Appendix 12-3

Cross Connection Codes and Engineering Design and Development Standards
13.04.110 - Cross-connections prohibited

A. All cross-connections between any private water supply and the municipal water supply of the city, as that term is defined in WAC 248-54-480, whether or not such cross-connections are controlled by automatic devices, such as check valves, or by hand-operated mechanisms, such as gate valves or stopcocks, are prohibited. In addition to any penalties provided by this chapter, failure on the part of persons, firms, or corporations to discontinue the use of any and all cross-connections and to physically separate such cross-connections will be sufficient cause for the discontinuance of the public water service to the premises on which the cross-connection exists. It is further unlawful to maintain any plumbing or arrangement or interconnection whereby, in the judgment of the superintendent, the city water supply system either on or off the premises may be contaminated. The superintendent shall, in cooperation with the health officer, make periodic inspections of premises served by the Olympia municipal water supply system to check for the presence of cross-connections. Any cross-connections found in such inspection shall be ordered removed by the superintendent. If any immediate hazard to health is caused by the cross-connection, water services to the premises shall immediately be discontinued until it is verified that the cross-connection has been removed. This section does not apply to the interconnection of the city water supply system with the water supply system of another municipality where approved by the commission.

B. Backflow prevention devices, approved by the superintendent, shall be installed at the service connection or within any premises where, in the judgment of the superintendent or the health officer, the nature and extent of activities on the premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate or dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the backflow device is required to be installed. A backflow prevention device shall be installed at the following facilities unless the superintendent and health officer determine no hazard exists:

1. Hospitals, mortuaries, clinics;
2. Laboratories;
3. Piers and docks;
4. Sewage treatment plants;
5. Food or beverage processing plants;
6. Chemical plants using a water process;
7. Metal plating industries;
8. Petroleum processing or storage plants;
9. Radioactive material processing plants or nuclear reactors.

(Ord. 4014 §1, 1977; Ord. 3506 §10, 1969).
13.04.120 - Use of nonconforming connection material prohibited

It is unlawful for any person to use any material not conforming to the standard specifications and the regulations of the city to connect any premises or buildings with the city water system.

13.04.150 - Access to premises for inspection

Authorized employees of the water department, properly identified, shall have free access at reasonable hours of the day, to all parts or premises or within buildings thereon to which water is supplied from the city water system for the purpose of checking conformity to these regulations. In addition, such personnel are authorized, from time to time, to survey water customers as a means to update customer lists and status in a responsible and reasonable manner.

Whenever the owner or occupant of any premises supplied by the city water system restrains authorized city employees from making the necessary inspections and surveys, water service may be immediately discontinued to the premises.

(Ord. 4014 §1, 1977; Ord. 3506 §14, 1969).
13.04.440 - Violations -- Misdemeanor -- Gross Misdemeanor -- Civil Infraction

A. Any person, firm, or corporation who knowingly violates or fails to comply with any term or provision of this chapter shall be deemed to have committed a misdemeanor, and if found guilty, shall be subject to a fine not to exceed One Thousand Dollars ($1,000), and/or to imprisonment not to exceed ninety (90) days or to both such fine and imprisonment. Each day shall be a separate offense. In the event of a continuing violation or failure to comply, the second and subsequent days shall constitute a gross misdemeanor punishable by a fine not to exceed Five Thousand Dollars ($5,000) and/or imprisonment not to exceed three hundred and sixty-five (365) days or both such time and imprisonment. Continuing violation shall mean the same type of violation which is committed within a year of the initial violation.

B. As an additional concurrent penalty, it shall be a civil infraction for a person, firm, or corporation to violate or fail to comply with any term or provision of this chapter. Each day shall be a separate infraction. A person, firm, or corporation found to have committed a civil infraction shall be assessed a monetary penalty as follows:

1. First offense: Class 3 ($50), not including statutory assessments.
2. Second offense arising out of the same facts as the first offense: Class 2 ($125), not including statutory assessments.
3. Third offense arising out of the same facts as the first offense: Class 1 ($250), not including statutory assessments.

See also OMC Chapter 4.44, Uniform Code Enforcement.

(Ord. 6081 §37, 2001; Ord. 3506 §45, 1969).
Chapter 1
GENERAL CONSIDERATIONS

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6.110 Backflow Prevention

All water system connections to serve buildings or properties with domestic potable water, fire sprinkler systems, or irrigation systems will comply with the minimum backflow prevention requirements as established by the DOH and the City of Olympia in its Cross Connection Program.

The installation of required backflow devices is necessary to protect the existing water system and users from possible contamination. All backflow prevention assemblies will be of a type and model pre-approved by the DOH or the City.

No cross connections will be created, installed, used, or maintained within the City of Olympia water service area.

Approved backflow prevention assemblies will be installed at the expense of the user, either at the service connection or within the premises, as determined by the City of Olympia Public Works Cross Connection Specialist in each of the following circumstances:

A. If the nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises could contaminate or pollute the potable water supply.

B. On premises having one or more cross connections.

C. Internal cross connections that are not correctable or intricate plumbing arrangements that make it impracticable to ascertain whether or not cross connections exist.

D. A repeated history of cross connections being established or reestablished.

E. Unduly restricted entry so that inspections for cross connections cannot be made with sufficient frequency or with sufficient notice to assure that cross connections do not exist.

F. Materials of a toxic, objectionable, or hazardous nature, either liquids, solids, or gases being used such that if back siphonage should occur, a health hazard could result.

G. Any mobile apparatus that uses the City of Olympia system or water from any premises within the City of Olympia system.

H. All uniform plumbing codes (UPC) must be maintained.
I. Assemblies installed at the point of delivery or on the internal plumbing system of any building shall not have galvanized piping attached to the inlet side of the assembly. Rigid piping, such as brass or copper, is allowed on the inlet side.

J. On any premise where installation of an approved backflow prevention device is deemed to be necessary to accomplish the purpose of these regulations in the judgment of the City of Olympia Certified Cross Connection Specialist.

K. Any use of radiant heat will require the installation of a reduced pressure (RP) backflow assembly at the meter.

L. A reduced pressure (RP) backflow assembly is required at all new commercial buildings and will be required to be installed when a change of use occurs at a commercial building. The RP device shall be installed at the meter.

M. On any premise where an appropriate cross-connection report form has not been filed with the office of the City of Olympia Public Works Department Water Quality Program.

N. On any premise where a bypass arrangement is installed around a backflow assembly, a second backflow assembly of equal protection shall be installed on the bypass piping.

The City will have the authority to perform regular inspections on all backflow assemblies, both inside and outside any building connected to the City's water system and will be provided access to the premises to inspect.

The Public Works Department will get the certificate for testing of any backflow prevention assembly before releasing the Certificate of Occupancy on any building. A list of state-certified approved testers may be obtained from the City.

Backflow Prevention Assembly Testers shall hold a current Washington State Department of Health Backflow Assembly Tester Certification.

The Olympia Fire Department will test the fire line and obtain the certificate for underground piping. In any situation, the Olympia Fire Department will not test the fire line until Public Works has tested and approved the main up to the fire line. Backflow assemblies for fire protection shall have integrated shutoff valves approved as part of the assembly and shall be separate from any post indicator valve installed on the fire service line. Double-check detector assemblies shall be required on all fire lines.
6.111 Backflow Prevention Assemblies

Double-Check Valve Assembly (DCVA). The term “double-check valve assembly” will mean an assembly composed of two independently acting approved check valves, including tightly closing shutoff valves attached at each end of the assembly, and fitted with properly located test cocks. This assembly will only be used to protect against non-health hazards.

Double-Check Detector Check Valve Assembly (DCDA). The term “double-check detector check valve assembly” will mean a specially designed assembly composed of a line-sized approved double-check valve assembly with a specific bypass water meter and a meter-sized approved double-check valve assembly. The meter will register accurately for only very low rates of flow and will show a registration for all rates of flow. This assembly will only be used to protect against a non-health hazard. This assembly will be used on all fire protection lines rated as a non-health hazard.

Reduced Pressure Principle Backflow Prevention Assembly (RPBA). The term “reduced pressure principle backflow prevention assembly” will mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit will include properly located test cocks and tightly closing shutoff valves at each end of the assembly. This assembly is designed to protect against a health hazard.

Reduced Pressure Principle Detector Assembly (RPDA). The term “reduced pressure principle detector assembly” will mean a specially designed assembly composed of a line-sized approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. This assembly will be used on all fire protection services rated as a health hazard.

The meter will register accurately for only very low rates of flow and will show a registration for all rates of flow.

Pressure Vacuum Breaker (PVBA). The term “pressure vacuum breaker” will mean an assembly containing an independently operating, internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shutoff valves attached at each end of the assembly. This assembly is designed to protect against a health hazard under a back siphonage condition only.

Spill-Resistant Pressure Vacuum Breaker. The term “spill-resistant pressure vacuum breaker” shall mean an assembly containing an independently
operating, internally loaded check valve and independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with a properly located resilient-seated test cock, a properly located bleed/vent valve, and tightly closing resilient-seated shutoff valves attached at each end of the assembly. This assembly is designed to protect against a high health hazard under a back siphonage condition only.

Existing backflow devices that are no longer on the state-approved list of backflow assemblies will be allowed to remain in service provided they pass the annual testing requirements. Backflow assemblies that are no longer approved and do not pass the required testing shall be replaced with a new assembly commensurate with the degree of hazard.

### 6.112 Installation Requirements

Fire suppression systems connected to the potable water system shall be protected by an approved double-check detector check valve assembly as minimum protection. Fire systems using chemicals shall be required to install a reduced pressure detector assembly as minimum protection.

Horizontal and vertical assemblies must be approved by the State of Washington Department of Health and the City of Olympia at the time of installation.

To ensure proper operation and accessibility of all backflow prevention assemblies, the following requirements will apply to the installation of these devices:

A. No part of the backflow prevention assembly will be submerged in water or installed in a location subject to flooding.

B. Assemblies must be installed at the point of delivery of the water supply, before any branch in the line, downstream of any pressure reducing valve on private property, in a location approved by the Public Works Cross Connection Specialist.

C. The assembly must be protected from freezing and other severe weather conditions.

D. All backflow prevention assemblies to be installed will be of a type and model pre-approved by the State of Washington Health Division (Washington Administrative Code 246-290-490) and the City of Olympia Public Works Cross Connection Specialist.
E. Only assemblies that have been approved for vertical installation by the Washington State Department of Health and the City of Olympia Public Works Cross Connection Specialist shall be used when necessary.

F. The assembly will be readily accessible with adequate room for maintenance and testing. Devices 2 inches and smaller will have at least a 6-inch clearance on all sides of the assembly. All assemblies larger than 2 inches will have a minimum clearance of 24 inches on the back side, 24 inches on the test cock side, 12 inches below the device, and 36 inches above the device (refer to Standard Drawings). A strainer shall be installed immediately upstream of the assembly.

G. If written permission is granted by the Public Works Cross Connection Specialist to install the backflow assembly inside of the building, the assembly will be readily accessible during regular working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday.

H. If, after receiving written permission by the Public Works Cross Connection Specialist, an assembly is installed inside the premises and is 4 inches or larger and is installed 4 feet above the floor, it must be equipped with a rigidly and permanently installed scaffolding acceptable to the City of Olympia Public Works Cross Connection Specialist. This installation must also meet the requirements set out by the US Occupational Safety and Health Administration (OSHA) and the State of Washington Occupational Safety and Health Administration (WISHA).

I. Reduced pressure principle assemblies may not be installed in a vault underground or anywhere it may be subject to flooding. All installations of reduced pressure principle assemblies shall be above ground with insulated enclosures where needed.

J. An approved air gap will be located at the relief valve orifice. This air gap will be at least twice the inside diameter of the incoming supply line as measured vertically above the top rim of the drain and in no case less than 1 inch.

K. Where a backflow device is deemed necessary, the assembly and installation plans will be submitted to the City of Olympia Community Planning and Development Department for approval prior to installation.

L. Upon completion of installation, the City of Olympia Public Works Cross Connection Specialist will be notified, and all devices must be inspected and tested. All backflow devices must be registered with the City of Olympia Public Works Department Water Resources. Registration with all the required information shall be submitted within five days of installation. Forms must be completed in ink, legible and be an original copy.
M. The City of Olympia Public Works Cross Connection Specialist reserves the right to reject test reports that are not complete and accurate. Submittal of inaccurate test reports shall result in denial of report forms and a requirement to retest the backflow assembly.

N. Any variances from these installation requirements will be requested in writing by the owner and approved by the City of Olympia Community Planning and Development Department prior to the device installation.

O. No field modifications shall be made to an approved backflow assembly that will change its configuration or function.

P. An approved certificate for verification of accuracy from an approved calibration laboratory or agency shall be provided to the City of Olympia on an annual basis for approved backflow testing equipment used in the protection of the City of Olympia water system. All testing equipment shall be in good working order and be either hydraulic or electronic in nature. All electronic testing equipment capable of producing printed test strips at the time of testing an assembly shall be sent to the City of Olympia along with a completed assembly test report.

Q. Failure to follow any of the preceding requirements regarding backflow assembly testing may result in the test report being rejected and the assembly being retested in the presence of the City of Olympia Cross Connection Specialist.

6.113 Backflow Prevention - BAT Form Requirements

The following information is required on all test report forms submitted to the City. Items A through L are standard information required on all forms. Item M is specific to the type of value that you are testing.

A. BAT Certification Number.

B. Name: name of business or property owner.

C. Address: your building or residence street address.

D. Device Location: please give the physical location of the device, such as next to meter, west wall of room 102, 15 feet SW of building, etc.

E. What the Cross-Connection Hazard is: backflow devices isolate such things as irrigation systems, carbonation machines, boilers, etc.
F. Size/Type: size and type of backflow preventer, such as $\frac{1}{2}$ inch DCVA.

1. Manufacturer
2. Name, Serial Number: be accurate. Include alpha prefixes, such as A120220.
3. Model Number/Model: Use complete model number, such as 009M2QT or 950XLT.

G. Proper Installation Annotation: forms must note if the assemblies were installed in accordance with the installation requirements. If the assembly does not meet these requirements, the discrepancy must be recorded in the remarks section.

H. Remarks Section: record any comments or discrepancies in this section. For example, if an assembly does not meet the proper installation requirements, note the reason in this section.

I. Test results: to include the following:

1. Values required for each check valve tested.
2. Repair information and details.
3. Final test results.

J. Test Equipment Information: record the gauge, make, model, serial number, and verification of accuracy date.

K. Certified Tester Information

1. Important note: the report form must include the signature of the person performing the test, a certification number, and the date of the test.
2. All test reports must include legibly printed tester’s name, telephone number, certification number, test completion date, gauge serial number, and gauge accuracy.

L. Person Repairing Assembly: printed or typed name of person repairing assembly.

M. Information on Type of Valve Tested: the information below must be provided for every valve tested.

Contact Information: learn more about the City of Olympia’s backflow assembly testing requirements, or contact us by telephone, mail, or e-mail. Please note, we cannot accept test report forms via e-mail or fax as a signature is required.
City of Olympia, Public Works Department
Attention: Steve Coke
P.O. Box 1967
Olympia, WA 98507-1967
Telephone: (360) 753-8161

For questions regarding the Public Works Department call (360) 753-8588 or contact via e-mail.

6.114 Access to Premises

Authorized employees of the City of Olympia Public Works Department Water Quality Program with proper identification will have access during reasonable hours to all parts of a premise and within the building to which water is supplied. However, if any water user refuses access to a premise or to the interior of a structure at reasonable times and on reasonable notice for inspection by the Cross Connection Specialist appointed by the City of Olympia Public Works Director, a reduced pressure principle assembly will be required to be installed at the service connection to that premise.

6.115 Annual Testing and Repairs

All backflow assemblies installed within the territory served by the City of Olympia will be tested immediately upon installation by the City of Olympia Cross Connection Specialist and at least annually thereafter by a Washington State certified tester or City of Olympia Cross Connection Specialist. All such devices found not functioning properly will be promptly repaired or replaced by the water user within five (5) working days. If any such device is not promptly repaired or replaced, the City of Olympia may deny or discontinue water to the premise. All testing and repairs are the financial responsibility of the water user.

All testers shall use test procedures approved by the Washington State Department of Health.

6.116 Costs of Compliance

All costs associated with purchase, installation, inspections, testing, replacement, maintenance, parts, and repairs of the backflow device are the financial responsibility of the water user.
6.117 **Termination of Services**

Failure on the part of any customer to discontinue the use of all cross connections, except in accordance with the Standard, is sufficient cause for the immediate discontinuance of public water service to the premises (Washington Administrative Code 246-290-490). The City may install the appropriate backflow prevention device at the owner’s expense.

6.120 **Service Connection**

A. All service connections relating to new development will be of the appropriate size as determined by industry standard and approved by the City of Olympia and installed by the developer at the time of mainline construction. After the lines have been constructed, tested, and approved, the owner may apply for a water meter. The City will install a water meter after the application has been made and all applicable fees have been paid. Water meters will be set only after the system is inspected and approved.

B. When water is desired to a parcel fronting an existing main but not served by an existing setter, an application must be made to the City. Upon approval of the application and payment of all applicable fees, the City will tap the main and install the meter, box, and setter.

C. Service lines will be domestic, high-density polyethylene pipe, minimum pressure, Class 200 psi, Grade PE 3408 copper tube size. Glued joints will not be accepted. Service lines will be installed a minimum of 45 degrees off the main. Tracer tape and 14-gauge blue-coated wire wrapped around the pipe will be installed on all service lines.

Service saddle will be ductile iron with double stainless steel straps. All clamps will have rubber gaskets. Service saddles shall have tapped IP threads.

Corporation stops will be ball valve all US brass and will be Ford, Mueller, or AY McDonald with IP threads conforming to AWWA C800. Stainless steel inserts will be used with pack joints or Mueller 110 compression joints and polyethylene pipe.

D. Meters setter will be Ford 90 series FOVB89212W151M or Mueller, or AY McDonald equal with tail.

E. Meter boxes will be HDPE mid-states CBC-1324-R ductile iron cover.

F. Master meters will not be allowed for use in the City of Olympia water system.
Ordinance No. Ord. 6628 §1, 2009


WHEREAS, the Olympia Engineering Design and Development Standards (EDDS) are periodically updated; and

WHEREAS, on March 31, 2009, a public hearing was held to consider and approve amendments to Chapters 1 through 9 of the EDDS, and adding a new Chapter 10, Reclaimed Water, to the EDDS;

WHEREAS, this Ordinance is supported by the staff report and attachments associated with the Ordinance along with documents on file with the City of Olympia; and

WHEREAS, the amendments contained in this Ordinance are adopted pursuant to Article 11, Section 11, of the Washington State Constitution and any other legal applicable authority;

NOW, THEREFORE, THE OLYMPIA CITY COUNCIL ORDAINS AS FOLLOWS:

Section 1. Amendment of Section 12.02.020. Section 12.02.020 of the Olympia Municipal Code is hereby amended to read as follows:

**12.02.020 - Engineering design and development (guidelines and public works) standards.**

There is hereby adopted by reference "Olympia Engineering Design and Development Standards, with ((2004)) 2009 amendments," three (3) copies one (1) copy of which shall be kept on file in the office of the City Clerk and the Olympia Public Works Department. These standards shall be considered a part of this ordinance as though fully set forth herein.

Section 2. Severability. The provisions of this ordinance are declared separate and severable. If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder of this ordinance or application of the provision to other persons or circumstances, shall be unaffected.

Section 3. Ratification. Any act consistent with the authority and prior to the effective date of this ordinance is hereby ratified and affirmed.
Section 4. Effective Date. This ordinance shall take effect five (5) days after publication, as provided by law.

MAYOR

ATTEST:

CITY CLERK

APPROVED AS TO FORM:

Deputy City Attorney

PASSED:

APPROVED:

PUBLISHED: