

RESOLUTION NO. 2018- 151

**A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, ADOPTING A CROSS-CONNECTION CONTROL PROGRAM MANUAL FOR CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION PREPARED BY THE ST. JOHNS COUNTY UTILITY DEPARTMENT FOR ALL SYSTEMS SUPPLIED WATER BY THE ST. JOHNS COUNTY UTILITY DEPARTMENT; PROVIDING FOR AN EFFECTIVE DATE.**

WHEREAS, in Rule 62-555.360(2), F.A.C, the State of Florida Department of Environmental Protection ("DEP") requires that each community water system ("CWS") shall establish and implement a cross-connection control program in order to protect the system from contamination caused by cross-connections on customers' premises; and

WHEREAS, Rule 62-555.360(2), F.A.C., requires that the CWS cross-connection control program shall include a written cross-connection control plan meeting certain specified minimum components; and

WHEREAS, Section 7(A) of the St. Johns County Utility Ordinance, Ord. No. 2013-13, prohibits cross-connections without appropriate backflow protection; and

WHEREAS, in order to protect the St. Johns County water system from the possibility of contamination, eliminate and control existing or potential cross-connections between potable and non-potable water systems, provide a continuing inspection program, guide persons active in piping design and installation, and meet or exceed the minimum requirements of DEP, the St. Johns County Utility Department has developed a cross-connection program that includes the *Cross-Connection Program Manual for Cross-Connection Control and Backflow Prevention* ("Manual"), attached hereto as Exhibit A; and

WHEREAS, among other things, the Manual codifies the design, configuration, and installation of backflow devices for the relevant applications; sets forth inspection, testing, repair, and recordkeeping requirements; provides for emergency procedures and enforcement mechanisms; and establishes backflow tester standard practices and procedures; and

WHEREAS, the Board of County Commissioners of St. Johns County, Florida, has determined that adoption of the Manual will positively serve the overall interests of the public and the County.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY:**

**Section 1.** The above recitals are hereby incorporated into the body of this resolution and are adopted as findings of fact.

**Section 2.** The *Cross-Connection Program Manual for Cross-Connection Control and*

*Backflow Prevention*, is hereby adopted by the Board of County Commissioners of St Johns County, Florida, in substantially the form and format attached hereto as Exhibit A, for application to all systems supplied water by the St. Johns County Utility Department, or successor department.

**Section 3.** The provisions of the Manual, including the specifications and regulations for cross-connection control contained in the Manual, may be changed or amended from time to time by resolution of the Board of County Commissioners.

**Section 4.** The Manual shall be used in conjunction with the St. Johns County Utility Ordinance, the St. Johns County Utility Department *Manual of Water, Wastewater, and Reuse Design Standards & Specifications*, the St. Johns County Land Development Code, and other St. Johns County codes, ordinances, and regulations, as may be amended from time to time.

**Section 5.** To the extent that there are scrivener, typographical, or administrative errors that do not change the tone, tenor, or concept of this Resolution, then this Resolution may be revised without subsequent approval by the Board of County Commissioners.

**PASSED AND ADOPTED** by the Board of County Commissioners of St. Johns County, Florida, this 5<sup>th</sup> day of June, 2018.

BOARD OF COUNTY COMMISSIONERS OF ST.  
JOHNS COUNTY, FLORIDA

Attest: Hunter S. Conrad, Clerk

*Pam Halterman*  
Deputy Clerk

By:

*Henry Dean*  
Henry Dean, Chair

RENDITION DATE 6/7/18



# **Cross-Connection Control Program**

**Manual for Cross-Connection Control  
and Backflow Prevention**

**April 2018**

## Table of Contents

1.00	LEGAL AUTHORITY .....	2
2.00	DEFINITIONS .....	2
3.00	BACKGROUND .....	6
3.01	Purpose .....	6
3.02	Causes of Backflow .....	6
4.00	CROSS-CONNECTION HAZARDS AND REQUIRED PROTECTION .....	7
4.01	Cross-Connection Program .....	7
4.02	Residential .....	7
4.03	Commercial/Industrial/Government .....	8
4.04	Fire Protection Systems .....	8
4.05	Backflow Prevention Device Installers .....	9
5.00	INSPECTIONS, TESTING, REPAIR, REVIEW, AND RECORDKEEPING .....	9
5.01	Frequency of Inspection, Testing, Repair, Refurbishment, and Replacement .....	9
5.02	Proposed Construction .....	9
5.03	Recordkeeping .....	10
6.00	EMERGENCY PROCEDURES .....	10
6.01	Emergency Authority .....	10
6.02	Procedure for Confirmed Cross-Connection .....	10
7.00	ENFORCEMENT .....	11
8.00	BACKFLOW TESTERS STANDARD PRACTICES AND PROCEDURES .....	11
8.01	Utility Approved Backflow Prevention Assembly Tester Standard Practices and .....	11
9.00	REFERENCES .....	12
9.01	Approved Backflow Prevention Devices .....	12
9.02	Reference Materials .....	13
10.00	APPENDIX A .....	14

## 1.00 LEGAL AUTHORITY

The federal Safe Drinking Water Act was signed by President Ford on December 16, 1974, setting in motion a chain of laws and regulations that resulted in the State of Florida requirement (Florida Safe Drinking Water Act, sec. 403.850-.864, Fla. Stat.) for all public water systems to have a cross-connection control program. Contained within Rule 62-555.360(2), F.A.C., the State of Florida Department of Environmental Protection adopted the following policy:

Each community water system (CWS) shall establish and implement a cross-connection control program utilizing backflow protection at or for service connections from the CWS in order to protect the CWS from contamination caused by cross-connections on customers' premises. This program shall include a written plan that is developed using recommended practices of the American Water Works Association set forth in *Recommended Practice for Backflow Prevention and Cross-Connection Control: AWWA Manual M14*, Third Edition . . . .

To comply with the rules and regulations of the Florida Department of Environmental Protection ("DEP"); the Florida Safe Water Drinking Act, sec. 403.850-403.864, Fla. Stat.; Rules 62-550.200(18), 62-550.330, 62-555.350(1); (3), 62-555.360(1), (2), (3), (4), 62-550.720(3), 62-550-900, and 62-610, F.A.C.; the American Water Works Association M3 Manual (Seventh Edition); Florida Building Code/Plumbing Section 608 (Sixth Edition); and the National Fire Protection Standard 24 and 25, as adopted in the Florida Fire Protection Code (Sixth Edition), the Utility Department has created this *Manual for Cross-Connection Control and Backflow Prevention* ("Manual"). The Manual has been approved and adopted by the St. Johns County Board of County Commissioners pursuant to Resolution No. 2018-~~2018-13~~.

In the event of a conflict arising from differences between any provision of this Manual and any provision in the W&WW Manual, the Ordinance, or other St. Johns County code, ordinance, or regulation, unless otherwise provided in this Manual, the conflict shall be resolved in favor of whichever provision is stricter.

Please acquaint yourself with the information presented in this Manual. Definitions for the certain terms used herein are included in Section 2.00. The education and commitment of the public are crucial to controlling the hazards presented by cross-connections within our drinking water supply.

## 2.00 DEFINITIONS

The definitions set forth in the St. Johns County Utility Ordinance, Ordinance No. 2013-13, as amended from time to time, are incorporated herein by reference. Further, in addition to words and terms defined elsewhere in this Manual, the following words and terms, when used in this Manual, shall have the meanings set forth below:

**Air Gap Separation (AG)** – A physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An approved air-gap separation shall be a distance of at least two (2) times the diameter of the supply pipe measured vertically above the top rim of the vessel-with a minimum distance of one (1) inch. These devices will be inspected annually.

**Approved** – Accepted by the Utility Department as meeting an applicable specification and approved by the DEP, or their designees.

**Approved Testers** – Certified Testers approved by SJCUD for testing and certifying back flow devices with in the SJCUD system. SJCUD will evaluate and update the approved list annually or as otherwise needed.

**Atmospheric Vacuum Breaker (AVB)** – A device consisting of a float check, a check seat and an air-inlet port. A shut off valve immediately upstream may or not be an integral part of the device. The AVB is designed to allow air to enter the downstream water line to prevent back siphonage. This unit may never be subjected to a backpressure condition or have a downstream shut off valve, or be installed where it is under continuous operation for more than 12 hours.

**Auxiliary Water Supply** – Any water supply on or available to the premises other than the purveyor's approved Utility potable water supply. These auxiliary waters may include water from a private non-potable water supply or any natural source(s) such as well, spring, river, stream, harbor, etc. or "used waters" or "industrial fluids." These waters may be contaminated or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

**Backflow** – The flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source(s) other than its intended source.

**Backflow Prevention Device** – Any effective device, method or construction used to prevent backflow into a potable water system. The type of device used should be based on the degree of hazard, either existing or potential.

**Backflow Prevention Device (Approved)** – A device that has met the requirements of one or more of the following standards:

C506-78-R83	Standard for backflow prevention devices Reduced pressure principle and double check valve types
ASSE-1011	Hose connection vacuum breakers
ASSE-1020	Pressure type vacuum breakers
AWWA-CS1189	Reduced pressure principle back pressure backflow preventers
AWWA-CS1089	Double check valve type back pressure backflow preventers
USC-FCCHR	University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, Los Angeles, Current Edition

**Back-Siphonage** – The flow of water or other liquids, mixtures or substances into the distributing pipes of a potable water supply system from any other source other than its intended source caused by the reduction of pressure in the potable water system

**Backpressure** – Any elevation of pressure the downstream piping system (by pump, elevation of piping, steam and/or air pressure) above the supply pressure point of consideration, which would cause or tend to cause a reversal of the normal flow.

**Certified Backflow Prevention Device Technician** – A person who has proven his competency to the satisfaction of the Utility Department. Each person who is currently certified to make competent tests or to repair, or overhaul and make report on backflow prevention devices, shall be conversant with applicable laws, rules and regulations, and shall have attended and successfully completed the TREEO

(Training, Research, and Education for Environmental Occupations) Certification Program for Backflow Prevention Device Testers at the University of Florida, or other acceptable programs to the Utility Department.

**Chief Engineer** – The Chief Engineer of the Utility's Development Division, or designee.

**Contamination** – An impairment of the quality of the potable water by any solids, liquid or gaseous compounds or mixtures to a degree which would create an imminent danger to the public health, or would create an unacceptable taste, odor or color to the potable water.

**Cross-Connection** – Any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage or other waste, or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as the result of backflow. By-pass arrangements, jumper connections, removable sections, swivel or changeable devices, and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross-connections.

**Director** – The Director of Utilities of St. Johns County, Florida, or designee.

**Double Check Valve Assembly (DCVA)** – An assembly composed of two single, independently acting, check valves, including tightly closing shut off valves located at each end of the assembly. A valve that is drip-tight in the normal direction of flow when the inlet pressure is one p.s.i. and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g., clapper) shall be internally weighted or otherwise internally spring loaded to promote rapid and positive closure and suitable connections for testing the water tightness of each check valve.

**Dual Check Valve (DuC)** – A Dual Check Valve contains two internally loaded, independently operated check valves. In a back pressure condition the increase in pressure will cause the checks to close. In a back siphonage condition, a sub atmospheric condition at the inlet and the loading of the checks will cause the checks to close.

**FDEP** – The Florida Department of Environmental Protection.

**Hazard, Degree of** – A qualification of what potential and actual harm may result from cross-connections within a water using facility. Establishing the degree of hazard is directly related to the type and toxicity of contaminants that could feasibly enter the Utility's water supply system and is determined by the Utility.

**Hazard, Health** – Any condition, device or practice in a water system or its operation that creates, or may create, a danger to the health and well-being of users. A Cross Connection or potential cross-connection involving any substance that, if introduced into a potable water supply, could cause death or illness, spread disease, or have a high probability of causing such effects. This is considered a high hazard condition.

**Hazard, Non-Health** – A condition through which an aesthetically objectionable or degrading material not dangerous to health that may enter the public water system or a potable consumer's water system. A cross-connection or potential cross-connection involving any substance that generally would not be a

health hazard but would constitute a nuisance or be aesthetically objectionable, if introduced into the potable water supply. This is considered a low hazard condition.

**Industrial Piping System-Consumers** – Any system used by the consumer for transmission of or to store any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances to produce convey or store substances, which are or may be polluted or contaminated.

**Ordinance** – The St. Johns County Utility Ordinance, Ordinance No. 2013-13, as amended from time to time.

**Pollution** – The presence of any foreign substance (organic, inorganic or biological) in water which tends to degrade it's quality so as to constitute a 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 waters for domestic use.

**Reclaimed Water (Reuse Water)** – Treated domestic wastewater which is suitable for a direct beneficial use or controlled use that would not otherwise occur and is not safe for human consumption.

**Reduced Pressure Backflow Preventer (RP)** – A device containing within its structure a minimum of two independently acting, approved check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the supply pressure, a predetermined amount so that during normal flow and at cessation of normal flow the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to atmosphere, shall operate to maintain the pressure between the check valves less than the supply pressure. The unit shall include tightly closing shutoff valves located at each end of the device, and each device shall be fitted with properly located test cocks.

**Utility, or Utility Department** – The St. Johns County Utility Department.

**Vacuum Breaker-Pressure Type (PVB)** – A pressure vacuum breaker is similar to an atmospheric vacuum breaker except that the checking unit "poppet valve" is activated by a spring. This type of vacuum breaker does not require a negative pressure to react and can be used on a pressure side of a valve.

**Water Purveyor** – The owner or operator of the Utility's potable water system supplying an approved water supply to the public. The Utility operates under a valid permit from the Florida Department of Environmental Protection. As used herein the terms Water Purveyor and the Utility may be used synonymously.

**Water System, Customer's** – Any water system located on the consumer's premises, whether supplied by the Utility potable water system or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

**Water Used** – Any water supplied by a Water Purveyor from the Utility's potable water system to a customer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the Water Purveyor.



**W&WW Manual** – The St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards & Specifications, as amended from time to time.

### **3.00 BACKGROUND**

#### **3.01 Purpose**

This Manual was prepared for the following purposes:

- 3.01.1 To protect the Utility's water supply from the possibility of contamination by isolating within its Customers' Water Systems, contaminants or pollutants which could, under adverse conditions, backflow through uncontrolled cross-connections into the Utility's water supply
- 3.01.2 To eliminate or control existing cross-connections, actual or potential, between the customers' potable water system(s) and non-potable water system(s) plumbing fixtures and industrial piping systems
- 3.01.3 To provide a continuing inspection program of cross-connection control which will systematically and effectively control all actual or potential cross-connections which may be installed in the future
- 3.01.4 To guide persons active in piping design and installation to incorporate and correctly install appropriate backflow prevention devices

#### **3.02 Causes of Backflow**

Backflow cannot usually be completely eliminated since it is often initiated by accidents or unexpected circumstances. However, some causes of backflow can be partially controlled by good design and informed maintenance. Back-siphonage and backpressure are the major causes of backflow, as presented below.

3.02.1 **Back-Siphonage:** Back-siphonage is caused by reduced or negative pressure being created in supply piping. The principal causes of back-siphonage are:

- A. Line repair or break which is lower than a service point. This will allow negative pressures to be created by water trying to flow to a lower point in the system.
- B. Undersized piping. If water is withdrawn from a pipe at a very high velocity, the pressure in the pipe is reduced and the pressure differential created can cause water to flow into the pipe from a contaminated source.
- C. Lowered pressure in water main due to high water withdrawal rate such as firefighting, water main flushing, or water main breaks.
- D. Reduced supply main pressure on the suction side of a booster pump.

3.02.2 **Backpressure:** Backpressure may cause backflow to occur where a potable water system is connected to a non-potable system of piping and the pressure in the non-potable system exceeds that in the potable system. The principal causes of backpressure are:

- A. Booster pump systems designed without backflow prevention devices.

- B. Potable water connections to boilers and other pressure systems without backflow prevention devices.
- C. Connection with another system that may, at times, have a higher pressure.
- D. Water stored in tanks or plumbing systems, which by virtue of their elevation would create head sufficient to cause backflow if pressure were lowered in the Utility's system.

#### **4.00 CROSS-CONNECTION HAZARDS AND REQUIRED PROTECTION**

##### **4.01 Cross-Connection Program**

- 4.01.1 All on-site water lines, beginning at the discharge side of the domestic water meter, are the responsibility of the customer. Unless specifically stated otherwise herein, the customer shall be responsible for installation, inspection, testing, and maintenance of any backflow protection devices required by this Manual.
- 4.01.2 It shall be unlawful for any person to cause a cross-connection with the Utility's potable water system, reclaimed water system, wastewater system, or raw water system. All service connections shall comply with the W&WW standards.
- 4.01.3 No private well shall be interconnected with any residential, commercial, industrial, or governmental domestic piping that is connected to the Utility's potable water system
- 4.01.4 All new construction for which a building permit has been issued shall have installed on all potable and fire protection system lines a backflow prevention device acceptable to FDEP and of a size and design approved by the Chief Engineer.
- 4.01.5 All backflow prevention devices shall be installed according to the approved site utility plans for the property, or as determined by the Chief Engineer.
- 4.01.6 All backflow prevention devices shall be certified by a backflow-prevention technician licensed to operate within St. Johns County. All backflow prevention devices shall be of a size and design acceptable to FDEP and approved by the Chief Engineer.
- 4.01.7 An approved backflow prevention device shall be installed in accordance with this Manual for cross-connection control. A standard detail for the installation of each type of device is included in the Utility Standards Manual.
- 4.01.8 Air Gap Separations, Atmospheric Vacuum Breakers, single check valves, and Vacuum Breaker-Pressure Type are not approved backflow prevention devices for any residential, commercial, industrial, or government water service connection. Dual Check Valves are only approved for use on potable water services which have residential irrigation systems using reclaimed water.
- 4.01.9 Any device, equipment, or situation not covered by this cross-connection policy where water is connected or used and which may constitute a potential hazard may be handled at the discretion of the Utility.

##### **4.02 Residential**

- 4.02.1 All new and existing residential irrigation systems using potable water shall comply with the

- backflow prevention requirements of Florida Building Code, Plumbing Section.

4.02.2 All new and existing residential irrigation systems using reclaimed water shall be required to install a Dual Check Valve on the potable water supply, which shall be installed and maintained by the Utility.

4.02.3 All new and existing multi-family dwellings with more than four dwelling units or more than three stories shall install and maintain a Reduced Pressure Backflow Preventer.

**4.03 Commercial/Industrial/Government**

4.03.1 An approved Reduced Pressure Backflow Preventer is the minimum backflow protection that must be provided at or for the water service connection for each commercial, industrial, or government facility.

4.03.2 Backflow prevention devices for commercial, industrial, or government customers may be screened with landscaping, if the backflow prevention devices would otherwise be visible from the public right of way. All such landscaping shall be installed and maintained by the customer and in a manner that does not interfere with access, maintenance, or operation of the backflow prevention device, per the St. Johns County Land Development Code, Ordinance No. 99-51, as amended.

**4.04 Fire Protection Systems**

All backflow prevention devices installed on fire protection system lines must be UL-listed for fire protection systems and shall be installed and certified by a fire protection contractor licensed by the State of Florida. An approved backflow prevention device, of the type designated, shall be installed on each type of fire protection service identified in Table 4-1, below.

**TABLE 4-1  
 Fire Systems**

Class	Fire Protection Service	Minimum Type of Protection
Class 1	A closed automatic fire system without pumper connection, i.e. a system having 20 heads or less	DCVA
Class 2	A closed automatic fire system with pumper connection	DCVA
Class 3	A closed automatic fire system with pumper connection and an auxiliary water supply on or available to the premises; or an auxiliary water supply which may be located within 1,700 feet of the pumper connection	RP
Class 4	A closed automatic fire system with a closed pressure tank supply (this class may have a jockey pump interconnected with the domestic water supply and/or an air compressor connection)	RP
Class 5	A closed automatic sprinkler system interconnection with an auxiliary water supply	RP
Class 6	Fire system used for the combined purposes of supplying the automatic sprinklers, hose lines, fire hydrants, and standpipes and for industrial purposes. > Self-Draining Fire Hydrants on premises presenting a health or system hazard (facilities where ground seepage of toxic materials may occur)	RP

Class	Fire Protection Service	Minimum Type of Protection
	➤ Self-Draining Fire Hydrants on premises presenting a pollution causing hazard (facilities where ground seepage of toxic materials may occur)	

**4.05 Backflow Prevention Device Installers**

All backflow prevention devices shall be installed in accordance with this Manual, the W&WW Manual, and the device manufacturer's installation instructions. The installer of the backflow prevention device is responsible for ensuring the device is working properly when installed. All Reduced Pressure Backflow Preventers and Double Check Valve Assemblies shall be tested by a State approved certified backflow prevention device technician promptly upon installation and approval by the Utility. The installer shall furnish a completed Test and Maintenance Report in the format approved by the Utility. A copy of the approved Test and Maintenance form is attached in Appendix A.

**5.00 INSPECTIONS, TESTING, REPAIR, REVIEW, AND RECORDKEEPING**

**5.01 Frequency of Inspection, Testing, Repair, Refurbishment, and Replacement**

- 5.01.1 All backflow prevention devices or assemblies for commercial, government, industrial, and multi-family service connections required or allowed under this Manual shall be tested, at the expense of the customer, after installation or repair and annually thereafter.
- 5.01.2 All backflow prevention devices or assemblies for residential service connection required or allowed under this Manual shall be tested after installation or repair and biennially thereafter.
- 5.01.3 All backflow prevention devices installed on fire protection system lines shall be tested annually by a State of Florida licensed fire protection contractor in accordance with National Fire Protection Standard 24 and 25 as adopted in the Florida Fire Protection Code (Sixth Edition). The customer shall forward the test results to the Utility.
- 5.01.4 All backflow prevention devices or assemblies shall be repaired if they fail to meet the applicable performance standards of this Manual, the W&WW Manual, or the device or assembly manufacturer's specifications.
- 5.01.5 At the discretion of the Director, upon either the request of the customer or the failure of the customer to timely comply with the testing or repair requirements of this Section, the Utility may perform, or have performed, any such required testing or repair, at the customer's expense, at a cost of labor, equipment, and material, plus twenty-five percent (25%), which shall be added to the customer's water bill.
- 5.01.6 In addition to the other penalties provided by this Manual or the Ordinance, the failure of the customer to comply with the testing or repair requirements of this Section may result in termination of service after ten (10) days' notice tagged to the front door, unless the backflow is determined to be a hazardous situation, in which case, disconnection may be made immediately.

**5.02 Proposed Construction**

All new construction plans and specifications for commercial, industrial, or government facilities shall be reviewed for possible cross-connection hazards by the Utility Development Department personnel.

During this review, backflow prevention requirements shall be determined in accordance with this Manual, the W&WW Manual, and the F.A.C.

### **5.03 Recordkeeping**

Written reports of any backflow prevention device or assembly testing or repair required by this Manual shall be submitted by the customer to the Director. The Utility shall maintain the cross-connection control records and backflow prevention device testing and repair records. These records will include a current inventory of all backflow preventers in the service area and the records for the installation, inspection, testing, and repair of each backflow prevention device. The records may be maintained in either electronic or paper format.

## **6.00 EMERGENCY PROCEDURES**

### **6.01 Emergency Authority**

6.01.1 The Director shall take whatever emergency action is deemed necessary and appropriate to protect persons or property from any injury, loss, or damage which may reasonably be expected to result from a specific violation of this Manual. The Director is authorized to interrupt potable water service for any property connected to the Utility's water system.

### **6.02 Procedure for Confirmed Cross-Connection**

6.02.1 In the event that a cross-connection is discovered immediate action is required:

- A. Immediately turn off the reclaimed and/or auxiliary water system.
- B. Keep the potable system pressurized.
- C. Confirm all backflow assemblies are properly working by testing each one.
- D. Call the Reclaimed Water Coordinator or Environmental Manager or Water Division Manager for the area in which you are working. The Reclaimed Water Coordinator, Environmental Manager, and/or Water Division Manager will immediately contact the administrators of the Utility Department.

6.02.2 If a backflow assembly(s) has failed, the Utility will:

- A. Collect water samples from the potable system and perform bacteriological analysis.
- B. Assist in identifying the location(s) of backflow and
- C. Eliminate the cross connection(s).
- D. Conduct a dye test to verify that all cross-connections have been eliminated
- E. Flush and disinfect contaminated Utility systems by maintaining a chlorine residual of at least 50 mg/L for 24 hours. Retest after 24 hours.
- F. Work with customer to flush and disinfect contaminated private systems by maintaining a chlorine residual of at least 50 mg/L for 24 hours. Retest after 24 hours.

- G. Report cross-connection to regulatory agencies, as required.
- H. Review causes of incident and develop procedures to avoid similar incidents in the future.

6.02.3 If a backflow assembly(s) has functioned properly, the Utility will:

- A. Assist in identifying the location(s) of backflow and
- B. Eliminate the cross connection(s).
- C. Work with customer to flush and disinfect contaminated private systems by maintaining a chlorine residual of at least 50 mg/L for 24 hours. Retest after 24 hours.
- D. Report cross-connection to regulatory agencies, as required.
- E. Review causes of incident and develop procedures to avoid similar incidents in the future.

## **7.00 ENFORCEMENT**

Violations of this Manual shall be prosecuted as provided in Section 36 of the Ordinance. Moreover, the violator shall be liable to the Utility for any expense, loss or damage incurred by the Utility by reason of such violation, including attorney's fees, as well as all costs and expenses incurred by the Utility associated with the interruption and restoration of potable water service for the property, building, structure, or facility where the violation occurred.

Upon discovery of a cross connection, the Utility shall either eliminate the cross-connection by installation of an appropriate backflow prevention device acceptable to the Utility, at the customer's expense, at a cost of labor, equipment, and materials, plus twenty-five percent (25%), or shall discontinue service until the contaminant source is eliminated.

## **8.00 BACKFLOW TESTERS STANDARD PRACTICES AND PROCEDURES**

### **8.01 Utility Approved Backflow Prevention Assembly Tester Standard Practices and Procedures**

- 8.01.1 All testers and anyone repairing backflow prevention assemblies that are connected to the Utility water distribution system must be conversant with applicable laws, rules and regulations, and shall have attended and successfully completed the TREEO (Training, Research, and Education for Environmental Occupations) Certification Program for Backflow Prevention Device Testers at the University of Florida, FWPCOA (Florida Water Pollution Control Operators Association) or other acceptable programs to the Utility. Anyone testing or repairing backflow prevention assemblies shall review and adhere to the Utility Tester Practices and Procedures. Testers found out of compliance with any provision of this Manual, including these tester practices, the W&WW Manual, the Ordinance, or any other County ordinance or regulation may have their testing privileges suspended or canceled, may be removed from the Utility List of Approved Backflow Prevention Testers List, and may have any test reports they submitted not recognized or accepted.

8.01.2 The Utility Tester Practices and Procedures are as set forth below:

- A. The Utility Approved tester shall only record data and sign test forms of assemblies they have tested. A tester shall not falsify any data or results obtained from the field-test and reported on the Backflow Prevention Assembly Test Report. All data shall be legibly submitted.
- B. The Utility Approved tester shall not circumvent the installed backflow prevention equipment by removal or alteration of the assembly or any of its components. In extreme cases such as severe freeze damage and when no immediate replacement is available, this MAY be allowed if approval is granted by the Utility and will be determined on a case-by-case basis.
- C. The Utility Approved tester shall submit the appropriate **Passing or Failing** Field Testing and Maintenance report to the Utility within 10 business days of the test. The tester shall provide a copy of the completed field Backflow Prevention Assembly Test Report to the water user upon completion of the field test procedures.
- D. The Utility Approved tester shall confirm **ALL DATA** (Make, model, size, serial number, meter number, etc.) on the Backflow Prevention Assembly Test Report is correct for the assembly being tested.
- E. All Utility Approved testers desiring to remain on the List of Approved Testers shall submit a copy of their recertification every two years – **NO EXCEPTIONS**. Additionally all Utility Approved testers will submit a copy of their annual calibration report for the testing equipment they are using to ensure that the equipment meets the manufacturer's standards for accuracy.

8.01.3 Any Utility Approved tester failing to comply with Utility Tester Practices & Procedures or the Cross Connection Control Program may be subjected to loss of testing privileges and removal from the list of approved testers within the Utility area of authority. The Utility will notify an approved tester when they commit an offense and the following consequences.

- A. **FIRST OFFENSE** – Verbal warning and consultation with Utility Personnel.
- B. **SECOND OFFENSE** – Written Warning and/or Suspension of testing privileges for up to thirty (30) days depending on the frequency and severity of the offense.
- C. **THIRD OFFENSE** – Revocation of testing privileges within the Utility-Service area and removal from the list of approved testers.

## **9.00 REFERENCES**

### **9.01 Approved Backflow Prevention Devices**

The current list of approved devices by the Utility Department is in the W&WW Manual. The list is not intended to limit the distribution of devices to only those listed, but to indicate most of the devices available that meet the standards, specifications or requirements of the approving agencies recognized by the Florida Department of Environmental Protection. The listed backflow prevention devices are

recognized by the Utility as acceptable and in compliance with the standards set forth by one or more of the following approving agencies:

AWWA – American Water Works Association – C506-78(R83)

ASSE – American Society of Sanitary Engineers – 1001-70, 1011-70, CS11-89, CS10-89, 1020-74

USC-FCCHR – University of Southern California, Foundation for Cross Connection Control and Hydraulic Research, Los Angeles, 8<sup>th</sup> Edition, 1988

SBCC – Southern Building Code Congress (Standard Plumbing Code)

### **9.02 Reference Materials**

Florida Administrative Code Rule 62-550, 62-555, and 62-610

Backflow Prevention – Theory and Practice – University of Florida Division of Continuing Education, Copyright 1990.

“Cross-Connection Control Manual,” City of Palm Coast Utility Department, 2016.

Cross-Connection Control Manual, US Environmental Protection Agency, Washington D.C., 1975, 430/9-73-002 Water Supply Division, USEPA

Public Law 93-523, “Safe Drinking Water Act,” December 16, 1974

“Recommended Practice for Backflow Prevention and Cross-Connection Control,” AWWA Manual M14, Current Edition

“Rules of the Department of Environmental Protections,” 17-555.360, State of Florida, Department of Environmental Protection, “Water Supplies”

Rules of the Department of Health and Rehabilitative Services, Division of Health, Chapter IOD-9, Plumbing, and Chapter IOD-4, Water Systems, State of Florida

Florida Building Code/Plumbing Section 608 (Sixth Edition)

National Fire Protection Standard 24 and 25 as adopted in the Florida Fire Protection Code (Sixth Edition)



# APPENDIX A

**St. Johns County Utility Department  
Backflow Test & Maintenance Report**

CUSTOMER: \_\_\_\_\_ ACCOUNT #: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

MAILING ADDRESS: \_\_\_\_\_

LOCATION OF ASSEMBLY: \_\_\_\_\_ METER# \_\_\_\_\_

TYPE OF ASSEMBLY: RP  DC  PVB  SIZE: \_\_\_\_\_

SERVICE TYPE: POTABLE  IRRIGATION  FIRE  FIRE-BYPASS  OTHER \_\_\_\_\_

MANUFACTURE: \_\_\_\_\_ MODEL: \_\_\_\_\_ SERIAL #: \_\_\_\_\_

GAUGE MANUF: \_\_\_\_\_ SERIAL #: \_\_\_\_\_ DATE CALIBRATED: \_\_\_\_\_

Remarks: (New or Replacing BF) \_\_\_\_\_

**THIS ASSEMBLY:  PASSED  FAILED**

Check Valve #1	Relief Valve	Check Valve #2	Pressure Vacuum Breaker
<input type="checkbox"/> leaked or <input type="checkbox"/> closed tight	opened at: _____ psi or did not open <input type="checkbox"/>	<input type="checkbox"/> leaked or <input type="checkbox"/> closed tight	<i>Air Inlet:</i> did not open <input type="checkbox"/> or opened at _____ psi
differential pressure across check valve _____ psi	<i>Outlet shut-off valve:</i> <input type="checkbox"/> leaked <input type="checkbox"/> closed tight	<b>OPTIONAL TEST</b> differential pressure across check valve _____ psi	<i>Check Valve:</i> leaked <input type="checkbox"/> or held at _____ psi
<input type="checkbox"/> cleaned only Replaced: rubber kit <input type="checkbox"/> CV assembly <input type="checkbox"/> or disc <input type="checkbox"/> O-rings <input type="checkbox"/> Seat <input type="checkbox"/> spring <input type="checkbox"/> stem/guide <input type="checkbox"/> retainer <input type="checkbox"/> lock nuts <input type="checkbox"/> Other <input type="checkbox"/>	<input type="checkbox"/> RV cleaned only Replaced: RV rubber kit <input type="checkbox"/> RV assembly <input type="checkbox"/> or disc <input type="checkbox"/> diaphragm (s) <input type="checkbox"/> seat <input type="checkbox"/> spring <input type="checkbox"/> guide <input type="checkbox"/> O-rings <input type="checkbox"/> Other <input type="checkbox"/>	<input type="checkbox"/> cleaned only Replaced: rubber kit <input type="checkbox"/> CV assembly <input type="checkbox"/> or disc <input type="checkbox"/> O-rings <input type="checkbox"/> seat <input type="checkbox"/> spring <input type="checkbox"/> stem/guide <input type="checkbox"/> retainer <input type="checkbox"/> lock nuts <input type="checkbox"/> Other <input type="checkbox"/>	<input type="checkbox"/> cleaned only Replaced: rubber kit <input type="checkbox"/> CV assembly <input type="checkbox"/> disc, air inlet <input type="checkbox"/> disk, CV <input type="checkbox"/> seat, CV <input type="checkbox"/> spring, air inlet <input type="checkbox"/> spring, CV <input type="checkbox"/> retainer <input type="checkbox"/> guide <input type="checkbox"/> O-rings <input type="checkbox"/> Other <input type="checkbox"/>
differential pressure across check valve _____ psi	Relief valve opened at _____ psi	differential pressure across check valve _____ psi	air inlet _____ psi check valve _____ psi

I hereby certify that this data is accurate and reflects the proper operation and maintenance of the assembly. **NOTE: All repairs shall be completed within ten (10) working days.**

Company Name: \_\_\_\_\_ Company Phone #: \_\_\_\_\_

Testers Name: \_\_\_\_\_ Cert. #: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Please Fax Test Results to:  
 (904) 209-2718 Attn: Backflow Coordinator  
 Phone:  
 (904) 209-2728 (Press Option 4)

Or Mail Test Results to: St. Johns County Utility Department  
 Attn: Backflow Coordinator  
 P.O. Drawer 1988  
 St. Augustine, FL 32085-1988