AGENDA
PORTLAND WATER DISTRICT
225 Douglass Street, Portland, Maine
Jeff P. Nixon Training Center
6:00 p.m., Monday, July 23, 2018

1. **Convene Meeting** with Pledge of Allegiance and moment of silence. 
   President Lunt

2. **Roll Call** 
   Clerk

   President Lunt

4. **Invitation for Public Comment** 
   President Lunt

5. **Award of Joseph DiPietro Scholarship to Recipients** 
   President Lunt

6. **Reports:**
   - Operations Committee Reports 
     Trustee Siviski
   - Planning Committee Reports 
     Trustee Levinsky
   - Administration & Finance Committee Reports 
     Trustee Willey
   - General Manager’s Report 
     General Manager

7. **New Business**
   
   A. **Order 18-022** authorizing the Fee Schedule for Non-Water Tariff services. 
      Administration & Finance Committee
   
   B. **Order 18-023** authorizing a professional services contract with Triple Point Engineering. 
      Operations Committee
   
   C. **Order 18-024** authorizing the Comprehensive Engineering Method of Procurement for the Little John Pump Station Project. 
      Operations Committee
   
   D. **Order 18-025** approving revised Cross Connection Control Program. 
      Operations Committee

8. **Executive Session.** A motion may be made to go into Executive Session at any time during the meeting to discuss, pursuant to 1 M.R.S. §405(6)(A) personnel, 1 M.R.S. §405(6)(C) real estate, 1 M.R.S. §405(6)(D) labor negotiations, or 1 M.R.S. §405(6)(E) legal matters. 
   President Lunt

9. **Other Business.** An item may be added to this agenda provided seven trustees vote to waive the rule regarding agendas. 
   President Lunt

10. **Second Invitation for Public Comment.** 
    President Lunt

11. **Trustee Comments.** 
    President Lunt

12. **Adjournment.** 
    President Lunt

Donna M. Katsiaficas
Clerk
Portland Water District

Board of Trustees Regular Meeting

July 23, 2018

New Business

Agenda Items 7A-7D
Agenda Item: 7A Order 18-022  
Date of Meeting: July 23, 2018  
Subject: Non-Water Tariff Fees  
Presented By: David Kane, Director of Administration

RECOMMENDATION
The following proposed language is presented for Board of Trustee approval:

ORDERED, that the Fee Schedule for Non-Water Tariff Services is hereby effective as of August 1, 2018.

BACKGROUND ANALYSIS
The District assesses fees to customers and other entities for services provided. For water services that customers are required to obtain from the District, any fees are incorporated in the Terms and Conditions. For other services, the proposed fee schedule has been created to consolidate in one place all the fees. It is intended that the fee schedule will be updated and reviewed by the Board at the same time the Terms and Conditions are updated, usually every two years.

FISCAL REVIEW/ FUNDING
The only new fee is the Industrial Pretreatment Permit fee of $300. The District is taking over the responsibility of the Industrial Pretreatment program effective August 1, 2018 from the City of Portland. The City had collected a $300 fee for an IPT permit and the District is proposing to continue the fee. The fee offsets some of the program costs and reduces the assessment to the City of Portland.

LEGAL REVIEW
Corporate Counsel has reviewed the proposed order as to form.

CONCLUSION(S)
The Administration and Finance Committee reviewed at their July 9, 2018 meeting and recommended the Fee Schedule for Non-Water Tariff Services be approved.

ATTACHMENT(S)
A. Fee Schedule for Non-Water Tariff Services
# Portland Water District
## Fee Schedule for Non-Water Tariff Services
### August 1, 2018

<table>
<thead>
<tr>
<th>A. Water</th>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Winter hydrant inspection</td>
<td>Inspection of private hydrants to verify the operability of hydrant during winter months</td>
<td>$3 per month on monthly water bill. Cost covers the average cost to inspect hydrant</td>
</tr>
<tr>
<td>2. Damage Hydrants</td>
<td>Repair of hydrants damaged by customers</td>
<td>Costs to repair including labor, benefit overhead, stock items with normal markup (25%), third-party expenses and $7 finance department administrative fee</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Wastewater</th>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial pretreatment permit</td>
<td>Initial and periodic review of the customer premises to assure compliance with IPT regulations</td>
<td>$300 for initial and every 3-year renewal.</td>
</tr>
<tr>
<td>2. Septage and Holding Tank Waste</td>
<td>Qualifying haulers may deliver septage, holding tank and other waste to PWD treatment facilities (see policy 6.20-03)</td>
<td>Consistent with the ‘Acceptance Fee Schedule’ included in Policy 6.20-03.</td>
</tr>
<tr>
<td>3. Submeter Fee -Monthly</td>
<td>Covers the operating and capital cost of the submeter program</td>
<td>$2 per month at the request of Cumberland, Gorham, South Portland and Westbrook</td>
</tr>
<tr>
<td>4. Submeter Fees -Other</td>
<td>The cost to investigate why a submeter cannot be read after the initial installation of meter/Encoder Receiver Transmitter (ERT).</td>
<td>Sub meter verification fee $19</td>
</tr>
<tr>
<td>5. Submeter Fees – Portland Only</td>
<td>Costs or replacing submeters for Portland residents.</td>
<td>Submeter Replacement ERT &amp; Meter $150 Submeter ERT Only Upgrade fee $105 Fees are per City’s request.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. General</th>
<th>Description</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purchases from Stock Room</td>
<td>Qualified third-parties and employees may purchase items from the stockroom – see policy 7.15-02.</td>
<td>Inventory value plus a 50% mark up (See Policy 7.15-02).</td>
</tr>
<tr>
<td>2. Freedom of Information Request</td>
<td>Members of the Public requesting access to public records (see policy 7.05-05).</td>
<td>$1 for first page, $0.50 for each additional page, optional $15/hour to compile data. Payment in advance may be required. (See Policy 7.05-05)</td>
</tr>
<tr>
<td>3. Nixon Development Center</td>
<td>Training and other events sponsored by the District or other approved non-profit entities (see policy 7.07-04)</td>
<td>Fee based on event sponsor: District/NEWWA: no charge MWUA: $50 plus cleaning fee Others: $100 plus cleaning fee (See Policy 7.07-04).</td>
</tr>
</tbody>
</table>
BOARD OF TRUSTEES / AGENDA ITEM SUMMARY

Agenda Item: 7B Order 18-023
Date of Meeting: July 23, 2018
Subject: EEWWTF Dewatering Area and CEWWTF Headworks HVAC Design - Professional Services Contract - Selection
Presented By: Gordon Johnson, Engineering Services Manager

RECOMMENDATION
The following proposed language is presented for Board of Trustee approval:

ORDERED, a professional services contract with Triple Point Engineering in the amount of $69,100 is hereby authorized for design phase engineering services for the East End WWTF Dewatering Area HVAC Upgrades (CIP 2018-21/2705) and the Cape Elizabeth WWTF Headworks HVAC Upgrades (CIP 2017-418/2570); and that the General Manager and the Treasurer, each acting singly, are authorized to take such steps as may be necessary to accomplish the intent of the vote.

BACKGROUND ANALYSIS
This effort will develop detailed design plans and specifications based on concept level recommendations in the Wastewater Treatment Facilities HVAC Master Plan regarding the dewatering area at the East End plant and the headworks area at the Cape Elizabeth plant. The Master Plan recommended an upgrade of both spaces as a high priority.

The proposed scope for this effort involves upgrading the ventilation systems in the dewatering and chemical storage areas of the East End to remove interconnections to the sludge cake garage which is served by the odor control system. The project will also provide ventilation for the Cape Elizabeth WWTF headworks area.

Staff reviewed and scored two proposals from qualified teams that provided proposed methods for achieving the project goals. Based on the outcome of the review and ranking, Triple Point Engineering received the best overall score (107). Staff therefore recommends award to Triple Point Engineering for an amount of $69,100, which includes design phase services from detailed design through project bidding. Future recommendations will include construction phase engineering based on the project scope developed during the design phase.
This project includes design phase engineering services, including detailed design and bidding. As approved by Board Order 18-003 on January 22, 2018 for the East End dewatering area project, and by Board Order 17-024 on September 25, 2017 for the Cape Elizabeth headworks project, the comprehensive method for procuring engineering services will be used for this project, meaning that it is anticipated that the same firm will be utilized for detailed design as well as construction services. An amendment to this agreement with Triple Point Engineering is therefore anticipated to cover construction phase services once the final design is complete and the required scope can be refined.

Project #: 2018-Subprogram 21/ Project 2705; 2017-Subprogram 418/ Project 2570

FISCAL REVIEW/FUNDING
This project includes comprehensive engineering services for the EEWWTF and CEWWTF HVAC upgrades, and will not have an operating fund impact. The design will lead to the construction of an approximately $575,000 project with an estimated operating fund impact of approximately $58,000 in debt service. The project will be submitted for consideration for the Clean Water State Revolving Fund project list for funding through Maine Municipal Bond Bank.

LEGAL REVIEW
Corporate Counsel has reviewed the proposed order as to form.

CONCLUSION(S)
Staff recommends awarding the contract for design engineering services for the EEWWTF and CEWWTF HVAC upgrades to Triple Point Engineering. The Committee voted unanimously to forward to the Board for approval.

ATTACHMENT(S)
SUPPORTING INFORMATION
SUPPORTING INFORMATION

The heating and ventilation systems currently in service at the East End facility in the Chemical Room are original equipment and at the end of their expected service life. The Dewatering Area ventilation system was upgraded approximately 10 years ago and will be modified to coordinate with adjoining spaces and for enhanced energy efficiency. It is anticipated that the existing ductwork and other facilities in the dewatering area will be re-used.

The heating and ventilation system in the Cape Elizabeth WWTF headworks area have been in service for approximately 30 years and has reached the end of its service life. The proposed scope of this project will replace the original equipment with new heating and ventilation equipment and associated instrumentation and control systems.

This project includes design phase engineering services, including detailed design and bidding. This effort will include establishing a proposed equipment layout and associated cost breakdown, followed by development of the plans and specifications with intermediate milestones to confirm scope objectives and project cost. The scope of the construction phase engineering services will be refined based on work sequencing and other project requirements developed during design.

Five qualified engineering firms were invited to respond to the RFP: Arcadis, Woodard & Curran, Hazen & Sawyer, Triple Point Engineering, and Hallam ICS; Triple Point Engineering and Hallam ICS provided responses. A selection team of five PWD staff including representation from Wastewater Operations and AMaP was assembled to review each firm’s proposal. The selection committee conducted a review of the proposals and held interviews with both respondents.

Each selection team member then ranked the proposals based on the two non-fee categories identified in the RFP; Methods & Approach (35%) and Qualifications & Experience (35%) and a final review meeting was held. Each proposal was ranked for each category using a 1-2 scale where a #1 ranking represented the proposal that best met the requirements. The rankings for each firm were averaged for the entire review team. The lump sum fee information for each proposal was opened and added to the overall ranking of the proposals (at 30%). Therefore a total of 100 represents a perfect score and the lowest fee.

The firms developed proposals that highlighted the proposed methods of addressing the challenges anticipated to achieve success. Based on the outcome of the review and ranking, Triple Point Engineering received the best overall score (107).

Key factors that led to recommendation of the Triple Point Engineering team include the following:

- An integrated approach that leverages system monitoring, control and enhanced energy efficiency;
- A project team with substantial industry experience with HVAC system design including several wastewater treatment plant upgrades;
- Recognition of the need to keep budget constraints and project cost containment as a key focus area for the design team;

The following table summarizes the results of the selection committee’s evaluation of each respondent, including a scoring breakdown:
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Triple Point Engineering</th>
<th>Hallam ICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Methods &amp; Approach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight - 35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Best Score = 35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods Score</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>2. Qualifications &amp; Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight - 35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Best Score = 35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualifications Score</td>
<td>42</td>
<td>63</td>
</tr>
<tr>
<td>3. Fee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight - 30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Best Score = 30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lump Sum Fee</td>
<td>$69,100</td>
<td>$84,905</td>
</tr>
<tr>
<td>(through Final Design and Bidding)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fee Score</td>
<td>30</td>
<td>43.7</td>
</tr>
<tr>
<td>Total Score</td>
<td>107</td>
<td>177</td>
</tr>
<tr>
<td>Rank</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

As a result of this ranking, the review team recommends award to Triple Point Engineering for an amount of $69,100 for completion of the EEWWTW dewatering area and CEWWTF headworks area HVAC upgrades. Once the design has been completed, a recommendation will be made to amend the contract to include construction phase services.

As approved by Board Order 18-003 on January 22, 2018 for the East End dewatering area project, and by Board Order 17-024 on September 25, 2017 for the Cape Elizabeth headworks project, the comprehensive method for procuring engineering services will be used for this project, meaning that it is anticipated that the same firm will be utilized for preliminary and final design as well as construction services.
**BOARD OF TRUSTEES / AGENDA ITEM SUMMARY**

Agenda Item: 7C Order 18-024  
Date of Meeting: July 23, 2018  
Subject: Little John Pump Station Upgrade (Cape Elizabeth) – Professional Services Contract – Engineering Method Approval  
Presented By: Gordon Johnson, Engineering Services Manager

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**RECOMMENDATION**  
The following proposed language is presented for Board of Trustee approval:

ORDERED, that the Comprehensive Engineering Method is hereby authorized for the procurement of engineering services for the Little John Pump Station (Cape Elizabeth) Upgrades Project, pursuant to the District’s Purchasing Policy, and that the General Manager and the Treasurer, each acting singly, are authorized to take such other steps as may be necessary to accomplish the intent of this vote.

**BACKGROUND ANALYSIS**  
Pursuant to the District’s purchasing policy, staff is seeking approval from the Board of Trustees to procure engineering services (comprehensive method) for design and construction services associated with the upgrades to the Little John Pump Station.

Staff estimates that the cost for the design phase portion of this project to be $150,000-$175,000. The design will include upgrades to the pumps, piping, electrical equipment, and facility support systems. The Construction and associated Construction Services portion of this project are currently projected to be undertaken in 2019.

Once the Method is approved, staff will issue a request for proposals. It is expected that a recommendation will be offered to the Board at the October meeting.

**FISCAL REVIEW/ FUNDING**  
The project was included in the 2018 CIP, Subprogram 407 project #1360.

**LEGAL REVIEW**  
Corporate Counsel has reviewed the proposed order as to form.
CONCLUSION(S)
Staff recommends that the comprehensive engineering method be utilized for engineering services for this project. The Committee voted unanimously to forward to the Board for approval.

ATTACHMENT(S)
None
BOARD OF TRUSTEES / AGENDA ITEM SUMMARY

Agenda Item: 7D Order 18-025
Date of Meeting: July 23, 2018
Subject: Update Cross Connection Control Program
Presented By: James Wallace, Director of Water Services

RECOMMENDATION
The following proposed language is presented for Board of Trustee approval:

ORDERED, that the revised Cross Connection Control Program attached hereto is approved, with the effective date of January 1, 2019.

BACKGROUND ANALYSIS
The State of Maine requires that all public drinking water suppliers maintain a Cross Connection Control Program. The purpose is to prevent the contamination of drinking water by the backflow of water or other liquids, mixtures or substances into the distribution pipes of a water supply system from an unintended source.

During a review of water quality programs in 2017, staff determined that a revision of the District’s Cross Connection Control Program was due. Two significant water main breaks in Portland during 2012 and 2017 resulted in precautionary boil water orders for areas of the peninsula. The boil water orders were necessary, because low water pressure had created the potential for contaminants to be drawn back into the distribution system. These events encouraged staff to update the program and include additional requirements to reduce the potential for contamination of the distribution system.

The update includes overall reformatting of the document and creation of new sections to reflect the EPA’s Model Program, as well as requirements of State of Maine’s Cross Connection Rules. It also includes the creation of a new residential backflow prevention requirement for all new building construction and buildings that receive a substantial renovation. In addition, all buildings with an existing unprotected fire sprinkler system, that receives a substantial renovation, will need to be upgraded to meet all current cross connection control standards.

Staff will proactively initiate a six-month education and outreach program for plumbing professionals, municipal partners, and the public. These changes would then go into effect on January 1, 2019.
**FISCAL REVIEW / FUNDING**
The District will initiate additional outreach and education relative to this update; however, these are not expected to require additional funding.

**LEGAL REVIEW**
Corporate Counsel has reviewed the proposed language of the changes.

**CONCLUSION(S)**
District staff recommends this update. The Operations Committee voted to send to the full Board for approval.

**ATTACHMENT(S)**
A. Copy of the District’s current Cross Connection Control Program
B. Copy of the Staff’s revised Cross Connection Control Program
PORTLAND WATER DISTRICT
CROSS-CONNECTION CONTROL PROGRAM
1989
REVISED MAY, 2006
REVISED SEPTEMBER, 2009
REVISED JUNE, 2017

225 DOUGLASS STREET - P.O. BOX 3553
PORTLAND, MAINE 04104
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Portland Water District
Cross-Connection Control Program

I. PURPOSE
Cross connections between water supplies and non-potable sources of contamination represent one of the most significant threats to health in the water supply industry. This program is, therefore, designed to maintain the safety and potability of the water in the Portland Water District's system by preventing the introduction of any substance other than water into the distribution system.

II. AUTHORITY
This program derives its enforceability from Title 22, MRSA, SS 42(1), 42(3), 2612(2) & 2612(5) Maine Department of Health and Human Services, Division of Environmental Health, Cross-Connection Rules 10-144 In addition, authority rises from the Rules and Regulations as published by the Portland Water District and as approved by the Public Utilities Commission of the State of Maine and from provisions of the Occupational Safety and Health Act, and from provisions of the State Plumbing Code, part I, 10-144A CMR 238.

III. DEFINITIONS
A. Approved
Accepted by the District as meeting the applicable specification or procedures as stated or cited in these regulations.

B. Backflow
The flow of water or other foreign liquids, gases or other substances into the District's distribution system from any source other than the intended source.

C. Backflow Preventer
A device to prevent backflow.

1. AIR GAP
A physical separation of at least two (2) pipe diameters, but not less than one inch, to prevent backflow between the free-flowing discharge end of the potable water system and any other system.

2. ATMOSPHERIC NON-PRESSURE TYPE VACUUM BREAKER
A breaker that prevents back-siphonage by creating an atmospheric vent where there is either a negative pressure or sub-atmospheric pressure in a water system.

3. BACKFLOW PREVENTER WITH INTERMEDIATE ATMOSPHERIC VENT
A device having two check valves separated by an atmospheric vent.

4. DOUBLE CHECK VALVE ASSEMBLY
A device having two independently operating, spring-loaded, bronze faced with rubber disc check valves, with shutoff valves and test cocks for periodic testing. A single check valve is not an approved backflow preventer.

5. DUAL CHECK VALVE ASSEMBLY
A device meeting ASSE Standard # 1024 containing two independently acting check valves. It is used primarily on residential services, but may also be installed on other low hazard services. It is not subject to periodic testing.
6. **Hose Bibb Vacuum Breaker**
   A device which is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.

7. **Pressure Vacuum Breaker**
   A device containing a spring-loaded check valve and a spring-loaded atmospheric vent, which opens when pressure approaches atmospheric. It contains valves and fittings, which allow the device to be tested.

8. **Reduced Pressure Principle Backflow Preventer**
   An assembly of check valves and a reduced pressure zone which spills water to the atmosphere in the event of the failure of the check valves. It has valves and fittings, which allow the device to be tested. Also referred to as an RPZ.

D. **Back-Pressure**
   A condition in which the owner's system pressure is greater than the District's system at the service entrance.

E. **Back-Siphonage**
   Backflow resulting from negative or less than atmospheric pressure in the District's distribution system.

F. **Certified Backflow Prevention Device Tester**
   A person certified by New England Water Works Association or the American Backflow Prevention Association as having completed necessary training in the testing of backflow devices.

G. **Containment**
   A method of backflow prevention that requires an approved backflow preventer at the water service entrance to prevent backflow of contaminated water into the District's distribution system. Protection by containment only protects the District's distribution system and in no way is meant to protect the fixture or personnel within the structure involved.

H. **Containment Device**
   An approved backflow preventer that includes a strainer as recommended by the manufacturer. The containment device shall be installed down-stream of any required District water meter and any by-pass.

I. **Cross-Connection**
   Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other water or other substances of unknown or questionable safety, whereby water or other substances may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

J. **Department**
   State of Maine Department of Health and Human Services Drinking Water Program.

K. **District**
   The Portland Water District.

L. **Fixture Isolation**
   A method of backflow prevention in which a backflow preventer is located at or near the potential source of contamination or pollution to correct a cross-connection within the owner’s premises rather than at the water service entrance.
M. Owner
Any person who has legal title to, or license to operate or inhabit, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.

N. Person
Any individual, partnership, company, public or private corporation, political subdivision or agency of the State, department, agency or instrumentality of the United States or any other legal entity.

O. Potable Water
An approved water, free from impurities present in any amount sufficient to cause disease or harmful physiological effects. Its physical, chemical, bacteriological and radiological quality conforms to the Maine Safe Drinking Water Regulations or any regulations pertaining thereto.

P. Water Service Entrance
That point in the owner's water system which is beyond the sanitary control of the District and is first readily accessible for connections. This will ordinarily be at the point where the service enters the building and always before an unprotected branch.

Q. Private Water Source
Any source of water, which may or may not be approved by the Department, utilized by any Owner for consumptive and/or other purposes, and which is not under the immediate control of the District.

R. Plumbing System
The plumbing system means and includes all potable water supply and distribution pipes, all plumbing fixtures and traps, all drainage and vent pipes and all building drains, including their respective joints and connections, devices, receptacles and appurtenances within the property lines of the premises and shall include potable water piping, potable water treating or using equipment, and water heaters.

S. District's Distribution System
Any publicly or privately owned system of pipes, structures, and facilities through which potable water is sold, furnished or distributed to the public for human consumption, and which is under control of the District. The system shall not include any portion of service pipe owned and maintained by the Owner.

T. Submerged Inlet
The water pipe or extension thereof from a potable water supply terminating less than two pipe diameters above the flood level rim of a tank, vessel, fixture or appliance which may contain a water of questionable quality, waste or other contaminant or pollutant.

U. 13D Residential Life Safety Sprinkler Systems
Automatic sprinkler systems for one and two family dwellings and manufactured homes.

IV. ADMINISTRATION
A. An employee of the District, having properly identified himself, shall have free access during the District's normal business hours, to all premises supplied with water to permit inspection of the plumbing system for possible cross connections. The Owner shall follow the provisions of these rules and the Department's Cross Connection Rules; if a cross connection is found to exist.
V. RESPONSIBILITIES

A. The District's inspections for cross connections or potential cross connections shall be made during the District's normal working hours unless otherwise arranged with the Owner. If for security requirements or other prohibitions, it is impossible or impractical to make a complete cross-connection survey; or if access is denied, a Class III hazard as defined in Section VI C will be assumed and a reduced pressure principle backflow preventer will be required.

B. The District will, after the initial inspection of the premises, inform the owner by letter of any correction deemed necessary, the method of making the correction. Thirty (30) working days will be allowed for correction.

C. Cross connections will not be allowed to remain unless they are protected by an approved backflow preventer, installed, tested and maintained at the owner's expense. Certain fixtures are exempted from this provision and are listed in Section VII.

D. The District shall inform the Owner by letter of any failure to comply by the time of the first re-inspection. The District will allow 15 days for the correction. If there is a failure to comply by the time of the second re-inspection, the District shall inform the Owner by letter that the water service to the Owner's premises will be terminated 14 days from the postmark date of the notice.

E. If the District determines at any time that a serious threat to the public health exists, service shall be terminated immediately.

F. Re-establishment of service before the installation of a backflow preventer may be allowed by the District, when the District determines that no immediate threat to the public exists, and after an agreement has been made between the District, the Department, and the Owner indicating the intention of the Owner to comply with the provisions of these rules. A confirmed purchase order and installation date shall be evidence of good intention to comply by the Owner.

G. The District will allow temporary water service for construction purposes of new commercial or industrial services only if a testable double-check valve with atmospheric vent has been installed at the service entrance. Permanent water service will only be given after the required backflow preventers have been installed.

H. The Owner, upon the request of the District, shall at his expense install, maintain and have tested by an approved certified backflow prevention device tester, any backflow preventer on his premises. The Owner shall be responsible for the submission of test results, the name and certification of the backflow prevention device tester, and the nature of device test failures, and status of required repairs.

I. The Owner shall correct any malfunction of the backflow preventer, which is revealed by periodic testing. This shall include the replacement of any parts or the replacement of the backflow preventer, if deemed necessary by the District.

J. The Owner shall inform the District of any new, proposed or modified cross connections and also any existing cross connection which the Owner is aware of but has not been found by the District. Any Owner having a private well or other private water source shall not have it connected to the District's system. The Owner will be required to have a Reduced Pressure Principle Backflow Preventer at the Water Service entrance, if a private water source is maintained, even if it is not cross-connected to the District's system.

K. The Owner shall not install a by-pass around any backflow preventer unless there is the same type of backflow preventer on the bypass. Owners who cannot shut down operation
during the District's normal business hours for testing must supply the additional devices necessary to allow testing to take place.

L. The Owner shall only install backflow preventers specified and approved by the District and the Department.

M. The Owner shall install the backflow preventer in a manner approved by the District.

N. Installations of reduced pressure backflow preventers in confined spaces below ground level, i.e. pit installations, will not be allowed.

O. If the Owner installs plumbing to provide potable water for domestic purposes which is on the District's side of the approved backflow preventer, such plumbing must have its own approved backflow preventer or individual fixture isolation.

P. The District requires that its distribution system be protected by containment. It is the responsibility of the Owner to control water quality beyond the outlet end of the District prescribed containment device.

VI. DEGREE OF HAZARD
The District recognizes the difference in the threat to its distribution system arising from different types of cross connection. These hazards can be classified as follows:

A. Class I - Low Degree of Hazard
If backflow were to occur, the resulting health significance would be limited to minor changes in the esthetic quality such as taste, odor or color. The foreign substance must be non-toxic and non-bacterial in nature and have no significant health effect.

B. Class II - Moderate Degree of Hazard
If backflow were to occur, the resulting effect on the water supply would be significant changes in esthetic quality such as taste, odor or color. The foreign substance must be non-toxic to humans and non-bacterial in nature and have no significant health effect.

C. Class III - High Degree of Hazard
If backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance may be toxic to humans either chemically, bacteriological or radiologically. Toxicity may result from either short or long-term exposure.

The following are considered Class III hazards and must be protected by containment:

1. Wastewater installations.
2. Industries where a health hazard exists.
3. Hospitals, nursing homes, clinics.
4. Vessel watering points or fixtures.
5. Tank trucks, street sweepers, and other similar units that receive water at the District's shop or any of its hydrants. The District will provide a testable double check valve assembly with hydrant meters. A service charge will become part of the meter rental.
6. Mortuaries or funeral homes where embalming is performed
7. Lawn irrigation systems where chemicals are added.
10. Farms where water is used for other than domestic purposes.
11. Commercial photo developing establishments.
13. Laboratories.
15. Health spas.
16. Any commercial structure in which the specific business activity cannot be ascertained or which contains rental units.

Class III hazards which must be protected by fixture isolation include:
1. Cooling towers
2. Chemically treated boilers.
3. X-ray developers/processors.

VII. EXEMPTIONS
Certain fixtures that constitute cross-connection may be controlled by non-testable backflow preventers and will not require a permit. Examples of these fixtures include:
1. Hose bibbs which are only potential cross-connections.
2. Below the rim outlets which can be replaced by a gooseneck device.
3. Toilets with anti-siphon ballcocks.
4. Any fixture with a built-in atmospheric vacuum breaker which cannot be bypassed.
5. Others as listed in Appendix A of the State regulations.

VIII. PERIODIC TESTING
It is recognized that any backflow preventer can fail and any method of protection can be subverted; thus, periodic testing and inspection is necessary. This includes air gap protection.

A. The District shall be responsible for conducting the initial test upon installation of a backflow prevention device at a service activation.

B. The owner is responsible for periodic testing, per an established District schedule, shall be performed by a certified backflow prevention device tester.

C. The District will bill the owner of the device for testing the device if a test is completed by the District.

D. Any backflow preventer that fails during testing must be repaired as soon as possible. Any extended delay shall require discontinuance of service or other means to ensure protection of public water system unless an exemption is granted by the District.

E. Certain Class III degree of hazard cross connections will not be allowed to continue unprotected for more than 24 hours if the backflow preventer fails the test and cannot be immediately repaired.
The minimum testing frequency for backflow preventers in the District’s system shall be as follows:

(1) Reduced pressure backflow preventers on Class III degree of hazard cross-connections shall be tested at least annually.

(2) Double-check valves, reduced pressure principle backflow preventers and pressure type vacuum breakers on Class I or Class II degree of hazard cross-connections shall be tested annually.

(3) Mechanical air gaps shall be inspected annually. If the air gap has been circumvented, a reduced pressure principle backflow preventer shall be installed at the service entrance.

IX. FIRE PROTECTION SERVICE LINES

A. Approved backflow preventers will not be required for fire sprinkler systems with direct connections from the District's distribution system which have sprinkler drains discharging to the atmosphere or other safer outlet provided that the owner has none of the following: tanks or reservoirs; physical connections from other water supplies; toxic antifreeze or other additives of any kind. All new wet pipe fire sprinkler systems installed after January 1, 2000 will be protected from backflow by the installation of a double-check valve assembly at the service entrance and before the fire sprinkler valve. All newly installed antifreeze loop type fire systems will be protected from backflow by the installation of a double check valve assembly at the juncture of the standard wet fire system and the antifreeze loop. The device will be tested annually. Owners of facilities with antifreeze loops existing on or before June 1, 1992 will be required to certify annually that the antifreeze loop has been serviced and tested by a professional fire sprinkler system firm. Failure to provide certification will result in the District requiring a double check valve installation.

B. Fire sprinkler systems with direct connections from the District's distribution system and with an auxiliary water supply on or available to the premises; or an auxiliary supply located within 1700 feet of the pumper connection, shall be required to have a testable double-check valve assembly installed prior to the auxiliary supply connection or pumper connection.

C. Fire sprinkler systems directly supplied from the District's distribution system and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination, or rivers and ponds, driven wells, mills or other industrial water systems; or where additives are used shall be required to have a reduced pressure backflow preventer installed at the fire service entrance.

D. The rules in this section do not apply to Section X 13D and Life Safety Sprinkler Systems.

X. 13D AND LIFE SAFETY SPRINKLER SYSTEMS (ALL F/S WILL HAVE TESTABLE DOUBLE CHECK ASSEMBLY)

A. If the customer's domestic supply line is used without a separate branch line for the sprinkler heads, then a dual-check valve shall be installed after the meter and before the first branch line.

B. If a branch line is used to service the sprinkler heads only, and is dead-ended, then a dual-check valve shall be installed on the branch line.
C. If the head loss of the dual-check valve becomes detrimental to the effect of the sprinkler system, then a State-approved testable backflow preventer that meets with flow design requirements shall be installed.

XI. LIABILITY
The District, its employees or agents, shall not be liable to any person for any damage, injuries or loss arising out of any act or omission by the District, its employees or agents, in connection with these rules.
APPENDIX

Exempted Devices and Situations.

1. Water closets fitted with anti-siphon ballcocks and installed in accordance with §1006b of the Maine State Plumbing Code shall be permitted without further protection.

2. Urinal and water closet flushometer valves fitted with approved vacuum breakers and installed in accordance with §1003a,c of the Maine State Plumbing Code shall be permitted without further protection.

3. Boilers in non-industrial application and not containing toxic chemicals may be fitted with approved double-check valve assemblies with intermediate atmospheric vent.
PORTLAND WATER DISTRICT

CROSS-CONNECTION CONTROL PROGRAM

1989
REvised May, 2006
REvised September, 2009
REvised August, 2015
REvised June, 2017
REvised June, 2018
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I. PURPOSE & SCOPE

A. To protect the public water system of the Portland Water District (District), from the possibility of contamination or pollution by cross-connections. The primary method for protection of the public water system will be the installation of an approved backflow preventer at the water service entrance to the Owner’s premises.

B. To promote the elimination or control of actual or potential cross-connections between the District’s public water system and the Owner’s private water system.

C. To provide for a continuing program of cross-connection control, which will effectively prevent the contamination or pollution of the public water system by cross-connection.

II. AUTHORITY

A. This program derives its enforceability from the Federal Safe Drinking Water Act of 1974, and the statutes of the State of Maine, 22 M.R.S.A. §§ 42(1), 42(3), 2612(2) & 2612(5) Maine Department of Health and Human Services, Division of Environmental Health, Cross-Connection Rules 10-144.

B. In addition, authority rises from the Rules and Regulations as adopted by the Portland Water District and as approved by the Public Utilities Commission of the State of Maine, from provisions of the Occupational Safety and Health Act, and from provisions of the Maine State Internal Plumbing Code as administered by the Department of Professional and Financial Regulation 02-395 CMR 4.

III. RESPONSIBILITIES

The Portland Water District’s mission is to protect public health, safety, and the environment by providing our customers first-class water, wastewater, and related services. If, in the judgment of the Director of Water Services, an approved backflow preventer is required at the water service entrance to any Owner’s premises to prevent backflow into the public water system, the Director, or his delegated agent, shall give notice to the Owner to install an approved backflow preventer. It shall be the responsibility of the Owner to comply with all provisions of the Cross-Connection Control Program of the District including the installation and maintenance of approved backflow preventers. Failure or refusal to install and maintain such devices, or allow access for inspection, shall constitute grounds for discontinuance of water service to the premises until such devices have been properly installed to the satisfaction of the District.
IV. DEFINITIONS

Approved
Accepted by the District as meeting the applicable specification or procedures as stated or cited in these regulations.

Approved Source
A source of potable water approved by the District for distribution to the public for consumptive purposes following a required and approved treatment process.

Auxiliary Water Supply
Any water supply other than the District’s approved source, on or available to the Owner’s premises and used for consumptive and/or other purposes.

Backflow
The undesirable reversal of flow of water or other foreign liquids, gases or other substances, under positive or reduced pressure, into the District's public water system from any source.

Backflow Preventer
A backflow protection device or means designed to prevent backpressure or backsiphonage. Examples of which are contained herein (testable and atmospheric devices are not approved for submerged applications, i.e. meter pits):

   Air Gap Separation
   A physical separation of at least two (2) pipe diameters, but not less than one inch, to prevent backflow between the free-flowing discharge end of the public water system and any other system. An air gap may be easily defeated if the proper gap distance is not maintained, thus requiring frequent inspections to verify backflow protection is achieved.

   Atmospheric Vacuum Breaker (AVB)
   A device that prevents backsiphonage by creating an atmospheric vent where there is either a negative pressure or sub-atmospheric pressure in a water system. Atmospheric vacuum breakers are among the simplest and least expensive mechanical means of backflow protection. Not an acceptable containment device.

   Double Check Valve Assembly (Testable DCVA)
   A device having two (2) independently operating spring-loaded check valves, with shutoff valves and test cocks for regular testing. They may be used under continuous pressure to protect against both backpressure and backsiphonage.

   Dual Check Valve Assembly (Non-testable Dual Check)
   A device containing two (2) independently acting spring loaded check valves without test cocks. It is used primarily on residential services and is not subject to periodic testing.

   Hose Bibb Vacuum Breaker (HBVB)
   A device that is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker (AVB). Not an acceptable containment device.

   Reduced Pressure Principle Backflow Preventer (Testable RPZ)
   An assembly consisting of two (2) independently operating spring-loaded check valves with an automatically operating differential relief valve located between the two check valves. Includes tightly closing shut off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve.
Backpressure
A condition in which the Owner's water system pressure is greater than the District's water system pressure at the service entrance. This condition can force hazardous substances into the public water system.

Backsiphonage
Backflow resulting from negative or less than atmospheric pressure in the District's public water system. This reduced pressure will allow water to flow opposite the normal direction of flow, potentially introducing hazardous substances into the public water system.

Certified Backflow Prevention Device Tester
A person certified by New England Water Works Association (NEWWA), the American Backflow Prevention Association (ABPA), or the American Society of Safety Engineers (ASSE) as having completed necessary training in the testing of backflow devices.

Containment
A method of backflow prevention that requires a PWD approved backflow preventer at the water service entrance to prevent backflow of hazardous substances from an Owner’s premises into the District's public water system. Protection by containment protects the District's public water system and is in no way meant to protect the premises from internal cross-connections that may be present.

Containment Device
An approved backflow preventer installed at the service entrance, immediately down-stream of any required District water meter and prior to any branch in the private piping.

Contaminant
A substance that will impair the quality of the water to a degree that it creates a contamination hazard to the public leading to poisoning or the spread of disease, by sewage or waste.

Cross-Connection
Any physical or potential connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other water or other substances of unknown or questionable safety, whereby water or other substances may flow from one system to the other. The direction of flow depends on the pressure differential between the two systems.

Cross-Connection Control Program
The administrative and technical procedures the District implements to protect the public water system from contamination via cross connections.

Department
State of Maine Department of Health and Human Services Drinking Water Program.

District
The Portland Water District.

Director of Water Services
The Director, or his delegated representative in charge of the Portland Water District water services, invested with the authority and responsibility for the implementation of the Cross-Connection Control Program and for the enforcement of the provisions herein.
Fixture Isolation
A method of backflow protection in which a backflow preventer is located at or near the potential source of hazard, which is generally a plumbing fixture, to correct an internal cross-connection within an Owner's premises.

Owner
Any person who has legal title to or license to operate or inhabit a property served by the District's public water system through a service connection.

Person
Any individual, partnership, company, public or private corporation, political subdivision or agency of the State, department, agency or instrumentality of the United States or any other legal entity.

Plumbing System
A system of pipes, valves, and appurtenances used to convey water for a wide range of applications.

Pollutant
A foreign substance that, if permitted to get into the public water system, will degrade its quality so as to constitute a pollution hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such water for domestic use.

Potable Water
An approved water, free from impurities present in any amount sufficient to cause disease or harmful physiological effects. Its physical, chemical, bacteriological and radiological quality conforms to the Maine Safe Drinking Water Regulations or any regulations pertaining thereto.

Premises
Any house or building, together with its land and structures, occupied as a residence or business.

Private Water system
Any privately owned plumbing system that begins at the point of delivery from the public water system and is located within the property lines of the Owner’s premises, containing all water piping, fixtures, devices, fittings and connections.

Public Water System
Any publicly owned plumbing system through which potable water is sold, furnished or distributed to the public for human consumption and which is under the control of the District. The system shall not include any portion of a private water system owned and maintained by the Owner.

Substantial Renovation
Renovations in which all, or substantially all, of a building or a buildings plumbing system is removed, replaced, or expanded. Renovations need not involve major structural changes to be considered substantial by the District.

Water Service Entrance
The point of potable water delivery to the Owner's premises, which is beyond the control of the District and is first readily accessible for connections. This will ordinarily be at the point where the water service enters the building and always before an unprotected connection.
V. ADMINISTRATION

A. The District will operate the Cross-Connection Control Program, to include the keeping of necessary records to fulfill Department requirements.

B. The District will protect the public water system through containment; it is the responsibility of the Owner to control water quality on the premises beyond the District prescribed backflow preventer.

C. The District shall review the Cross-Connection Control Program at least every five (5) years. Updates shall be made as needed and communicated to the public.

D. The Owner shall follow the provisions of the District’s Cross-Connection Control Program.

E. The Owner shall ensure the proper operation and maintenance of a backflow preventer and the registration and testing as required by the Maine State Internal Plumbing Code.

F. The Owner shall provide access upon request during normal working hours to the premises for any representative of the District, Department, or any other state or federal agency authorized to do so for the express purpose of inspecting cross-connections and/or backflow preventers.

G. The Owner shall provide copies to the District of any plans, drawings, reports or specifications relating to the private water system.

VI. REQUIREMENTS

A. All water service connections to the District’s public water system, including connections provided specifically for fire suppression systems, shall be evaluated by the District for cross-connection potential and assigned a degree of hazard. The District shall not allow an unprotected cross-connection at any point within its public water system.

B. Cross-connections shall be protected from backflow, under any backpressure or backsiphonage condition, by the use of backflow preventers, assemblies, and methods specified in the Maine State Internal Plumbing Code at 02-395 CMR 4.

C. The Owner shall install only backflow preventers of type and manner approved by the District. The Owner agrees to bear all costs for the installation, testing, repair, maintenance and replacement of the backflow preventer.

D. The Owner shall not install a by-pass around any backflow preventer unless there is the same type of backflow preventer on the bypass. The Owner shall not make a connection to the water service line prior to the backflow preventer.

E. The Owner shall inform the District of any new or modified cross-connections within the premises, also any existing cross-connection that the Owner is aware of but has not yet been discovered by the District. The Owner agrees to obtain approval from the District for all changes in water use and shall comply with any additional requirements imposed by the District for cross-connection control.

F. The Owner shall be responsible for submitting the following to the District: Backflow preventer test results; the name and certification of the certified backflow device tester; the nature of device test failures if any; and the status of necessary repairs.

G. The Owner shall correct any malfunction of the backflow preventer, which is revealed by regular testing or discovered by PWD. This shall include the replacement of any parts or the replacement of the backflow preventer in whole, if deemed necessary by the District.
H. The District may allow re-establishment of service before the repair or replacement of a backflow preventer when the District determines that no immediate threat to the public exists, and after an agreement has been made between the District and the Owner indicating the intention of the Owner to comply with the provisions of these rules. A confirmed purchase order and installation date shall be evidence of good intention to comply by the Owner.

I. Any Owner having an auxiliary water supply must have permission from the District for any proposed connection to the public water system. The District may deny permission to connect to the public water system while an auxiliary water supply is present. The Owner will be required to install a backflow preventer at the service entrance from the public water supply if the auxiliary water supply is maintained by the Owner, regardless of an identified cross-connection to the District’s system.

J. Effective the date of the acceptance of this Cross-Connection Control Program revision, all new residential buildings and substantial renovations (determined by the District), will be required to install a Dual Check Valve Assembly backflow preventer immediately downstream of the water meter. Installation of the dual check valve assembly results in a potential closed loop system within the premises. The Owner shall make provisions to provide for thermal expansion within this closed loop system, i.e. the installation of thermal expansion devices and/or pressure relief valves.

K. At the discretion of the District, water service may be terminated if the District determines at any time that a threat to the public health exists, regardless of the status of the installed backflow preventer.

L. The Owner agrees to indemnify and hold harmless the District from an unprotected or inadequately protected cross-connection within the Owner’s premises.

VII. DEGREE OF HAZARD

The District recognizes the threat to the public water system arising from cross-connections. All threats will be classified by degree of hazard and will require the installation of approved backflow preventers. These hazards can be classified as follows:

A. Low Degree of Hazard/Residential Hazard

A pollution hazard, as defined in the Maine State Internal Plumbing Code at 02-395 CMR 4. If a backflow were to occur, the resulting health significance would be limited to changes in aesthetic quality such as taste, odor or color. The foreign substance must be non-toxic and non-bacterial in nature with no significant health effect.

B. High Degree of Hazard

A contamination hazard, as defined in the Maine State Internal Plumbing Code at 02-394 CMR 4. If a backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance may be toxic and/or harmful to humans either from a chemical, bacteriological, or radiological standpoint. The effects of the contaminants may result from a short or long-term exposure.

Please refer to Table 1 in Appendix A for a list of water uses and the corresponding backflow device requirement for the degree of hazard.
VIII. CROSS-CONNECTION APPROVALS

The District shall not approve an unprotected cross-connection to the public water system. A backflow preventer is required to protect the public water system from backflow anywhere a connection or potential for one exists.

The District shall review all requests for connections to the public water system. The review will include the degree of hazard of any cross-connection and the method of backflow prevention specified. All backflow preventers, assemblies, and methods must be approved per the requirements of the current Maine State Internal Plumbing Code 02-395 CMR 4. When the District determines that backflow protection has been adequately addressed, the District will grant approval to the applicant seeking connection to the public water system.

IX. EXEMPTIONS

For premises existing prior to the start of the program, the District will perform evaluations and inspections at times of redevelopment or when the Owner requests a change in the quantity or type of service provided. Any existing properly functioning backflow preventer shall be allowed by the District to continue in service unless the degree of hazard is such as to supersede the effectiveness of the existing backflow preventer, or result in an unreasonable risk to the public health. Where no backflow preventer is present, or the degree of hazard at the premises has increased, a new backflow preventer must be installed and/or an existing backflow preventer must be upgraded to a device equitable to the degree of hazard present as described in Table 1 in Appendix A. The duration to accomplish such action shall be dependent on the degree of hazard involved as determined by the District. An exemption shall not alter the degree of hazard classification of the cross-connection and shall not exclude the use of some other appropriate backflow preventer. Each exemption may be conditioned on monitoring, testing, analyzing or other requirements to ensure the protection of public health, and shall include a compliance schedule.

X. REGULAR TESTING

Regular testing and inspection of all backflow preventers is necessary to ensure that the backflow preventer has not failed and the method of protection subverted.

A. The District shall be responsible for conducting the initial test and inspection of an Owner’s installed backflow preventer at time of service activation. The Owner shall be charged for any testing and inspection performed by the District.

B. The Owner is responsible for regular testing and inspection of the backflow preventer. A certified backflow device tester shall perform the tests on a schedule established by the District. The Owner must inform the District of all test results. Failure by the Owner to test and inspect the device may result in the District performing the work or disconnecting the service.

C. The Owner must repair any backflow preventer that fails during testing as soon as possible. Any extended delay shall require disconnection of service or other means to ensure protection of the public water system unless the District grants an exemption. Upon completion of the repair, the device will be re-tested at the Owner’s expense to ensure correct operation.
D. Certain high degree of hazard cross-connections will not be allowed to continue unprotected if the backflow preventer fails testing and inspection and cannot be immediately repaired. Parallel installation of two devices is an effective means for the Owner to ensure uninterrupted water service during testing or repair and is strongly recommended when the Owner desires such continuity.

E. The minimum testing frequency for backflow preventers on domestic and fire services connected to the District’s public water system shall be as follows:

(1) Reduced pressure principle backflow preventers on high degree of hazard cross-connections shall be tested and inspected at least annually or as directed by the District.

(2) Double check valves assemblies, reduced pressure principle backflow preventers and pressure type vacuum breakers on low degree of hazard cross-connections shall be tested annually.

(3) Mechanical air gaps shall be inspected annually. If the air gap has been defeated, a reduced pressure principle backflow preventer shall be installed at the service entrance.

F. Backflow preventers may be tested more frequently than as specified above in cases where there is a history of test failures, or the District feels that due to the degree of hazard involved additional testing is warranted. Cost of the additional tests will be borne by the Owner.

G. As a quality assurance measure, the District may randomly select devices for additional testing. This testing, performed by the District, will be at no additional cost to the Owner.

H. When an Owner elects to install a testable backflow preventer in an application where a testable device is not required by the District’s Cross-Connection Control Program, the Owner need not test the device annually for the benefit of the District or in satisfaction of the District’s testing requirements. The District recommends the Owner follow the manufacturer’s guidance for the testing and inspection of the device and will accept results from the Owner for informational purposes.

XI. RECORDS AND REPORTS

Records of cross-connection control devices and locations shall be kept on file with the District as long as the cross-connection is present and until five (5) years after the cross-connection is eliminated. Records of tests for testable cross-connection control devices shall be kept on file with the District and available for inspection by District staff.

The District shall have on file and make available to the public a list of private contractors who are certified with the New England Water Works Association (NEWWA), American Backflow Prevention Association (ABPA), and the American Society of Safety Engineers (ASSE) as backflow device testers.

XII. FEES AND CHARGES

A cross connection device must be tested and operated to the standards outlined in the District’s Cross-Connection Control Program as approved by the State of Maine’s Department of Health and Human Services.

The District will perform the initial test and inspection of the backflow preventer at the time of service activation, the cost of which will be incurred by the Owner. Regular testing of the device, done by private contractors hired by the Owner and at the cost to the Owner, must verify compliance with the program. If the Owner requests additional tests from the District on a periodic basis, the costs to perform the work can be found in the District’s Terms and Conditions.
XIII. FIRE PROTECTION SERVICE LINES

A. All new fire sprinkler systems and new fire service lines connected to the District’s public water system, and all existing unprotected fire sprinkler systems receiving substantial renovations (determined by the District), will be protected from backflow by the installation of a testable double-check valve assembly backflow preventer at the service entrance and before the fire sprinkler valve.

B. All fire sprinkler antifreeze loop systems and systems with chemical additives will be protected from backflow by the installation of a reduced pressure principle backflow preventer at the fire service entrance and before the fire sprinkler valve.

C. Backflow preventers for fire sprinkler systems shall be tested and inspected per the frequency as outlined in Section X.

D. Fire protection service lines dedicated for private fire hydrants only are not required to have backflow preventers installed on the service line.

E. Fire hydrants used for truck fill operations shall be protected from backflow by an approved air gap between the end of the filling hose and the water storage container on the truck.

F. The rules in this section do not apply to Section XIV, NFPA 13D Residential Life Safety Sprinkler Systems; automatic sprinkler systems for one and two family dwellings and manufactured homes.

XIV. NFPA 13D RESIDENTIAL LIFE SAFETY SPRINKLER SYSTEMS

Facilities designed to be protected through an approved automatic sprinkler system installed on the domestic service line, in accordance with NFPA 13D standards, must provide backflow protection through a non-testable dual check valve assembly at the service entrance, immediately after the meter and before any branch line.

XV. LIABILITY

The District, its employees or agents, shall not be liable to any person for any damage, injuries or loss arising out of any act or omission by the District, its employees or agents, in connection with these rules.
APPENDIX A

<table>
<thead>
<tr>
<th>Water Use</th>
<th>System / Degree of Hazard</th>
<th>Category : Device</th>
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<tbody>
<tr>
<td>Domestic Water</td>
<td>Low Hazard</td>
<td>Non-Testable Dual Check***</td>
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<td></td>
<td>High Hazard*</td>
<td>Testable RPZ</td>
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<tr>
<td>Irrigation Water</td>
<td>Dedicated landscape Irrigation**</td>
<td>Testable RPZ</td>
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<td>Private Fire Protection</td>
<td>NFPA 13/13R</td>
<td>Testable DCVA</td>
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<td>NFPA 13 (with chemical agents)</td>
<td>Testable RPZ</td>
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<td>NFPA 13D</td>
<td>Non-Testable Dual Check</td>
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<th>Residential</th>
<th>Non-Residential</th>
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<tbody>
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<td>Low Hazard</td>
<td>Testable DCVA</td>
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<tr>
<td>High Hazard*</td>
<td>Testable RPZ</td>
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<td>Dedicated landscape</td>
<td>Testable RPZ</td>
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<td>Irrigation**</td>
<td>Testable DCVA</td>
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<td>NFPA 13/13R</td>
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<td>agents)</td>
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</table>

TABLE 1

Backflow protection devices listed above are considered the minimum standard for the assumed degree of hazard. The District will evaluate each water system as necessary to determine appropriate degree of hazard present.

*The District considers the following installations to warrant a High Hazard classification:

- Hazardous Material Sites
- Hospitals, Dental Facilities, and Medical Centers
- Laboratories
- Veterinary Clinics
- Food Processing and Beverage Bottling Facilities
- Piers, Docks, and Marinas
- Plasma Centers
- Dry Cleaners
- Mortuaries
- Car Wash Facilities
- Processing Plants
- Auxiliary Water Supplies
- Metal Plating Facilities
- Restricted Access Facilities
- Sewage Treatment Plants and Pump Stations
- Waste Dump Stations
- Commercial Greenhouses
- Others as determined by PWD

** For residential and non-residential landscape irrigation systems connected to the internal plumbing system after the backflow preventer, backflow protection shall be achieved through the appropriate containment device associated with the degree of hazard of the domestic water service. Fixture isolation shall be the responsibility of the Owner per the State of Maine plumbing code.

*** Backflow protection for multi-family residential shall be based on the size (at the tap) of the domestic service line supplying water to the site. For domestic services of 2" diameter and less, a non-testable dual check valve assembly is acceptable. For domestic services greater than 2", a testable double check valve assembly is required at a minimum.