensure that protection is provided commensurate with the assessed degree of hazard;
 - (ii) Either a BAT or CCS inspects:
 - (A) Air gaps installed in lieu of approved backflow prevention assemblies for compliance with the approved air gap definition; and
 - (B) Backflow prevention assemblies for correct installation and approval status.
 - (iii) A BAT tests approved backflow prevention assemblies for proper operation.

- (b) The purveyor shall ensure that inspections and/or tests of approved air gaps and approved backflow assemblies that protect the public water system are conducted:
 - (i) When any of the following occur:
 - (A) Upon installation, repair, reinstallation, or relocation of an assembly;
 - (B) Upon installation or replumbing of an air gap;
 - (C) After a backflow incident involving the assembly or air gap; and
 - (ii) Annually thereafter, unless the purveyor requires more frequent testing for high hazard premises or for assemblies that repeatedly fail.
- (c) The purveyor shall ensure that inspections of AVBs installed on irrigation systems are conducted:
 - (i) At the time of installation;
 - (ii) After a backflow incident; and
 - (iii) After repair, reinstallation, or relocation.
- (d) The purveyor shall ensure that approved backflow prevention assemblies are tested using procedures acceptable to the department, such as those specified in the most recently published edition of the USC Manual. When circumstances, such as, but not limited to, configuration or location of the assembly, preclude the use of USC test procedures, the purveyor may allow, on a case-by-case basis, the use of alternate (non-USC) test procedures acceptable to the department.
- (e) The purveyor shall ensure that results of backflow prevention assembly inspections and tests are documented and reported in a manner acceptable to the purveyor.
- (f) The purveyor shall ensure that an approved backflow prevention assembly or AVB, whenever found to be improperly installed, defective, not commensurate with the degree of hazard, or failing a test (if applicable) is properly reinstalled, repaired, overhauled, or replaced.
- (g) The purveyor shall ensure that an approved air gap, whenever found to be altered or improperly installed, is properly replumbed or, if commensurate with the degree of hazard, is replaced by an approved RPBA.

(8) Recordkeeping and reporting.

- (a) Purveyors shall keep cross-connection control records for the following time frames:
 - (i) Records pertaining to the master list of service connections and/or consumer's premises required in subsection (3)(j)(i) of this section shall be kept as long as the premises pose a cross-connection hazard to the purveyor's distribution system;
 - (ii) Records regarding inventory information required in subsection (3)(j)(ii) of this section shall be kept for five years or for the life of the approved backflow preventer whichever is shorter; and
 - (iii) Records regarding backflow incidents and annual summary reports required in subsection (3)(j)(iii) of this section shall be kept for five years.
- (b) Purveyors may maintain cross-connection control records in original form or transfer data to tabular summaries.
- (c) Purveyors may maintain records or data in any media, such as paper, film, or electronic format.

- (d) The purveyor shall complete the cross-connection control program summary report annually. Report forms and guidance on completing the report are available from the department.
 - (e) The purveyor shall make all records and reports required in subsection (3)(j) of this section available to the department or its representative upon request.
 - (f) The purveyor shall notify the department, authority having jurisdiction, and local health jurisdiction as soon as possible, but no later than the end of the next business day, when a backflow incident is known by the purveyor to have:
 - (i) Contaminated the public water system; or
 - (ii) Occurred within the premises of a consumer served by the purveyor.
 - (g) The purveyor shall:
 - (i) Document details of backflow incidents contaminating the public water system on a backflow incident report form available from the department; and
 - (ii) Include all backflow incident report(s) in the annual cross-connection program summary report referenced in (d) of this subsection, unless otherwise requested by the department.
-

For more information

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

Call the Office of Drinking Water Cross-Connection Control Program staff at (360) 236-3133 or toll-free (800) 521-0323.



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

APPENDIX B: DMC *Section 9.02.040(c)* Ordinance No. 1071

**CITY OF DUVALL
WASHINGTON**

ORDINANCE NO. 1071

**AN ORDINANCE OF THE CITY OF DUVALL,
WASHINGTON, AMENDING DUVALL MUNICIPAL CODE
CHAPTERS 9.02, 9.03 AND 9.04 TO UPDATE UTILITY
BILLING PROCEDURES**

WHEREAS, the City of Duvall Municipal Code prescribes the policies and procedures for billing of the water and sewer utilities in Chapters 9.02, 9.03 and 9.04; and

WHEREAS, employee titles and minor procedures within these Code chapters have been revised to promote efficiency and improved customer service, and such revisions should be incorporated into the City Code; and

WHEREAS, some spelling and grammatical errors have been identified in these Code chapters and need to be corrected;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DUVALL, WASHINGTON, DO ORDAIN AS FOLLOWS:

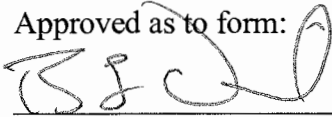
Section 1. Amend Duvall Municipal Code. The Duvall Municipal Code Chapters 9.02, 9.03 and 9.04 are hereby amended as shown in the attached Exhibits A and B.

Section 2. Severability. Should any section, paragraph, sentence, clause or phrase of this Ordinance, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason, or should any portion of this Ordinance be pre-empted by state or federal law or regulation, such decision or pre-emption shall not affect the validity of the remaining portions of this Ordinance or its application to other persons or circumstances.

Section 3. Effective Date. This Ordinance shall be published in the official newspaper of the City, and shall take effect and be in full force five (5) days after the date of publication.

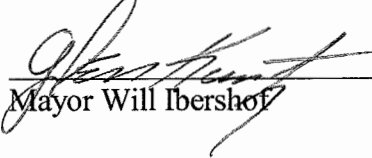
ADOPTED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 24th DAY OF APRIL, 2008.

Approved as to form:



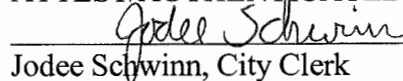
Bruce L. Disend, City Attorney

CITY OF DUVALL



Mayor Will Ibershof

ATTEST/AUTHENTICATED:



Jodee Schwinn, City Clerk

EXHIBIT A

Chapter 9.02 WATER UTILITY

9.02.010 Billing procedures.

A. Metered Service Established. The consumption and use of all water taken from the city water system, or from the water system of any water district or association which obtains its water from the city water system, shall be metered at each individual connection to the city water system. The rates for such water shall be fixed from time to time by resolution of the City Council. The rates for private fire protection service shall also be fixed from time to time by resolution of the City Council.

B. Bills Due, Delinquency, Penalty.

1. All charges for water supplied shall be due and payable to the city on the first day of each month, and such charges shall be billed monthly.

2. "User," as stated in this subsection, means a person, firm, corporation, entity, user, owner, occupant of a building, property, or premises using or having available for use water service connected to the water system of the city from which water service is available and can be withdrawn or used, and also means the person or entity responsible for paying for water connection charges as shown on the records of the city. Charges for water furnished remaining unpaid at the close of business on the 20th day of the month in which billed (or the close of the next regular business day if the 20th should fall on a Saturday, Sunday or a legal holiday) shall be considered delinquent and shall call for a delinquent charge of ten (10) percent of the total combined utility amount due. Any checks returned due to insufficient funds shall incur a penalty in an amount to be fixed from time to time by resolution of the City Council. If the delinquent charges and penalties remain unpaid at the close of business on the 14th day of the succeeding month (or the close of the next regular business day if the 14th should fall on a Saturday, Sunday or a legal holiday) a shut-off notice will be mailed to the user. This notice will inform the user that water service will be discontinued and shut off following five working days from the date of the notice unless all delinquent charges and penalties are paid within said period of time. The notice will also inform the user of the opportunity to meet with the City Clerk or other designated city official in charge of billings to determine the accuracy of the delinquent charges and penalties prior to the discontinuance of water service as herein provided. Service will not be resumed until all delinquencies and penalties, together with a water turn-on fee of thirty-five dollars (\$35.00), have been paid.

It shall be the obligation of the user of a building, property or premises using or having available for use water service connected to the water system of the city from which city water is available and can be withdrawn or used, to provide to the city a name and mailing address for the purposes of billing for water service and for the notices described above. No water service shall be provided to any premises unless such a billing name and address is provided. In the event water service is being provided to any premises and a billing name and address is not provided, the city will post the premises with a notice requiring that such information be provided. This notice shall state that water service will be discontinued and shut off following five working days from the date of the notice unless a mailing name and address is provided within said period of time. The notice will also inform the user of the opportunity to meet with the City Clerk or other designated city official in charge of billings to determine the accuracy of any delinquent charges and penalties then in existence and stated in the notice prior to the discontinuance of water service as provided in this section. Service will be resumed after a billing name and address is provided to the city, payment of water turn-on fees as provided in this section, and payment of all delinquent charges and penalties as provided in this section if applicable.

3. The first monthly bill of a new owner and the final bill of the previous owner will be pro-rated based upon the property closing date. If the city is notified of the sale after the closing date has passed, the billing will begin on the first business day that notification is received by the city. The owner will be liable for any unpaid bill from rentals and for a monthly minimum charge if the house remains unoccupied and the water has not been shut off at the owner's request. The back bill must be paid before the billing can be made to a new renter.

4. All charges for water and penalties in this section of after stated shall be a lien against the property to which such water service is furnished, superior to all other liens and encumbrances whatsoever, except those for general taxes and local and special assessments. Such liens shall be enforced by the city in the manner provided by law. Billings may be made in the name of a tenant or other occupants of the premises to which water service is furnished at the mailing address provided in subsection (B)(2) of this section, but such billing shall not relieve the owner of the premises from liability for the payment of the charges for furnishing water nor in any way affect the lien rights of the city against the premises to which water service is furnished. Failure to receive mail properly addressed to the mailing address provided above shall not be a valid defense for failure to pay the delinquent charges and penalties. Any change in the mailing address provided in this section must be properly filed with the office of the utility billing clerk before it will become effective. In the event the city must bring legal action to collect water service charges and/or penalties, the city shall, in addition, recover its attorney's fees and other costs incurred in connection with such collection.

5. An account set-up fee will be charged to all new billing customers to the utility billing system. The amount of this fee shall be fixed from time to time by resolution of the City Council.

6. It shall be the obligation of a water user to provide clear access to their water meter(s) so that reading the meter(s) is not impeded by landscaping, furniture, structures, debris or otherwise. In the event that the city meter reader cannot obtain reasonable access to the meter(s), a written notice shall be mailed to the user and placed at the property notifying the user that:

a. Access to the meter(s) must be provided; and

b. If access is not provided within fourteen (14) days, the city will clear an access to the meter(s) and charge the user for all costs incurred to provide the access.

7. A fee shall be charged to all utility billing customers requesting a re-read of their meter; provided, the fee shall not be charged if the original read was incorrect, if there is a leak associated with the read, or if the utility customer lacks the ability to re-read the meter without assistance due to physical, sensory or mental disability. The amount of this fee shall be fixed from time to time by resolution of the City Council. (Ord. 984 § 1, 2003; Ord. 980 § 1, 2003; Ord. 977 §§ 1--2, 2003; Ord. 962 § 1, 2002; Ord. 949 § 1, 2002; Ord. 948 § 1, 2002; Ord. 343 (part), 1982)

9.02.020 Connections.

(a) Service Installation, Water Meters, Capital Improvement Charge.

(1) Each separate residence (excluding mobile homes located in mobile home parks), multiple housing building, or commercial building using water from the city water system shall have a separate, direct connection to a water main. Each separate residence, multiple housing building, or commercial building shall have a separate shutoff. A general facilities charge shall be made, in an amount to be determined from time to time by resolution of the City Council. Pursuant to Washington State Department of Ecology guidelines, in conjunction with the Duvall comprehensive plan, one general facilities charge is required for each single-family detached dwelling unit, as defined in Section 14.34.360 of this code. Eighty-five (85) percent of one general facilities charge is required for each single-family attached (Section 14.34.350), senior citizen assisted (Section 13.34.340), multiple-family and mixed use (Section 14.34.330), or accessory (Section 14.34.320) dwelling unit that will draw water from the city's water system. Any other development desiring to draw water from the city's water system shall pay a general facilities charge calculated in the following manner:

(i) Anticipated monthly use shall be determined by the city engineer based upon anticipated property use, water supply line size, and plumbing fixture count, in accordance with state and federal manuals; and

(ii) The amount of anticipated use shall be converted to a ratio with the use utilized as the basis for calculating the single-family detached dwelling unit connection charge, or, in the event no such number exists, with an average use amount as established by the department of ecology for single-family detached dwelling unit; and

(iii) The ratio established shall be multiplied by the connection charge dollar amount as set by resolution of the City Council for a single-family detached dwelling unit.

In the event connection with the city water system requires the crossing of a street, roadway, railroad or river, there shall be an additional charge equal to the costs incurred in the installation of that portion of the connection crossing the street, roadway, railroad or river. The basic service

installation charge for customers outside the city limits shall be fixed from time to time by resolution of the City Council. The service installation charge shall be due prior to issuance of a building permit or, if no building permit is required in conjunction with the water service connection, prior to connection to the water system. In the event the building permit expires or the water service connection is not made ready by the applicant for connection by the city within one hundred twenty (120) days after the fees are paid and the connection is authorized by the city, the city shall retain that portion of the fee necessary to recover the city's administrative and other costs, and refund the balance, if any, to the applicant. The entire fee shall be re-collected, as provided in this section, prior to the reissuance of the building permit or connection to the water system.

2. Developers of all new subdivisions who expect to connect to a city water main shall be required to install all the service connections at such time the water main is installed. A service installation charge, for installation of the water meter on these developer installed service connections shall be due prior to issuance of the building permit for the residence. This service installation charge shall be fixed from time to time by resolution of the City Council. In the event the building permit expires the city shall retain that portion of the fee necessary to recover the city's administrative and other costs, and refund the balance, if any, to the applicant. The entire fee shall be re-collected, as provided in this section, prior to the issuance of the building permit.

3. In addition to the service installation charge representing the actual cost of connection outlined in Section 9.02.020(1)(a) and (b), there shall be an additional connection charge for new water service connections outside the boundaries of LID No. 1 in order that such property owners shall bear their equitable share of the cost of the water system. This charge shall be due prior to issuance of the building permit, or if a building permit is not required in conjunction with the water service connection, prior to connection to the water system. The amount of the capital improvement connection charge shall be fixed from time to time by resolution of the City Council. In the event the building permit expires or the water service connection is not made ready by the applicant for connection by the city within one hundred twenty (120) days after the fees are paid and the connection is authorized by the city, the city shall retain that portion of the fee necessary to recover the city's administrative and other costs, and refund the balance, if any, to the applicant. The entire connection charge shall be re-collected, as provided in this section, prior to the reissuance of the building permit or connection to the water system.

(b) Application for Water Service

1. All persons who desire to connect to the city water system, within the city limits or outside the city limits, must make written application to the permit coordinator. This application to contain at least, but not be limited to, the following information: Name and address of applicant/applicants and owner, occupation, location, legal description and address of property where water service is desired; approximate date water service is requested (notification of this date to be at least one week before water service is required). The service installation charge and connection charges, as stated above, and any charge hereinafter set forth, shall be paid prior to issuance of the building permit, or if no building permit is required in conjunction with the water service application, prior to connection to the water system.

2. If, within sixty (60) days of the date of conveying, by bill of sale, of a newly constructed water main to the city the developer presents a recovery contract accepted by the city, the city pledges itself to collect, to the extent provided in this section during a period of time consisting of fifteen (15) years, the prorated front footage cost of this newly constructed water main from any property owner who did not contribute to the original cost of the installation and who subsequently connects to said water main. This period shall commence from the date the contract has been recorded in the county auditor's office. These collections shall be paid to the original developer of said water main, his/her personal representative or assign, within sixty (60) days after each collection. There shall be a charge of ten dollars (\$10.00) for making each collection, which charge is to be paid by the applicant for such collection and shall belong to the city water system.

It shall be the duty of the City Clerk, upon acceptance by the City Council of a bill of sale, to notify each developer of his right to enter into a recovery agreement with the city. If no action is taken by the developer within the sixty (60) days provided for above, his right to enter into a recovery agreement shall be forfeited.

(i) Each owner requesting such collections in his behalf shall submit to the city for acceptance the following: A contract, to be known as a "recovery contract," describing the mains to which such

contract applies, stipulating those properties which shall be required to pay front footage charges, stating the fair pro rata share per foot of frontage to be collected from other properties fronting on said main, and stating that the city agrees to make such collections.

(ii) The "fair pro rata share" for recovery contracts is defined as the total cost of construction, including engineering and legal fees related to construction or conveyance of the mains to the city, divided by the number of feet of frontage on the main of property which may reasonably be expected to connect thereto for water service (benefited frontage). If a corner lot abuts a new system on both front and side, and if both sides are affected by the same recovery contract, only the least dimension of said lot shall be subject to recovery charges.

(iii) In addition to the submission of the recovery contract, it shall be the responsibility of the owner requesting such contract to show on the as-built drawings for the system what frontages are considered to be paid for by the construction of extension. If any of the tracts subject to recovery are irregularly shaped so as to make determination of frontage difficult, a fair "equivalent frontage" shall be used in computations of fair pro rata share and shall be so stated in the drawings.

(iv) Each recovery contract shall be prepared by, or reviewed by, the city attorney with the assistance of the city engineer. For this purpose the owner shall submit all necessary data on the cost of construction, as well as the conveyance and affidavit required. The attorney and engineer shall request such changes of the contract as they deem necessary and shall recommend acceptance of the contract by the City Council only after such changes, if any, have been made. (Ord. #695, 1993, amending Ord. #343 and 9.02.020(a) and (b))

3. The minimum fee for a water service application shall be adopted by resolution and governed by the provisions of DMC Section 1.04.120. (Subsection (b)(3) added by Ord. #832, 1997)

(c) Unauthorized connections; violations and penalties.

1. Any person/persons tapping into the water system of the City of Duvall, other than under the supervision of authorized personnel, or without paying the connection charges, and any person/persons turning on a water service that has been shut off pursuant to Section 9.02.020(b)2, and without paying all delinquencies and penalties, and any person/persons who shall cause injury to any portion of the city water system intentionally, or who shall take any water from said water system without paying for same, shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to a fine, or imprisonment, or both fine and imprisonment, to the maximum extent provided by law for each violation and conviction.

This section shall not limit the city's civil remedies for damages.

2. The city may refuse to supply, or may discontinue service to any customer for violation of any provision of the water system code, or for failure to pay bills when due. The city may refuse, or discontinue, service to any customer who requires, or uses, such volume of water that water service to any other customer may be thereby impaired. The city shall discontinue service to any customer who makes an unauthorized connection to the city water system, by-passes a city water meter, or in any other way misappropriates city water.

3. Discontinuance of service for any cause stated in this ordinance shall not release the customer from his obligation to the city for payment of bills and/or charges.

4. Whenever service is discontinued, as provided above, or elsewhere in this ordinance, the customer shall be charged a fee as set from time to time by city council resolution for discontinuance. Restoration of service, at the customer's request, and after payment of all delinquent bills and/or charges due, shall be done at the convenience of the water department.

5. A customer who wishes to terminate water service shall give at least three days notice to the utility billing clerk's office. No charge will be made for the shutting off of the water. A customer who terminates water service and requests restoration of service at the same location within sixty (60) days shall be charged sixty-five dollars (\$65.00) for such restoration of service.

(d) Water Meter and Water Service connection sizes and lengths.

1. Connection sizes;

(i) The size of a service connection and meter shall be determined by the number of dwelling units and shall not be less than the following:

Units	Meter Size	Meter Minimum Rated Capacity
1 & 2	3/4"	30 gpm

3 to 6	1"	50 gpm
7 to 20	1 1/2"	100 gpm
50 to 100	3"	300 gpm
Over 100	Submit design for approval.	

(ii) All multiple unit residences, apartments, trailer courts and motels shall be serviced by one connection and one meter, except that the owner may elect to treat each unit as a separate single residence and in such case there shall be installed and individual meter for each unit at the owners expense.

(iii) The pipe size for a service connection shall not be less than the size of the meter as set forth in the water application. At the discretion of the water superintendent, larger pipes may be installed to provide water to more than one meter from a single connection.

2. Length of water service connections;

(i) The maximum allowable distance from the water main to the meter shall be sixty (60) feet. Any service connection of greater length is considered a variance and shall be designed by a professional engineer and approved by the city engineer prior to installation. Also this applicant/applicants must follow the procedures for variance as listed elsewhere in this chapter.

(ii) The city reserves the right to meter any and all water users.

(iii) A private water line from the meter to the building to be served must not have a length of more than five hundred feet under any circumstances.

3. If the property to be served has not been platted a complete legal description of the property to be served must be given and verified by the city engineer. Water mains served by the city water system shall extend across the full frontage of the legally described property whose owner desires a permanent connection, and across the full frontage of any property that may lie between the said legally described property to be served and the street or road along which said mains lie. If the property has been platted and the plat recorded with the King County assessors office the water mains serving or about to serve the plat must be laid across the full frontage of all lots for which the service is requested before any water service connections will be made to any of said lots.

(e) Contractor's Restoration and Performance Bond Requirements and Insurance.

1. All individuals, businesses, and corporations who make application to install water lines, systems, or any part thereof, in any street in the city or the county, whether public or private, which are to be connected with the City of Duvall's water system, and whether the area is inside or outside of the city limits of the City of Duvall, shall post with the City of Duvall:

(1) Washington state contractor's license, and (2) a performance bond, if requested by the city, to guarantee for one year the aforesaid work actually performed, including but not limited to the actual installation of lines. Such bonds are conditions precedent to the commencement of work.

2. The restoration of street bond outside the city limits shall be in a reasonable sum for the restoration, which shall be determined by the development review committee and further, the bond shall be given by a company acceptable by the city.

3. Any individual, business, or corporation who receives a permit to install water lines as described in subsection (e)(1) of this section hereof, agrees by acceptance of such permit that he, his successors or assigns, will protect the City of Duvall and save it harmless from all claims, actions, or damages of every kind and description which may accrue to or be suffered by any person or persons or property by reason of the performance of such work, character of materials used, manner of installation, or by improper occupancy of rights-of-way or public place or public structure. In case any suit or action is brought against the City of Duvall for damages arising out of, or by reason of any of the above cases, the permittee, his successors or assigns, will, upon notice to him or them of commencement of such action, defend the same at his or their own sole costs and expense, and will satisfy any judgment after said suit or action shall have been determined, if adverse to the City of Duvall, and further, shall reimburse the City of Duvall for reasonable attorney's fees expended by the city in such actions.

4. All work contemplated to be done herein under shall be done satisfactory to the engineer and/or utility superintendent of the City of Duvall before any one individual or business is released from said restoration bond and before the one year term of the performance bond commences.

5. Insurance. The amounts of insurance required for any contractor performing such work shall be

determined from time to time by the development review committee. All required insurance policies shall name the City of Duvall as an additional insured. Such insurance must be obtained before any work may begin.

(f) Assessments for Main and Hydrant Installation.

1. All persons outside the original LID #1 and all persons partially inside and partially outside the original LID who are now served by the city with a temporary water line, shall be required to pay their proportionate share of the cost of installation of a six inch (or larger, if required) water main when said main passes their property and said temporary line is disconnected, and shall be obliged to pay the connection charges set forth in subsections (a) or (a)(2) of this section.

(g) Temporary Termination of Water/Sewer Service.

1. A customer who wishes to temporarily terminate water and sewer shall give at least three business days notice to the utility billing office. Effective January 1, 2002, a fee of sixty-five dollars (\$65.00) shall be imposed for each temporary termination. There shall be no limit upon the number of times a request for temporary termination may be made, provided that the customer's account is current. These procedures and fees also apply to water-only customers.

2. Effective January 1, 2002, and annually thereafter, the Finance Director shall adjust the temporary termination fee by the same percentage as the percentage increase in the Seattle/Tacoma CPI-U (June-June) rounding the fee to the nearest dollar. (Ord. 940 § 1, 2001; Ord. 902 § 1, 1999; Ord. 892 § 1, 1999; Ord. 343 (part), 1982)

9.02.030 Fire hydrants and fire protection.

(a) Definitions. The definitions following are a part of this chapter. Whenever the following terms are used in this chapter, they shall have the meaning as defined. The definitions given shall not necessarily be limited to the meaning given herein whenever the term is one of common usage in which case the definition shall be augmented by the accepted use of the term.

(1) Approving authority--the approving authority for the several conditions of this chapter shall be the mayor, City Council, utilities superintendent of the City of Duvall or their appointee/appointees.

(2) Fire department--the term "fire department" shall mean the fire authority normally responsible for fire protection in the area.

(3) Water authority--shall mean the water department, water district or other body legally supplying water to fire hydrants in the area.

(4) U.L.--shall mean Underwriters Laboratories, Inc.

(5) U.B.C.--shall mean the Uniform Building Code of King County as adopted by the City of Duvall.

(6) Public hydrant--a public hydrant is a fire hydrant so situated and maintained to provide water for fire fighting purposes without restriction as to use for that purpose. The location is such that it is accessible for immediate use of the fire authority at all times.

(7) Private hydrant--a private hydrant is a fire hydrant so situated and maintained to provide water for fire fighting purposes with restriction as to use. The location may be such that it is not readily accessible for immediate use of the fire authority for other than certain private property.

(8) Flush type hydrant--a flush type hydrant is a hydrant installed entirely below grade.

(9) Fire flow--shall mean the flow of water available for fire fighting a fire at a specific building or within a specific area.

(10) Commercial and industrial properties-- Commercial and industrial properties shall include, but not necessarily be limited to retail and wholesale store, warehouses, service stations, manufacturing facilities, garages, theaters, hotels, motels, restaurants, bars and taverns, banks, showrooms, barber and beauty shops.

(11) Institutional Properties--Institutional properties include, but are not necessarily limited to, places of worship, private schools, parochial schools, institutions of higher learning, public and private hospitals, nursing homes, lodges and fraternal orders, unless the structure contains a function of a commercial or industrial nature.

(12) Public Properties--Public properties shall include civic buildings, public schools, playgrounds, public parks and appurtenances.

(13) Residential Properties--Residential properties are those intended for human habitation.

Whenever the words "single-family dwelling" are used herein, they shall also include the structure known as a "duplex" two-family dwelling. A residence constructed and equipped for occupancy by more than two families shall be defined as a multifamily dwelling or high density dwelling, the terms

being identical in meaning.

(b) Building Served By Hydrants. All buildings constructed in the City of Duvall or areas served by the Duvall water system shall be served by fire hydrants installed as required by the ordinance codified in this section. Such fire hydrants shall be served by the city or by other adequate means as approved by the city engineer and fire department.

(c) Exceptions. The following buildings not served water by the city, are exempt from the requirements of this the ordinance codified in this section.

(1) Detached single-family dwellings.

(2) Other buildings not exceeding twenty-five hundred (2500) square feet in floor area.

Buildings in areas with existing hydrants spaced not more than one thousand (1000) feet apart except as required in Section 9.02.030(g) of the ordinance codified in this section.

(d) Testing of Fire Hydrants. All fire hydrants shall be subject to testing and inspection by the fire department.

(e) The installation of flush type hydrants is prohibited.

(f) Installation of Fire Hydrants. Standard fire hydrants shall be installed as follows: Maximum spacing between fire hydrants is six hundred (600) feet. In addition, hydrant spacing shall be predicated upon hydrants being located at street intersections. Public buildings, including schools, located in single-family residential areas shall be classified as commercial for fire protection services.

(g) Size of Main for Hydrants. All hydrants newly installed in a single-family residential area shall be supplied by not less than eight inch circulating mains. Dead-end mains supplying fire hydrants must be at least eight inches in diameter, except hydrant leads up to fifty (50) feet long may be six inches in diameter.

(h) Application of Section 9.02.030. This part applied to all buildings located so that a portion is more than two hundred (200) feet from a street property line as measured by vehicular travel.

Exception: Detached single-family dwellings.

(1) Buildings having required fire flows of less than two thousand five hundred (2500) gpm, may have fire hydrants on one side of the building only.

(2) Then the required fire flow is over two thousand five hundred (2500) gpm, the fire hydrants shall be served by a main which loops around the building or complex of buildings and reconnects back into the distribution main.

(3) The number of fire hydrants shall be determined on an average spacing of three hundred (300) feet computed on an imaginary line parallel to and not less than fifty (50) feet from the structure. All hydrants are to be accessible to fire department pumpers over roads capable of supporting such fire apparatus. The city engineer shall determine the location of the fire hydrants depending on utility, topography and building location. Hydrants shall be a minimum of fifty (50) feet out from the building, minor deviations may be granted.

(4) The lead from the service main to the hydrant shall be no less than six inches in diameter. Any hydrant leads over fifty (50) feet in length from service to the hydrant shall be no less than eight inches in diameter. The provisions of this part shall apply without exception and regardless of the size of the service main.

(i) Requirements for Fire Hydrants. Standard hydrants shall have: Two two and one-half inch hose outlets and one four inch I.D. pumper port outlet. All outlet ports shall be approved by the fire department having jurisdiction, and have city of Seattle thread. Main valve opening shall be no less than five inches. Hydrants shall meet current A.W.W.A. standards for public hydrants and meet U.L. standards for private hydrants.

(j) Additional Requirements for Fire Hydrants. Fire hydrants shall be installed to meet sound engineering practices. There shall be an auxiliary gate valve installed between the service main and the hydrant sufficient to permit repair and replacement of the hydrant without disruption of water service. The location of all valves and fire hydrants installed shall be properly and accurately marked on identifiable plans or drawings, two copies of which shall be furnished the city engineer.

(k) Setting Hydrants. Hydrants shall stand plumb, be set to the finished grade with the lowest outlet of the hydrant no less than eighteen (18) inches above grade and no less than thirty-six (36) inches of clear area about the hydrant for clearance of a hydrant wrench on all outlets and on the control valve. The pumper port shall face the street. Where the street cannot be clearly defined or recognized, the port shall face the most likely route of approach and location of the fire truck while

pumping as determined by the city engineer.

(l) Dead End Lines. Fire hydrants shall be installed at the ends of dead end lines which are more than three hundred (300) feet in length. Said hydrants may later be moved to conform to standard spacing requirements when the main is again extended, under supervision of the superintendent.

(m) Blow-off Valves. Blow-off valves shall be installed at the end of all dead-end lines less than three hundred (300) feet in length unless a fire hydrant is provided at that point. A blow-off assembly shall conform to Duvall standard specifications.

(n) Installation Required. The installation of fire hydrants in accordance with this Ordinance shall be required of the owner and/or developer of any future business, commercial, institutional or industrial facility, dwelling or dwelling development.

(o) City to Serve. All fire hydrants installed as required by this Ordinance shall be served by the City of Duvall unless conditions warrant a waiver of this provision.

(p) Private Hydrants. The installation of private hydrants as defined herein shall be limited to those cases when the number of public hydrants installed under the distance provision of the ordinance codified in this section shall be insufficient in number. Private hydrants shall meet city requirements for public hydrants and shall be located as designated by the approving authority. The City of Duvall shall have the right to go upon the premises and to use the private hydrant for public purposes, including testing, flushing and emergency uses.

(q) Adequacy. All commercial, industrial, institutional and public properties shall provide adequate fire protection as prescribed in the ordinance codified in this section. As recommended by the approving authority, any or all of the above properties shall have a looped fire protection line around the property. The loop may be a part of the existing supply system. The size of the loop shall be no less than eight inches and shall be sized to the fire flows estimated according to the Washington Surveying and Rating Bureau.

(r) Obscuring Hydrants. No one shall plant any vegetation, erect any structure or perform any action which results in obstructing the view of a fire hydrant for a distance of fifty (50) feet. The owner and/or occupant of any area in which a hydrant is located shall be responsible for removing weed and tree growth from around the hydrant for a distance of not less than ten (10) feet. The purpose of this part is to maintain a clear visual area around the hydrant.

(s) Fire Hydrant Use. No water for purposes other than firefighting shall be taken from any city fire hydrant without first obtaining permission from the city water department. Applications for temporary use shall be made to the City Clerk in writing. This application to be approved by the water superintendent. The charges of Section 9.02.030(t) shall apply at the time the permit is issued.

(t) Sale of Water From Fire Hydrants. The sale of water from fire hydrants shall be through a hydrant meter or by other accurate means of measurement acceptable to the water superintendent. A deposit must be collected before permission will be granted to remove water from any fire hydrant. The amount of the deposit, along with a rental fee, and a price per hundred cubic feet, will be fixed from time to time by resolution of the City Council. The sale of water, hydrant deposit and hydrant rental charge to the state, county, or other governmental bodies shall be at the discretion of the water superintendent.

(u) Water lines for fire sprinklers shall be individually tapped and metered. The connection will include a water meter equaling the size of the supply line and shall comply with minimum backflow requirements.

All fire departments and fire districts shall be excluded from the above charges. (Ord. 903 § 1, 1999; Ord. 343 (part), 1982)

9.02.040 Water service specifications.

(a) Responsibility for Costs. Responsibility for costs of bringing water service to applicants whether inside city or outside (rural) of the corporate limits of the City of Duvall.

1. Costs for Labor and Material. All labor and material costs incurred in connecting to the Duvall water system and the water line required to convey water from the city water main to the property of the applicant/applicants, shall be borne by the property owner/owners making application for water. Upon completion of the work the applicant/applicants shall file with the City Clerk the final statement of costs, and copies of receipts for payments made on the installation of the water system, and upon verification of same, and with the signing of a water agreement (Recovery Contracts 9.02.020(2)). The ownership of the system shall be accepted by the City Council on behalf of the city,

subject to the terms of said water agreement, after a period of ninety (90) days has elapsed from the completion of the work and subject to there being no liens upon the installation. All water lines shall be put in, in accordance with the city specifications and inspection procedures set forth in this chapter.

2. Pressure Reducing Valve. A pressure reducing valve (herein referred to as a PRV) shall be required on the customer's side of the meter on all new construction, with a water hookup, inside or outside the city limits of Duvall. The size of the PRV will be determined by the water superintendent according to meter size.

(b) Water System Specifications. Water systems specifications for the water systems inside and outside the City of Duvall.

1. Property Owner Responsibility. In the event the installation of a water line shall be made by, or under the direction of, property owner/owners, the owner/owners shall be responsible for all maintenance and repairs for a period of one year from the date of the initial meter installation. No hookup shall be made unless water lines meet with city specifications and have been inspected as provided for in this chapter. The city specifications shall consist of, and conform to, the special provisions and detail specifications of A.W.W.A. Standard Specifications, as supplemented by the City of Duvall Developer Extension Manual, prepared by the development review committee.

2. Size of Mains. All distribution mains shall be eight inches, or larger, as required by the comprehensive plan, or by "Washington Survey and Rating Bureau" standards, and there shall be a fire hydrant installation as described elsewhere.

3. Plan Check. Plans shall be checked by the water superintendent and/or the city engineer. They shall determine whether the plan is adequate and conforms to the overall water system of the city water system. The tract or area to be served shall be inspected by the water superintendent.

4. Corrections. Any corrections, or additions, deemed necessary by the water superintendent and/or the city engineer, will be indicated on the proposed plan, and one copy returned to the applicant/applicants for correction of the original and resubmission with the application. The amount of any recovery contract payment and city connection charges due will also be indicated on the print returned.

5. Approval. If no corrections were required to the plans submitted, and the applicant/applicants agree to the charges indicated by the water superintendent and/or the city engineer, the application will then be submitted to the development review committee for approval.

6. Registered Engineer Required. The design and construction of the water main/mains, which are to be connected to the city water system, shall be supervised by a registered professional engineer of the state of Washington. Details and methods of construction shall conform to the Duvall Standard Specifications. Responsibility for providing line and grade, and taking measurements for as-built drawings rest with the owner/owners engineer.

7. Testing. Upon completion of construction, the mains and appurtenances shall be inspected by the water superintendent, shall be tested in accordance with Duvall Standard Specifications, and be sampled for satisfactory disinfection. The cost of this sampling shall be at the owner/owners expense.

8. As-Built Drawings. As-built drawings of the completed installation of the water main/mains to be connected to the city water system shall be submitted to the water superintendent and/or the city engineer, and be approved by him/them, before the City Council of Duvall shall consider accepting the said water main/mains. These as-built drawings shall be drawn, subject to approval of the city engineer as to quality. They shall be drawn to a scale not larger than one inch equals fifty feet, nor smaller than one inch equals one hundred feet. They must show the location of all mains, valves, hydrants and fittings, giving sizes and types of each. The distance from main/mains to property lines must also be given.

9. Conveyance to City. Upon completion of the water main/mains to be connected to the city water system, title to said main/mains, shall be conveyed to the city, together with an affidavit that there were no unsatisfied liens, or unpaid bills of any kind, for any of the materials used in construction, or installation, of said water main/mains. An affidavit must be submitted to the city from the contractor and his engineer stating that all labor used by them in connection with the installation of said water main/mains has been paid, and that they themselves have been paid in full in accordance to the contract.

10. Acceptance. When all the stipulations and requirements, as set forth in this section, have been

fulfilled, the city engineer, and/or water superintendent and the councilmember for the water of the City Council of Duvall, shall recommend to said council that the title for said main/mains, along with all franchises, permits, easements and affidavits be accepted, and that individual applications for water service from the above mentioned main/mains be considered.

(c) Water Systems, Cross Connections and Back Flow Prevention.

1. Interpretation and Intent. The regulations set out in this section are to be reasonably interpreted. It is their intent to recognize the varying degrees of hazard and to apply the principal that the degree of protection should be commensurate with the degree of hazard.

2. Conformance to Rules and Regulations. Any customer, regardless of whether residing within or without the city limits, who is now receiving water from the city system or who will in the future receive water from the city, shall comply with the rules and regulations contained in this section.

3. Organization and Conformance. Any water district, municipal organization, or other organization, which is connected to the city water supply and/or which is furnished to people or members within said district or organization, shall cause all the people or members within said district or organization as well as the district or organization itself, to comply with the rules and regulations contained in this section.

4. Definitions. Definitions as used in this section, unless the context states otherwise, the following definitions shall apply.

(A) "Air gap separation" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device, and the flood level rim of the receptacle, and shall be at least double the diameter of the supply pipe measured vertically above the flood level rim of the vessel. In no case shall the gap be less than one inch.

(B) "Auxiliary supply" means any water source or system, other than the public water supply, that may be available in the building or premises.

(C) "Back flow" means the flow, other than the intended direction of flow, of any foreign liquids, gases, or substances, into the distribution system of a public water supply.

(D) "Back flow prevention device" means a device to counteract back flow pressures or prevent back siphonage.

(E) "Back pressure" means back flow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the supply pressure.

(F) "Back siphonage" means a form of back flow due to a negative or subatmospheric pressure within a water system.

(G) "Cross connection" means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other device which contains, or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of back flow, bypass arrangements, jumper connections, removable sections, swivel or change over devices, and other temporary, or permanent, devices through which, or because of which, back flow could occur.

(H) "Customer" means any person, family, business, corporation, partnership or firm connected to the city water supply.

(I) "Double check valve assembly" means an assembly composed of two single, independently acting check valves, including tightly closing shut-off valves located at each end of the assembly and suitable connections for testing the water tightness of each check valve.

(J) "Reduced pressure principal back flow prevention device" means a device incorporating two or more check valves and an automatically operating differential relief valve, located between the two checks, two shut-off valves, and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two check valves, less than the pressure on the public water supply side of the device. At the cessation of normal flow, the pressure between the check valves shall be less than the supply pressure. In the case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere, thereby providing an air gap in the device.

5. Cross-connection Prohibited--Exceptions. Except as provided in Section 9.02.040(5), all cross-connections, as defined in Section 9.02.040(c)(G), whether or not such cross-connections are

controlled by automatic devices such as check valves or by hand operated mechanisms such as a gate valve or stopcocks, are prohibited.

6. Cross-connection--Failure To Discontinue. Failure on the part of persons, firms, or corporations to discontinue the use of any and all cross-connections, will be sufficient cause for the discontinuance of the public water service to the premises on which the cross-connection exists.

7. Cross-connection--Removal. The water superintendent shall, in cooperation with the health officer or the local plumbing inspector, make periodic inspections of the premises served by the public water supply to check for the presence of cross-connections. Any cross-connection found in such inspection shall be ordered removed by the responsible agency or authority. If an immediate hazard to health is caused by the cross-connection, water service to the premises shall be discontinued until it is verified that the cross-connection has been removed.

8. Back Flow Prevention Device--Installation. Back flow prevention devices shall be installed at the service connection or within any premises wherein the judgment of the water superintendent, the nature and extent of the activities, or the materials used in connection with the activities on the premises, or materials stored on the premises, would present an immediate and dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the back flow device is required to be installed. This shall include, but not be limited to, the following situations.

(A) Premises having an auxiliary water supply, unless the quality of the auxiliary supply is in compliance with the rules and regulations of the state.

(B) Premises having internal cross-connections that are not correctable, or intricate plumbing arrangements which make it impractical to ascertain whether or not a cross-connection exists.

(C) Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency, or at sufficiently short notice, to assure that cross-connections do not exist.

(D) Premises having a repeated history of cross-connections being established, or reestablished.

(E) Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.

(F) Premises where material of a toxic or hazardous nature are handled such that if back siphonage should occur, a serious health hazard may result.

(G) The following types of facilities will fall into one of the above categories where a back flow prevention device shall be installed at these facilities as set forth in this section, unless the water superintendent determines no hazard exists:

1. Hospitals, mortuaries, clinics;
2. Piers and docks;
3. Laboratories;
4. Sewage treatment plants;
5. Food and beverage processing plants;
6. Chemical plants using a water process;
7. Petroleum processing or storage plants;
8. Radioactive material processing plants or nuclear reactors;
9. Others specified by the secretary of the department of social and health services;
9. Back Flow Prevention Device--Degree of Hazard. The type of protective device required shall depend on the degree of hazard which exists, as follows:

(A) An air gap separation or a reduced pressure principle back flow prevention device shall be installed, where the water supply may be contaminated with sewage, industrial waste of a toxic nature or other contaminant which would cause a health or system hazard.

(B) In the case of a substance which may be objectionable but not hazardous to the health, a double check valve assembly, air gap separation, or a reduced pressure principle back flow prevention shall be installed.

10. Back Flow Prevention Device--Location. Back flow prevention devices required in this section shall be installed at the property line of the premises or at the meter, where meters are used, or at a location designated by the secretary of social and health services, or by the water superintendent.

11. Back Flow Prevention Device--Installation. Back flow prevention devices required in this section shall be installed under the supervision of, and with the approval of the city.

12. Protective Device--Approval Required. Any protective device required in this section shall be a

model approved by the secretary of the department of social and health services. A double check valve assembly or a reduced pressure principle back flow prevention device will be approved if it has successfully passed performance tests of the University of Southern California engineering center or other testing laboratories satisfactory to the secretary of the Department of Social and Health Services.

13. Back Flow Preventions Device--Inspection, Tests. Back flow prevention devices installed under this section shall be inspected and tested annually, or more often where successive inspections indicate failure. The devices shall be repaired, overhauled, or replaced whenever they are found to be defective. Inspection, tests, repairs and records thereof shall be done under the city's supervision.

14. Failure to Comply--Termination. Failure of any customer, or any district, or any organization to cooperate in the installation, maintenance, testing of back flow prevention devices, or the requirements of an air gap separation, shall be grounds for the termination of the water service at a point where such flow, which is to be terminated by the city, would best prevent possible contamination of the public water supply.

(d) Variances.

1. No variance from the minimum requirements outlined in the ordinance codified in this section shall be granted by the development review committee until the following have been complied with:

(A) Application for Variance. The owner/owners, requesting a variance shall make written application to the development review committee setting forth the name/names of the owner/owners of the properties in a plat of the properties, and a dimensioned sketch showing the proposed installation. The application shall state the reasons for requesting the variance and the agreement of the applicants to pay all costs and expenses incurred by the city in processing the application.

(B) Filing Fee. The application for a variance shall be accompanied by a fee, which shall not be refundable, but which shall be applied to the costs and expenses of the city in processing the application. The amount of this fee will be fixed from time to time by resolution of the City Council.

(C) Factors to be Considered. In considering the application for variance, including temporary lines, the development review committee shall consider the following factors:

1. Whether or not the variance would have an adverse effect upon the accomplishment of the comprehensive water plan;

2. Whether or not the proposed variance is consistent with the comprehensive water plan;

3. Whether or not there would be adverse effects upon the adjoining or neighboring properties;

4. Any benefits to the city generally resulting from the proposed variance;

5. Whether or not the applicant/applicants will be deprived of a use of his property/properties enjoyed by other property owners similarly situated;

6. The minimum standards for public water systems, as published by the Division of Social and Health Services, Department of Health of the State of Washington shall be met.

(D) The city may require as a condition of granting the variance:

1. The applicant/applicants must agree to replace the temporary line or substandard improvement with facilities meeting city standards within two years or less without the right of reimbursement.

2. A bond or other adequate security shall be required in the amount of two times the current estimated cost, said bond running to the city and the adjoining property owners.

3. If an intermediate property owner desires to install a permanent line, the temporary line shall be replaced and the properties benefitted by the temporary line shall pay one half of the cost of the permanent line installation and a lien shall be filed in favor of the city and adjoining property owners to insure payment prior to water hookup.

(E) Informing City Council. Before any variance may be granted, the development review committee must inform the City Councilmember in charge of water, and the Mayor, of the pending application for variance.

9.02.050 Water services outside the city limits.

(a) Intent to Annex.

1. No water service shall be provided to any property contiguous with the city limits of the City of Duvall until the property is annexed to the city. In the case of any owner of property not contiguous with the city limits of the City of Duvall, who desires to connect to the city water system, the owner will sign a statement of intention to annex to the city and shall agree in said statement to petition for

and consent to such annexation immediately upon any request by the city at any date after the owner's property becomes contiguous with the city limits or becomes contiguous with property of which an annexation request has been filed with the City of Duvall. This statement shall recite that it is binding upon the owner, his/her heirs, successors and assigns, and shall be construed as a covenant running with the land. The form of this statement must receive the approval of the city attorney, and shall be recorded in the official records of the King County Auditor at the expense of the owner prior to connection of the subject property to the city water system. Any reasonable attorney fees connected with this statement must also be paid by the owner prior to connection of the subject property to the city water system.

2. Facilities owned and managed by the federal, state, county, and local school, fire and library districts, are excluded from the provisions of Section 9.02.050(a)1.

(b) Temporary Lines.

1. All lines constructed outside the city limits of Duvall must conform to "Duvall standard specifications" as outlined elsewhere in this chapter. Applicants outside the city may request a variance from the standard specifications under Section 9.02.040(d). (Amended Ord. 671, 1993)

2. No new connections shall be permitted to existing lines smaller than four inches, outside the city limits.

9.02.060 City not responsible.

A. Discontinuance of Service.

The city reserves the right at any time, without notice, to shut off the water supply for repairs, extensions, nonpayment of rates, for any reason relating to the health, safety, or welfare of the residents of Duvall or others served by the city water system, and for any noncompliance by any property owner served by the city water system relating to obligations incumbent upon said owner in return for water service under the ordinance codified in this chapter and the city shall not be responsible nor liable for any damage such as bursting of boilers supplied by direct pressure; the breaking of any pipes or fixtures; stoppage or interruption of water supply; or any damage resulting from the shutting off of water.

9.02.070 Prohibited acts.

A. Water Supply to Additional Premises. Permission required. It is unlawful for any person whose premises are furnished with city water to furnish water to additional premises unless he shall first make application in writing to do so at the city office and shall be granted permission to do so.

B. Water Supply to Additional Premises—Double Charge. Water supply to additional premises double charge—charge for shutting off and turning on. When additional premises are connected without the application prescribed in Section 9.02.070(a) such premises may be charged double the rate for the time they are in use and the service may be shut off by the utilities superintendent. In case the water is turned off as provided in this section, the same shall not be turned on until all charges against said premises including a turn on/turn off charge as provided by resolution of the City Council, have been paid in full.

C. Unlawful Connections to Mains. It is unlawful for any person to attach or detach from any water main, any service pipe or other connection through which water is supplied by the city or to interfere in any manner with such pipes or connections without first having obtained written permission from the utilities superintendent.

D. Unlawful Connections to Hydrants. It is unlawful for any person to connect with or remove water from any hydrant owned or used by the city, provided however that the provisions of this section do not apply when permission has been granted to do so under Section 9.02.030(a)1 of the ordinance codified in this section.

E. Damage to Waterworks Property. It is unlawful for any person, unless duly authorized by the utilities superintendent, to disturb, interfere with or damage any water main, water pipe, machine, tool, meter, fire hydrant, or other appliances, buildings, improvements, lawns, grass plots, flowers, vines, bushes or trees belonging to or used in connection with or under the control of the municipal water supply system of the city.

F. Obstructing Fire Hydrant. It is unlawful for any person to obstruct access to any fire hydrant by placing around or thereon any vegetation, stone, brick, lumber, dirt or other material, or to willfully or carelessly injure the same.

G. Unlawful to Turn On Water Meter After Turned Off. It shall be unlawful for any person to turn on a city water meter after it has been turned off by the city for any reason.

H. Damages—Additional Damages. The City of Duvall shall be reimbursed for all time expended by city officials or employees in attending to violations of subsections A through G of this section, and for any and all costs and materials incurred in remedying any problems occurring due to such violations. This reimbursement shall be due within ten (10) days after billing by the city. If the reimbursement is not paid within the ten (10) day period, then the amount of the reimbursement shall commence accruing interest at the maximum statutory rate. In the event the city must bring legal action to collect the reimbursement charges, the city in addition to such charges shall recover its attorney's fees and the other costs incurred in connection with such collection. In the case of any property owner who violates subsections A through G of this section, with the violation being in connection with the service of water to the property of the owner, then the reimbursement charges, when unpaid as defined above, shall constitute a lien against the property to which city water service is provided, and shall be processed in the manner provided in Section 9.02.010(B).

The reimbursement charges provided in this section shall be additional to any other charges to which the city is entitled under the ordinance codified in this chapter, and shall be additional to the double water rate provisions of Section 9.02.010(B).

I. Prohibited Acts Considered Misdemeanors. The prohibited acts referred to in subsections A through H of this section will be considered misdemeanors, and will be punishable by maximum ninety (90) days in jail, and/or a fine of five hundred dollars (\$500.00).

J. The prohibited acts set forth in subsections A through H of this section shall also be considered civil infractions. Civil infractions under this section shall be processed as set forth in Chapter 2.24. It shall not be necessary for the code enforcement officer to issue a notice of violation prior to issuing a notice of civil infraction for violations of this section. (Subsection J added in Ord. 839, 1997)

9.02.080 Severability.

Severability. If any provision of the ordinance codified in this chapter or its application to any person or circumstance is held invalid, the remainder of the ordinance codified in this chapter or the application of the provisions to other persons or circumstances is not affected.

9.02.090 Adoption of comprehensive plan.

The City of Duvall adopts by reference the comprehensive water system plan prepared by RH2 Engineering, Inc. dated November 22, 2004 and on file with the City Clerk. (Ord. 1004 § 1, 2004: Ord. 996 § 1, 2004: Ord. 227, 1977)

Chapter 9.03 WATER USAGE RESTRICTIONS

9.03.010 Authority.

In case of shortage of water the Department of Public Works is authorized to impose water use restrictions in order to efficiently safeguard the safety and health of the general public or to provide for the public convenience. The use of water for irrigation, cooling, or other uses may be forbidden, restricted or regulated and such regulations may be made effective as to all customers. Rationing may be imposed during any shortage of water, either in lieu of or in addition to other measures hereby authorized.

9.03.020 Power.

The Director of Public Works shall conduct public education efforts regarding the benefits and necessity of conservation by the public, and is authorized to promulgate such rules and regulations as may be necessary to implement water use restriction. The Director of Public Works is further authorized to make exceptions to such restrictions in specific cases as he finds reasonable (such as, but not limited to, watering newly seeded or sodded lawns, alleviating unnecessary economic hardship to commercial or industrial activities, or preventing possible damage to health, safety or welfare).

9.03.030 Penalty.

It is unlawful for any person to violate water use restrictions. In addition to other lawful remedies, the Director of Public Works is authorized to impose a surcharge of fifty dollars (\$50.00) for each day a customer's water usage practices exceed water conservation restrictions as provided for in this chapter. The surcharge will be added to and become part of the water bill for the customer in addition to any service rate amount. Prior to the imposition of a surcharge, the Public Works Department shall send a notice to the billing address or deliver or post a notice at the service address advising of the customer's water usage practices in excess of mandatory water shortage restrictions and advising that a surcharge may be imposed for any further violations.

9.03.040 Enforcement.

A. Each police office of the city and the director or any employee of the City of Duvall Public Works Department and Building Department shall have the authority to enforce the provision of this chapter.

B. In addition to penalties otherwise provided, the Director of Public Works is authorized to install a water restricting device on the waterline or line serving any person who commits a second or subsequent violation of any of the provisions of this chapter. Alternatively, after such notice of a violation as may reasonably be given based on the circumstances, the Director of Public Works may cause water service to be terminated for subsequent or continuing violation of water conservation restrictions.

9.03.050 Severability.

If any section, subsection, sentence, clause, phrase, part or portion of this chapter is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such decision shall not affect the validity of the remaining portion of this chapter. (Ord. 573, 1990)

EXHIBIT B

Chapter 9.04 SANITARY SEWER UTILITY*

9.04.010 Definitions.

Unless the context specifically indicates otherwise, the meaning of the terms used in this chapter shall be as follows:

"Building drain" means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five feet outside the inner face of the building walls.

"Building sewer" means the extension from the building drain to the public sewer or other place of disposal.

"Garbage" means solid wastes from the preparation, cooking, and dispensing of food, and from the handling, storage, and sale of produce.

"Industrial wastes" means the liquid wastes from industrial process as distinct from sanitary sewage.

"Natural outlet" means any outlet into a watercourse, pond, ditch, lake or other body of surface or ground water.

"Properly shredded garbage" means the wastes from the preparation, cooking, and dispensing of food that has been shredded to such degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch in any dimension.

"Public sewer" means a sewer in which all owners of abutting properties have equal rights, and is controlled by public authority.

"Sanitary sewer" means a sewer which carries sewage and to which storm, surface, and ground waters are not intentionally admitted.

"Sewage" means a combination of the water-carried wastes from residences, business buildings, institutions, and industrial establishments.

"Sewage treatment plant" means any arrangement of devices and structures used for treating sewage.

"Sewer" means a pipe or conduit for carrying sewage.

"Suspended solids" means solids that either float on the surface of, or are in suspension in water, sewage, or other liquids; and which are removable by laboratory filtering.

"Watercourse" means a channel in which a flow of water occurs either continuously or intermittently. (Ord. 209 (part), 1976)

9.04.020 Use of public sewers required.

- A. It is unlawful for any person to place, deposit or permit to be deposited in any unsanitary manner upon public or private property within the city, or in any area under the jurisdiction of the city, any human or animal excrement, garbage, or other objectionable waste.
- B. It is unlawful to discharge to any natural outlet within the city, or in any area under the jurisdiction of the city, any sanitary sewage, industrial wastes, or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this chapter.
- C. Except as herein provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of sewage.
- D. The owner of each house, building, or property used for human occupancy, employment, recreation, or other purpose, situated within the city and abutting on any street, alley or right-of-way in which there is now located or may in the future be located a public sanitary or combined sewer of the city, is hereby required at his/her expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this chapter, within ninety (90) days after date of official notice to do so, provided that said public sewer is within one hundred (100) feet of the property line; provided, however, such connection shall not be required prior to one year from the acceptance of the city's sewage treatment plant. If any owner fails, refuses or neglects to so connect to the public sewer within said ninety (90) day period, then thereupon the city may post said structure and prohibit occupancy thereof until such time as such

connection has been made; furthermore, the city may cause any existing water meter to be disconnected or removed until such time as the connection to the public sewer has been accomplished at which time any such water meter shall be reconnected or re-installed as the case may be. (Ord. 209 (part), 1976)

9.04.030 Building sewer permits.

A. No unauthorized person shall uncover, make any connections with or openings into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Public Works Superintendent or his/her duly authorized representative. There shall be three classes of building sewer permits:

1. For residential service;
2. For commercial service;
3. For industrial service.

B. In each case the owner or his/her duly authorized agent or representative shall make application in writing on a special form furnished by the city for said purposes. The permit application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the public works superintendent or his duly authorized representative. The permit and inspection fees shall be adopted by resolution and governed by the provisions of Section 1.04.120 of this code. The minimum fee shall be paid to the city at the time the application is filed.

C. Permit applications shall be filed with the Public Works Superintendent with the following information:

1. Owner's name;
2. Address to be served;
3. Owner's mailing address;
4. Side sewer contractor's name and side sewer license number;
5. Legal description of property to be served;
6. All outside dimensions of building to be served;
7. Location of buildings on property to be served;
8. Purpose of building;
9. Full course of the proposed sewer.

D. No work shall be commenced until the permit has been issued. The permit card must be posted on the job. Permits may be issued to the owner or occupant of any property and the owner or occupant need not employ a licensed side sewer contractor to perform the work if the owner or occupant employ another person to make the installation of the side sewer, it must be a licensed side sewer contractor and such contractor shall secure the permit. All side sewer contractors must show their state contractor's license card to the Public Works Superintendent or his representative prior to the granting of the permit. (Ord. 831, 1997; Ord. 294; Ord. 209 (part), 1976)

9.04.040 Independent sewers--Cost.

A separate and independent building sewer shall be provided for every building; except where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer.

Old building sewers may be used in connection with new buildings only when they are found, on examination and tests by the Public Works Superintendent, to meet all requirements of this Ordinance.

All costs and expense incident to the installation and connection of the building sewer shall be borne by the owner or applicant of the premises in question. The owner shall indemnify the city against any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer. Any connection to a cesspool or similar installation shall be removed, direct connection from the house to the public sewer shall be made, and the cesspool or similar installation shall be disinfected and filled with fresh earth.

9.04.050 Specifications for building sewers.

All materials and workmanship in connection with the installation of any building sewers shall be as

required by standard plans and specification of the City of Duvall.

Pipe may be cast iron, WWP 401, concrete ASTM C 14, asbestos cement WPOA SS (ACSP); plastic A.B.A. or P.V.C. when installed as per manufacturer's specifications. (Asbestos cement cast iron with approved rubber gaskets or approved plastic pipe shall be used wherever the side sewer is below the high water table as established by the Public Works Superintendent).

All excavations required for the installation of a building sewer shall be open trench work unless otherwise approved by the Public Works Superintendent. Pipe laying and back fill shall be performed in accordance with ASTM specification C12-19 except that no back fill shall be placed until the work has been inspected.

The size and slope of the building sewer shall be subject to the approval of the Public Works Superintendent, but in no event shall the diameter be less than four inches (4"), except in the case where two (2) buildings are served, in which case the diameter shall not be less than six inches (6") below the second connection. The minimum slope of the sewer pipe shall be not less than two (2%) percent and shall be measured over a minimum length of thirty inches (30") at each checkpoint. If the minimum grade cannot be obtained and the Duvall Public Works Superintendent approves a connection at a lesser grade, a document approved by the City shall be signed by the recorded owners and shall be notarized and recorded with the County Auditor. This document shall release the City of Duvall from all future claims for damages due to this connection and will be referred to as a "Grade Release." The Grade Release shall be procured before the pipe is laid if there is any doubt about securing proper grade. If found lacking in grade upon inspection, the Grade Release shall be recorded before any pipe is backfilled.

After approval and recording of location by the Public Works Superintendent, backfill of selected material shall be carefully tamped around and over the pipe crown to a minimum depth of twelve inches (12") so as not to damage pipe or joints. This back fill will contain no rocks over one inch (1") diameter, frozen chunks, wood or other deleterious material. The balance of the back fill on the City of Duvall property right-of-way shall be placed in twelve-inch (12") tamped layers. (In certain soil conditions, water settlement may be approved if requested.) This balance of back fill will contain no rocks over six inches (6") in diameter, frozen chunks, wood or other deleterious material. Finish with six-inch (6") minimum of one and one-half inch (1 1/2") minus gravel in traveled roadway for temporary surfacing.

Pipe joints shall prevent infiltration in excess of City specifications. All joint materials shall be previously approved by the Public Works Superintendent.

(a) Cement mortar joints will not be acceptable.

(b) Rubber gaskets of approved type, manufactured from oil resistant synthetic rubber stock, shall be used to join all non-metallic pipe except where specific prior approval for other type or types of joints has been obtained from the Public Works Superintendent.

(c) Lead for cast iron bell and spigot pipe jointing shall be commercial grade manufactured from long fiber asbestos, cross laminated or woven and shall be suitably impregnated. Bolts and nuts shall be of best commercial grade machine bolts, American Standard Regular.

(d) Jointing materials of approved type shall be installed in strict accordance with their manufacturer's specifications.

(e) Asbestos cement pipe cast iron pipe with approved rubber gaskets, or approved plastic pipe shall be used in all cases where installations are below high water mark.

(f) Connections from cast iron pipe to concrete pipe shall be made in an approved manner. Joints shall be installed in accordance with manufacturer's recommendations.

The pipe run and bedding requirements are as follows:

(1) Changes in line or grade shall be made with wyes.

(2) No 90 degree bends, consecutive 45 degree bends or tees will be allowed.

(3) When laying around a corner, a wye and bend (maximum 45 degree) combination shall be used with the end of the wye left as a cleanout.

(4) Increases or wyes shall be used when changing the sizes of pipe.

(5) No grafts on four-inch (4") or six-inch (6") pipe shall be allowed.

(6) Pipe shall be laid on firm bedding and in a dry trench. Rock shall be excavated to three-inch (3") minimum below grade, and the trench back-filled to grade with suitable material, such as sand or moist earth firmly tamped in place or pea gravel.

(7) Sewer pipe shall not be laid closer than two and one-half (2 1/2') from the foundation wall, and if

there is no foundation wall, then the outer line of any footings, pilings, building supports or porch shall be considered the foundation wall.

(8) All side sewers sixty feet (60') or shorter shall be four inches (4") or larger. (9.04.050 (8)-- (11) amended by Ord. 364, 1983)

(9) All side sewers two hundred feet (200') or shorter shall be six inches (6") or larger and shall have a cleanout installed at its termination point.

(10) All side sewers longer than two hundred feet (200') shall be constructed as mainline additions to the sanitary sewer systems, eight inch (8") pipe side deeded to the City for operation and maintenance on a public easement or right of way.

(11) All eight inch (8") sewer mains shall terminate with an approved clean-out if the length is less than two hundred feet (200'). If the length is greater than two hundred feet (200') it shall terminate in a manhole.

9.04.060 Inspection.

The applicant for the building sewer permit shall notify the Public Works Superintendent when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the Public Works Superintendent or his/her representative. All sewer pipe and fittings shall be kept uncovered and protected until inspected and approved by the Public Works Superintendent. An accurate "as-built" drawing of the side sewer, indicating location and depth of cleanouts, pipe size, and other details, must be supplied by the person installing the side sewer prior to acceptance.

Building sewers shall be tested as follows or by other methods approved by the Public Works Superintendent. Building sewers shall be tested for visible leakage before backfilling by inserting a removable plumber's plug at the lower end of the line and filling the line with water to its highest point. The contractor shall make this test before calling for inspection so that the inspector can observe and approve in one visit. A tee or wye at the property line shall be provided in the sewer for insertion of the plug, to be capped tightly and secured against back pressure or infiltration upon completion of the test.

9.04.070 Precautions while building.

All excavations for building sewer installation shall be guarded with barricades and lights and such other precautions as are reasonably adequate to protect the public from accident and injury. Streets, sidewalks, parkways and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City. During the course of the work, the following restrictions shall apply:

- (a) Gutters along the curb must be kept open for drainage at all times during construction.
- (b) All timbers and lumber must be removed from the excavation before backfilling.
- (c) All improved streets are to be kept as free of mud as practicable and are to be restored to their original condition. Special care should be taken in stockpiling material in graveled and oiled streets to facilitate adequate restoration. Where excavated material is of a muddy consistency, an adequate depth below surface of roadway shall be left to be backfilled by the contractor with crushed rock or similar materials, so as to prevent a "muddy" or "chuck hole" condition.

A surety bond in an amount deemed sufficient and determined by the Public Works Superintendent, but in no event less than One Thousand Dollars (\$1,000.00), shall be furnished and deposited with the City to indemnify the City against any loss, damage, liability in connection with such sewer work. If the work is not properly performed or properly completed and the owner fails to correct or complete the required work within five (5) days after written notice is mailed to the owner, or in the case an emergency, without notice to the owner, the City may perform such work as may be necessary and all costs and expenses incurred by the City shall be charged to the owner.

9.04.080 Discharge restrictions into a sanitary sewer.

No owner shall discharge, or cause to be discharged, any storm water, surface water, roof runoff, subsurface drainage, cooling water or unpolluted industrial process waters into any sanitary sewer owned by the City.

Also, no owner shall discharge, or cause to be discharged into any sanitary sewer, the following:

- (a) Any liquid or vapor having a temperature higher than 150 F.

- (b) Any water or waste which may contain more than one hundred (100) parts per million by weight of oil, fat or grease.
- (c) Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas.
- (d) Any garbage that has not been properly shredded to a size of one-half (1/2") in any direction.
- (e) Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other solid or viscous substance capable of causing obstruction to the flow in the sewers or other interference with the proper operation of the sewage treatment system.
- (f) Any waters or wastes having a "pH" lower than 5.5 or higher than 9.0 or having any other property capable of causing damage or hazard to structures, equipment or personnel of the sewage system or to the sewage treatment process.
- (g) Any waters or wastes containing a toxic or poisonous substance in a sufficient quantity to injure or interfere with any sewage treatment process or constitute a hazard to humans or animals or create any hazard in the receiving waters of the sewage treatment system.
- (h) Any waters or wastes containing more than 350 parts per million by weight of suspended solids.
- (i) Any noxious or malodorous gas or substance capable of creating a public nuisance.
- (j) A five (5) day Biochemical Oxygen Demand greater than 300 parts per million by weight.
- (k) Any waters or wastes having an average daily flow greater than two percent (2) of the average daily sewage flow of the Public Sewage System into which the waters or wastes are about to be discharged.

9.04.090 Sewer charges.

The monthly rates and charges for sewer disposal service shall be set by resolution. The rates and charges shall be reviewed annually, in the month of December, and shall be adjusted to reflect changes in the Consumer Price Index, all urban customers, for metropolitan Seattle for the previous twelve (12) month period ending in July of the current year. (§ 9.04.090 amended by Ord. 575, 1990 and Ord. 631, 1991)

9.04.100 Billings and collections.

"User" as stated herein means a person, firm, corporation, entity, user, owner or occupant of a building, property, or premises using or having available for use sewer service connected to the sewer system of the City of Duvall, and also means the person or entity responsible for paying for sewer charges as shown by the records of the City of Duvall.

All bills for sewer disposal service shall be as set forth in Ordinance No. 209 or as the same may be amended from time to time. Charges for sewer disposal services remaining unpaid at the close of business on the twentieth day of the month in which billed (or the close of the next regular business day if the twentieth should fall on a Saturday, Sunday, or a legal holiday) shall be considered delinquent and shall call for a delinquent charge of ten (10) percent of the total combined utility amount due. Any checks returned due to insufficient funds shall incur a penalty in an amount to be fixed from time to time by resolution of the City Council. Said delinquent charges and penalties shall become a lien upon the real property so furnished as provided by Washington state law, and shall be enforced as a real property lien and shall be superior to all other liens and encumbrances whatsoever, except those for general taxes and local and special assessments, and concurrently enforced by discontinuing and shutting off city water services as provided herein and as provided by Washington state law. If the delinquent charges and penalties remain unpaid at the close of business on the fourteenth day of the succeeding month (or the close of the next regular business day if the fourteenth should fall on a Saturday, Sunday, or a legal holiday), a notice shall be mailed to the user setting forth the lien described above and further informing that water service will be discontinued and shut off following five working days from the date of the notice unless all delinquent charges and penalties prior to the discontinuance of water service as provided herein. Water service will not be resumed until all delinquencies and penalties, together with a water turn-on fee of thirty-five dollars (\$35.00), have been paid.

It shall be the obligation of the user of a building, property, or premises using or having available for use sewer service connected to the sewer system of the City of Duvall to provide to the City of Duvall a mailing address for the purposes of billing for sewer disposal services and for the notice above-described. No water service shall be provided to any premises unless such a billing address is provided. In the event sewer disposal services are being provided to any premises and a billing

address is not provided, then the City of Duvall will post the premises with a notice requiring that such address be provided. This notice shall state that water service will be discontinued and shut off following five working days from the date of the notice unless a mailing address is provided within said period of time. The notice will also inform official in charge of billings to determine the accuracy of any delinquent charges and penalties then in existence and stated in the notice prior to the discontinuance of water service as herein provided. Service will be resumed after a billing address is provided to the City of Duvall, payment of water turn-on fees as provided herein, and payment of all delinquent charges and penalties as provided herein if applicable. Billings may be made in the name of a tenant or other occupants of the premises which are provided sewer disposal services at the mailing address provided above, but such billings shall not relieve the owner of the premises from liability for the payment of the charges for furnishing of such sewer disposal services nor in any way affect the lien rights of the city against the premises to which said sewer disposal services are furnished. Failure to receive mail properly addressed to the mailing address provided above shall not be a valid defense for failure to pay the delinquent charges and penalties. Any change in the mailing address provided above must be properly filed in writing with the office of the Utility Billing Clerk before it will become effective.

In the event the city must bring legal action to collect sewer disposal charges and/or penalties, the city shall, in addition, recover its attorney's fees and other costs incurred in connection with such collection. (Ord. 1044 § 1, 2007; Ord. 467, 1987; Ord. 209 (part), 1976)

9.04.110 General facilities charge.

A. There is imposed upon each person connecting to the Duvall sewer system payment of a sewer general facilities charge. The general facilities charge shall be made, in an amount to be determined from time to time by resolution of the City Council. Pursuant to Washington State Department of Ecology guidelines, in conjunction with the Duvall comprehensive plan, payment of the general facilities charge is required for each single-family detached dwelling unit as defined in Section 14.34.360 of this code. Provided the general facilities charge for each single-family attached (Section 14.34.350), senior citizen assisted (Section 13.34.340), multiple-family, and mixed use (Section 14.34.330), or accessory (Section 14.34.320) dwelling unit that will add wastewater to the Duvall sewer system shall be eighty-five (85) percent of the regular charge.

B. Any other development desiring to connect and add wastewater to Duvall's sewer system shall pay a hook-up charge calculated in the following manner:

1. Anticipated monthly flow shall be determined by the City Engineer based upon anticipated property use, water supply line size, and plumbing fixture count, in accordance with state and federal manuals; and
2. The amount of anticipated flow shall be converted to a ratio with the flow utilized as the basis for calculating the single family detached dwelling unit connection charge; and
3. The ratio established shall be multiplied by the current general facilities charge.

C. The sewer general facilities charge shall be collected at the time of final plat approval, or, where no plat is involved, at the time of building permit application. (Ord. 995 §§ 1, 2, 2004; Ord. 974 §§ 1, 2, 2003; Ord. 917 § 3, 2000; Ord. 901 § 1, 1999; Ord. 891, 1999; Ord. 714, 1994; Ord. 703; Ord. 632, 1991; Ord. 507 (part); Ord. 489 (part); Ord. 418, 1985; Ord. 324; Ord. 270; Ord. 209 (part), 1976)

9.04.115 Sewer equalization charge.

A. There is imposed upon the owners of properties which have not been previously assessed or charged under the city ULID No. 1, as formed by Ordinance No. 200, a sewer equalization charge in the amount calculated as follows:

The number of square feet of the property multiplied by \$.0455.

B. The sewer equalization charge shall be collected at the time of final plat approval, or, where no plat is involved, at the time of building permit application. (Ord. 917 § 4, 2000)

9.04.120 Connection to city owned sanitary sewer lines.

All connection charges for service from sanitary sewer lines owned by the city outside of the boundary of ULID No. 1 and not subject to a recovery contract shall be computed at the rate of six dollars and fifty cents per foot of frontage for all installations completed prior to January 1, 1980. For

sewer lines constructed after January 1, 1980 and not subject to recovery contracts, the connection charge shall be based on the actual construction cost per front foot. These front footage charges are declared to represent a fair pro rata share of the cost of construction for an eight inch sewer line with appurtenances, without regard to the actual size of line constructed.

Where the city has participated in a project financed by the method of "cash contributions" the connection charge shall be the fair share of the actual construction costs. Said connection charges shall not apply to premises which (1) have been previously connected without payment of connection charges, (2) are served by lines constructed for the purpose of serving said premises and donated to the city or (3) are situated on property for which connection charges have been previously paid. (Ord. 327; Ord. 209 (part), 1976)

9.04.125 Sewer installation charge.

All direct city expenses incurred by inspecting or installing the connection of a private side sewer, or other appropriate sewer, to the city-owned sewer line shall be reimbursed. The amount of city expense shall be figured by applying the city's normal adopted developer billing rates. All sewer installation charges shall be paid before the issuance of a certificate of occupancy. (Ord. 917 § 5, 2000)

9.04.130 Responsibility for maintenance.

The property owners served shall be responsible for maintenance of the building sewer. A permit shall not be required for maintenance or repairs inside the private property line, except where a change in location or arrangement is planned. Prior to making repairs, notice of repairs shall be given to the Superintendent of Maintenance where no permit is required. A regular permit shall be required for work in the public right-of-way. (Ord. 489 (part); Ord. 209 (part), 1976)

9.04.135 Civil infraction.

It shall be a civil infraction for any person, firm, corporation, business or other entity to violate the provisions of Chapter 9.04. Civil infractions under this section shall be processed as set forth in Chapter 2.24. It shall not be necessary for the Code Enforcement Officer to issue a notice of violation prior to issuing a notice of civil infraction for violations of Chapter 9.04. (Ord. 839 (part), 1997)

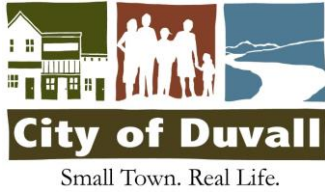
9.04.140 Severability.

If any section, sentence, clause, or phrase of this chapter or any amendments thereto shall be held to be invalid or unconstitutional 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 chapter.

Based on the explosive growth occurring in the city and upon the city's budget needs to fully capture the proportionate share of sewer capital improvement charges for property being developed in the city, the City Council declares that an emergency exists in the city with respect to the imposition of the increased sewer capital improvement fees outlined in this section. Wherefore there being a state of emergency, and this chapter being designed to protect the public health, safety and welfare of the citizens of the city, the ordinance codified in this chapter shall be immediately effective upon adoption by the City Council and approval by the Mayor. In the event a court of competent jurisdiction should declare that the ordinance codified in this chapter could not have immediate effect as outlined in this section, it shall then be effective five days after its publication as provided by law. (Ord. 507 (part); Ord. 209 (part), 1976)

APPENDIX C: City of Duvall Backflow Prevention Assembly Test Report Form

APPENDIX C: City of Duvall Backflow Prevention Assembly Test Report Form



**BACKFLOW PREVENTER
INSPECTION AND FIELD TEST**

City of Duvall
14525 Main St NE
PO Box 1300
Duvall, WA 98019
425.788.3434
FAX 425.788.0311

CoDbackflow@duvallwa.gov

ASSEMBLY MANUFACTURER	MODEL	SERIAL NUMBER	SIZE	<input type="checkbox"/> Commercial <input type="checkbox"/> Residential	
<input type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Replacement - Old Serial No.: _____		<input type="checkbox"/> Removed from Service <input type="checkbox"/> Premise <input type="checkbox"/> In-Premise			
For New Installations:					
City of Duvall Permit No.:		City of Duvall Inspector:			
Facility Name:		Contact Person:	Phone :		
Facility Address:		Email:			
Preventer Physical Location:		Hazard Type / Downstream Process:			
<input type="checkbox"/> DCVA <input type="checkbox"/> RPBA <input type="checkbox"/> PVBA <input type="checkbox"/> AG <input type="checkbox"/> OTHER _____		Water Service Restored: <input type="checkbox"/> Yes <input type="checkbox"/> No Line Pressure: _____ psi			
Record Detector Meter Reading – When Applicable USC Approved Proper Installation Proper Orientation Confined Space					
<input type="checkbox"/> Gal <input type="checkbox"/> CuFt		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Initial Test <input type="checkbox"/> Passed <input type="checkbox"/> Failed	DCVA <u>Check Valve 1</u> <input type="checkbox"/> Leaked _____ psid <u>Check Valve 2</u> <input type="checkbox"/> Leaked _____ psid	RPBA <u>Relief Valve</u> Opened _____ psid <input type="checkbox"/> Not Open <u>Check Valve 2</u> <input type="checkbox"/> Closed Tight <input type="checkbox"/> Leaked <u>Check Valve 1</u> _____ psid <u>Approved Air Gap</u> <input type="checkbox"/> Yes <input type="checkbox"/> No	PVBA / SVBA <u>Air Inlet Valve</u> Opened _____ psid <input type="checkbox"/> Not Open Opened Fully <input type="checkbox"/> Yes <input type="checkbox"/> No <u>Check Valve</u> _____ psid <input type="checkbox"/> Leaked		
	Cleaning, Repairs & Parts	DCVA <input type="checkbox"/> Cleaned <input type="checkbox"/> Repaired <input type="checkbox"/> Disc <input type="checkbox"/> O-Ring(s) <input type="checkbox"/> Spring <input type="checkbox"/> Module <input type="checkbox"/> Guide <input type="checkbox"/> Rubber Kit <input type="checkbox"/> Seat <input type="checkbox"/>	RPBA <input type="checkbox"/> Cleaned <input type="checkbox"/> Repaired <input type="checkbox"/> Disc <input type="checkbox"/> O-Ring(s) <input type="checkbox"/> Spring <input type="checkbox"/> Module <input type="checkbox"/> Diaphragm <input type="checkbox"/> Rubber Kit/Guide <input type="checkbox"/> Seat <input type="checkbox"/>	PVBA / SVBA <input type="checkbox"/> Cleaned <input type="checkbox"/> Repaired <input type="checkbox"/> Air Inlet Disc <input type="checkbox"/> Float <input type="checkbox"/> Air Inlet Spring <input type="checkbox"/> Diaphragm <input type="checkbox"/> Check Disc <input type="checkbox"/> Rubber Kit <input type="checkbox"/> Check Spring <input type="checkbox"/>	
Final Test <input type="checkbox"/> Passed <input type="checkbox"/> Failed	<u>Check Valve 1</u> <input type="checkbox"/> Leaked _____ psid <u>Check Valve 2</u> <input type="checkbox"/> Leaked _____ psid	<u>Relief Valve</u> Opened _____ psid <u>Check Valve 2</u> <input type="checkbox"/> Closed Tight <u>Check Valve 1</u> _____ psid	<u>Air Inlet Valve</u> Opened _____ psid Opened Fully <input type="checkbox"/> Yes <input type="checkbox"/> No <u>Check Valve</u> _____ psid		
Air Gap Inspection <input type="checkbox"/> Passed <input type="checkbox"/> Failed		Supply Pipe Diameter _____	" Air Gap Separation _____ "		
Remarks *					
By this signature I certify:		1. I personally inspected and field-tested the backflow assembly using field test procedures meeting WAC 246-290-490 and test equipment meeting WAC 246-292-031; or I personally inspected the air gap or AVB. 2. The information in this report is true, complete, and accurate.			
Initial Test By (Print BAT Tester Name)		BAT Company Name	BAT Phone	BAT CERT #	Date Tested
BAT Signature		Test Kit Make & Model	Serial #	VER / Cal Date**	
*Note unapproved Backflow preventer, missing defective components, repairs made, or conditions that may adversely affect assembly. **The date of the most recent field test kit verification of accuracy or calibration, whichever is most recent.					

APPENDIX D: DOH Backflow Incident Report Form

APPENDIX D: DOH Backflow Incident Report Form



**Cross-Connection Control Program
BACKFLOW INCIDENT REPORT FORM**

Note: Use this form to comply with WAC 246-290-490(8)(g).

Part 1: Public Water System (PWS) Information

PWS ID:	PWS Name:	County:
---------	-----------	---------

Part 2: Backflow Incident Information

A. Incident Identification

Incident date:	Time of incident:	Incident ID (DOH use):
----------------	-------------------	------------------------

B. Information on Premises where Backflow Originated

Name of premises:		
Premises physical address:		
City:	,WA	Zip:
Premises type: non-residential <input type="checkbox"/>	residential <input type="checkbox"/>	
Premises category/description (Table 9 category*, if applicable):		
Most recent hazard evaluation prior to incident (mm/dd/yyyy):		None <input type="checkbox"/>
PWS's assessed hazard level:	Premises isolation required by PWS? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Type of backflow preventer required by PWS:	PWS relies on <i>in-premises protection</i> ? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Other hazard evaluation information:		

*See WAC 246-290-490(4)(b)(i).

C. Method of Discovery of Backflow

How the backflow was discovered (check all that apply):	Direct observation	<input type="checkbox"/>	Water quality complaint	<input type="checkbox"/>
	Meter running backwards	<input type="checkbox"/>	Illness/injury complaint	<input type="checkbox"/>
	Water use decrease	<input type="checkbox"/>	Result of Investigation	<input type="checkbox"/>
	Disinfectant residual monitoring ...	<input type="checkbox"/>	Other (Describe):	<input type="checkbox"/>
	Water quality monitoring	<input type="checkbox"/>		
Incident reported to the public water system by:	PWS Personnel <input type="checkbox"/>	Premises Owner/Occupant <input type="checkbox"/>	Other PWS Customer <input type="checkbox"/>	
	Backflow Assembly Tester <input type="checkbox"/>	Other (Specify):		

D. Contaminant Information

Contaminant type (check all that apply):	Microbiological <input type="checkbox"/>	Chemical <input type="checkbox"/>	Physical <input type="checkbox"/>
Describe contaminant (for example, the organism name, chemical, etc.). Please attach lab analysis or MSDS, if available.			

E. Extent and Effects of Contamination

Estimated extent of contamination:	Contained within premises <input type="checkbox"/> Entered PWS distribution system <input type="checkbox"/>
Estimated number of connections affected:	Residential <input type="checkbox"/> Non-residential <input type="checkbox"/>
Estimated population affected or at risk:	Residential <input type="checkbox"/> Non-residential <input type="checkbox"/>
Number water quality complaints:	Describe water quality complaints:
Number illnesses reported:	Describe illnesses/irritation (specific illnesses, if known):
Number physical injuries(e.g. burns) or irritation(e.g. rashes) cases reported:	

Part 3: Cross-Connection Control Information at Backflow Site

A. Source of Contaminant

Source of contaminant or fixture type (check all that apply):	Air conditioner/heat exchanger	<input type="checkbox"/>	Industrial/commercial process water/fluid.....	<input type="checkbox"/>
	Auxiliary water supply	<input type="checkbox"/>	Medical/dental fixture	<input type="checkbox"/>
	Beverage machine	<input type="checkbox"/>	Reclaimed water system.....	<input type="checkbox"/>
	Boiler, hot water system	<input type="checkbox"/>	Swimming pools, spa	<input type="checkbox"/>
	Chemical injector/aspirator	<input type="checkbox"/>	Wastewater (sewage) system	<input type="checkbox"/>
	Fire protection system	<input type="checkbox"/>	Other (specify):	<input type="checkbox"/>
	Irrigation system (PWS supplied)	<input type="checkbox"/>	<input type="checkbox"/>

B. Distribution System Pressure Conditions in the Vicinity of the Backflow Incident

Type of backflow:	Backsiphonage <input type="checkbox"/>	Typical distribution system pressure in vicinity of incident (if range, enter lower end of range):	psi	
	Backpressure <input type="checkbox"/>			
Main/pressure status at time of incident (check all that apply):	Normal	<input type="checkbox"/>	Source/plant outage	<input type="checkbox"/>
	Main break	<input type="checkbox"/>	Scheduled water shutoff by PWS	<input type="checkbox"/>
	Fire fighting	<input type="checkbox"/>	Unscheduled/emergency shutoff	<input type="checkbox"/>
	Other high usage	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
	Power outage	<input type="checkbox"/>	Other (specify)	<input type="checkbox"/>

Describe causes and circumstances leading to backflow:

C. Backflow Preventer Information/Installation/Approval Status at Site of Backflow

Complete the tables in C and D for the *premises isolation* preventer for either of the following situations:

- If a premises isolation backflow preventer is installed **and** the contaminant entered the PWS distribution system.
- If the premises isolation assembly is the only backflow preventer at the site.

In all other cases, complete tables in C and D for the *in-premises* backflow preventer installed at the fixture. If more than one backflow preventer was involved in the backflow incident, copy tables C and D and complete them for the additional preventer(s).

If no backflow preventer was installed at the time the incident occurred, check this box and go directly to Part 4. Don't fill out the tables below (in C and D).

Backflow preventer information:	Type installed:	Installed for:	
	Make:	Model:	Size:
	Serial number:	Date installed:	
Installation status (check all that apply):	Properly installed/plumbed <input type="checkbox"/>	Improperly protected bypass present <input type="checkbox"/>	
	Improperly installed/plumbed <input type="checkbox"/>	If so, explain:	
Commensurate with assessed degree of hazard?	Yes <input type="checkbox"/> No <input type="checkbox"/>	If not, explain:	
DOH/USC-approved at time of backflow incident?	Yes <input type="checkbox"/> No <input type="checkbox"/>	If not, approved when installed? Yes <input type="checkbox"/> No <input type="checkbox"/>	

D. Backflow Preventer Inspection/Testing Information at Site of Backflow

Most recent inspection/test information prior to backflow incident. Attach test report(s), if available.	No test report on record <input type="checkbox"/>	
	Date tested/inspected:	
	Passed test/inspection <i>without</i> repairs <input type="checkbox"/>	
	Failed initial test/inspection, passed <i>after</i> repair <input type="checkbox"/>	
	Failed test/inspection, no repairs made <input type="checkbox"/>	
Inspection/test information after backflow incident [per WAC 246-290-490(7)(b)]. Attach test report.	Not tested/inspected <input type="checkbox"/>	
	Date tested/inspected:	
	Passed test/inspection <i>without</i> repairs <input type="checkbox"/>	
	Failed initial test/inspection, passed <i>after</i> repair..... <input type="checkbox"/>	
	Failed test/inspection, no repairs made..... <input type="checkbox"/>	
Preventer failure information , if applicable (check all that apply):	Fouled check <input type="checkbox"/>	Damaged seat <input type="checkbox"/>
	Debris <input type="checkbox"/>	Other: <input type="checkbox"/>
	Weather-related damage <input type="checkbox"/>	
If preventer failed inspection/test, did failure allow backflow?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, explain:	

Part 4: Corrective Action/Notifications

Action taken by PWS to restore water quality (check all that apply):	None <input type="checkbox"/>	Other treatment (describe): <input type="checkbox"/>
	Flushed/cleaned mains <input type="checkbox"/>	Replaced mains <input type="checkbox"/>
	Flushed/cleaned plumbing... <input type="checkbox"/>	Replaced plumbing <input type="checkbox"/>
	Disinfected mains <input type="checkbox"/>	Other: <input type="checkbox"/>
	Disinfected plumbing <input type="checkbox"/>	
Action ordered by PWS to correct cross-connection (check all that apply):	None <input type="checkbox"/>	Change existing preventer <input type="checkbox"/>
	Eliminate cross-connection... <input type="checkbox"/>	Repair/replumb <input type="checkbox"/>
	Remove by-pass <input type="checkbox"/>	Reinstall correctly <input type="checkbox"/>
	Install new preventer ... <input type="checkbox"/>	Replace with same type <input type="checkbox"/>
	For <i>premises isolation</i> <input type="checkbox"/>	Upgrade type <input type="checkbox"/>
	For <i>fixture protection</i> <input type="checkbox"/>	Other: <input type="checkbox"/>
Action ordered accomplished?	Yes <input type="checkbox"/> Date: _____ No <input type="checkbox"/> If no, explain:	
Agency notifications per WAC 246-290-490(8)(f) (check all that apply):	DOH <input type="checkbox"/> Local Health Agency <input type="checkbox"/> Local Adm. Authority <input type="checkbox"/>	
	Issued by end of next business day:	
Notifications of consumers in area of incident (check all that apply):	Population at risk <input type="checkbox"/> Public notification (PN per DOH regs.) <input type="checkbox"/>	
	Boil Water Advisory <input type="checkbox"/> Other (describe): _____	
Other enforcement/corrective actions (describe):		

Part 5: Cost of Backflow Incident (optional)

Item	PWS Personnel Hours Expended	Cost to PWS (\$)	Cost to Premises Owner (\$)
Investigation			
Restoration of water quality			
Correction of cross-connection situation			
Litigation and/or settlement			
Other not included in above			

Part 6: Further Information/Documentation

Additional information about this incident such as pictures, sketches, newspaper/journal articles, water quality analyses, epidemiological reports, etc. would be helpful. Information may be in electronic form or hard copy.

Part 7: Form Completion Information

Note: Form should be completed by a person currently certified as a Cross-Connection Control Specialist.

I certify that the information provided in this Backflow Incident Report is complete and accurate to the best of my knowledge.			
CCC Program Mgr. Name (print):		Title:	
Signature:	CCS Cert. Number:	Date:	
Phone:	E-mail:		
I have reviewed this report and certify that the information is complete and accurate to the best of my knowledge.			
PWS Mgr./Representative Name (Print):		Title:	
Signature:	Op. Cert. Number:	Date:	

Please send completed backflow incident form:

By mail to:

Washington State Department of Health
 Office of Drinking Water – CCC Program Manager
 P O Box 47822
 Olympia, WA 98504-7822

By email to: cccprogram@doh.wa.gov

Please send questions, comments, or suggestions about this form to us at the address above or e-mail them to cccprogram@doh.wa.gov

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).