

RESOLUTION NO. 15R-2474

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF SARASOTA, FLORIDA, ADOPTING THE 2015 EDITION OF THE CITY OF SARASOTA "CROSS-CONNECTION CONTROL PLAN;" PROVIDING FOR READING BY TITLE ONLY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Ordinance No. 14-5103, establishing a Cross-Connection Control Program, authorizes the Sarasota City Commission to adopt by resolution a "Cross-Connection Control Plan," in conformance with the Ordinance and Rule 62-555.360 of the Florida Administrative Code (FAC); and

WHEREAS, the 2015 edition of the City of Sarasota "Cross Connection Control Plan," developed by the City's Utilities Department, sets forth the technical specifications for the installation and testing of backflow prevention devices, as required by Rule 62-555.360, FAC; and

WHEREAS, the 2015 edition of the "Cross-Connection Control Plan" is intended to supersede the "Cross-Connection Control Manual," adopted by Resolution No. 11R-2251;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF SARASOTA, FLORIDA:

Section 1. The City of Sarasota hereby adopts the 2015 edition of the "Cross-Connection Control Plan," attached and incorporated herein. The 2015 edition of the "Cross-Connection Control Plan" is intended to supersede the "Cross-Connection Control Manual" adopted by Resolution No. 11R-2251.

Section 2. This Resolution shall take effect immediately upon adoption and shall remain in effect until further action of the City Commission.

ADOPTED by the City Commission of the City of Sarasota, Florida, upon reading by title only, after posting on the bulletin board at City Hall for at least three (3) days

prior to adoption, as authorized by Article IV, Section 2 of the Charter of the City of Sarasota this 6th day of April, 2015.

CITY OF SARASOTA


Willie Charles Shaw, Mayor

Attest:


Pamela M. Nadalini, MBA, CMC
City Auditor and Clerk

- Yes Mayor Willie Charles Shaw
- Yes Vice Mayor Susan Chapman
- Yes Commissioner Suzanne Atwell
- Yes Commissioner Eileen Walsh Normile
- Yes Commissioner Stan Zimmerman



City of Sarasota
Utilities Department

CROSS-CONNECTION CONTROL PLAN



Utilities Administration Office
1750 12th Street
Sarasota, Florida 34236

Phone Number: (941) 955-2325
Fax: (941) 365-4840

Originally adopted 10/17/11
Revised 4/6/15

TABLE OF CONTENTS

	Page
Appendix.....	iii
I. PROTECTING THE POTABLE WATER SUPPLY.....	1
What is a Cross-Connection?	1
Where are Cross-Connections found?.....	1
Who is required to have a Backflow Preventer?.....	2
II. PURPOSE AND GOALS	2
III. City Ordinance No. 14-5103	3
IV. MAJOR AUTHORITIES.....	3
V. CAUSES OF BACKFLOW.....	3
Cross-Connection.....	3
Backpressure	4
Backsiphonage.....	4
VI. RESPONSIBILITY	5
Responsibility of Water Purveyor (City of Sarasota Utilities Department)	5
Role of Plumbing Inspector	5
Responsibilities of Backflow Preventer Installer/Tester.....	5
Responsibility of Water Customer	6
VII. PERMITTED TYPE OF BACKFLOW PREVENTER	6
Reduced-Pressure Principle Assembly (RP) Backflow Preventer	6
Reduced-Pressure Principle Detector (RPD) Backflow Preventer	7
Air gap separation	7
VIII. ASSESSMENTS/INSPECTIONS	7
Hazard Assessments for New and Existing Water Customers.....	7
IX. WHEN IS A BACKFLOW PREVENTER REQUIRED	8
Non-residential Service Connections.....	8
Residential Service Connections	8
X. INSTALLATION AND OWNERSHIP.....	8
XI. BACKFLOW PREVENTER INSPECTION, TESTING & REPAIR	9
XII. CITY OWNED FACILITIES – INSPECTION, TESTING AND REPAIR	11
XIII. NOTICES OF VIOLATION AND DISCONNECTION OF WATER SERVICES.....	11
XIV. PENALTIES	12
XV. RECLAIMED WATER	12
XVI. ACCIDENTAL BACKFLOW.....	12

XVII. ANNUAL REPORTING REQUIREMENT13

XVIII. PUBLIC AWARENESS.....13

XIX. CONTACT INFORMATION14

APPENDIX

- A. Partial list of Plumbing Hazards as provided in the model U.S. EPA Cross-Connection Control Manual
- B. City of Sarasota Ordinance No. 14-5103 adopted on April 6, 2015
- C. Illustrations of Backpressure as provided by the model U.S. EPA Cross-Connection Control Manual
- D. Illustrations of Backsiphonage as provided by the model U.S. EPA Cross-Connection Control Manual
- E. Illustration of Reduced-Pressure Principle Assembly Backflow Preventer and Air Gap
- F. Cross-Connection Site Survey Form
- G. Certificate of Relocation Variance for Backflow Preventer
- H. Backflow Prevention Assembly Test Report
- I. Emergency Procedure Flowchart
- J. Cross-Connection Control Program Annual Report - Form 62-666.900(13)

I. PROTECTING THE POTABLE WATER SUPPLY

Safe, clean drinking water is one of the most basic of human necessities. In an effort to protect its water supply, and in accordance with the Safe Drinking Water Act of 1974 and the laws and regulations of the State of Florida, the City of Sarasota has implemented this Cross-Connection Control Plan.

What is a Cross-Connection?

A Cross-Connection occurs in a plumbing system when the potable water supply is connected to a non-potable (not fit to drink) source. For the Residential Water Customer, some sources of non-potable water include Irrigation Systems and Auxiliary Water Systems. Cross-Connection of an unprotected water supply can result in contamination of the public water supply.

The City's water distribution system is designed for the water to flow from the water treatment plant to the Water Customer. But wherever a Cross-Connection exists, and the potable water supply is not protected by a Backflow Preventer, Backflow may occur due to either *backsiphonage* or *backpressure*.

Backsiphonage occurs when the pressure in the distribution system drops, siphoning water from the Water Customer's plumbing system into the distribution system. The pressure drop could be caused by a line break or high water withdrawal such as with fire fighting. A Cross-Connection that may result in *backsiphonage* would be a garden hose left below the rim water inlet to a tank containing toxic chemicals.

Backpressure may cause Backflow when a potable water system is connected to another system operating at a higher pressure. When an unprotected water line is attached to the higher pressure system, its contents can be "pumped" back into the potable water system. Cross-Connections that may result in Backflow due to backpressure include booster pumps designed without Backflow prevention devices and potable water connections to irrigation and other pressure systems.

Where are Cross-Connections found?

Whenever a plumbing system is modified there is the potential to create Cross-Connections. This is especially true when the property is served by an Auxiliary Water Supply such as Reclaimed Water, a well, or a lake, pond or canal, in addition to the potable water supply. Other sources of Cross-Connection include: laboratory equipment; Irrigation Systems; recirculating water systems; fire sprinkler systems; and hose connections. (A partial list of plumbing hazards as provided in the model U.S. EPA Cross-Connection Control Manual is attached hereto as ***Appendix A.***)

Who is required to have a Backflow Preventer?

Pursuant to City Ordinance 14-5103, all Non-residential Service Connections (Commercial and Industrial Water Customers) are required to install a Backflow Preventer. This includes but is not limited to customers who have Fire Prevention Systems. Residential Water Customers are required to install a Backflow Preventer if their premises contain an actual or potential Cross-Connection, an Auxiliary or Reclaimed Water System, an Irrigation System that is using potable water, a wet-pipe sprinkler or wet standpipe fire protection system that is using potable water; or a Tall Building of five or more floors above ground level.

II. PURPOSE AND GOALS

The purpose of this Cross-Connection Control Plan is to support the City of Sarasota's ordinance by detailing a program to prevent Cross-Connections to the public water supply distribution system, to inform and educate the City's Water Customers and trained, certified and licensed installers.

Some of the goals of this program are:

1. To protect the City's public water supply from the possibility of contamination or pollution by isolating within its Water Customer's premises or private property, contaminants or pollutants which could backflow or backsiphon into the public water system.
2. To inspect Water Customer's premises to ensure the elimination or control of existing or potential Cross-Connections between the potable water system and any non-potable water systems that may occur as a result of some undiscovered or unauthorized Cross-Connection on a Water Customer's premises or private property.
3. To protect the water supply system against actual or potential Cross-Connections, Backflow and backsiphonage by requiring certain Water Customers to install an appropriate Backflow prevention device.
4. To eliminate, or control, existing Cross-Connections, Backflow and backsiphonage of any other source of water or process water used for any purpose whatsoever which may jeopardize the safety of the water supply or which may endanger the health and welfare of the general public.
5. To provide for the maintenance of a continuing program of Cross-Connection control which will effectively prevent the contamination or pollution of all potable water systems by Cross-Connection.

III. CITY ORDINANCE NO. 14-5103

City of Sarasota Ordinance No. 14-5103, which is codified in Chapter 37 of the Sarasota City Code, sets forth: definitions; requirements for installation, inspections, and testing of Backflow Preventers; rules for repair or replacement of Backflow Preventers; and provisions for enforcement of the ordinance and penalties for violations. The terms and definitions set forth in City Ordinance 14-1503 shall apply in the reading of this Plan. Additional terms defined in the Florida Administrative Code (FAC), but not in this Plan, shall have the meanings set forth in the FAC. *(A copy of Ordinance No. 14-5103 is attached hereto as **Appendix B.**)*

IV. MAJOR AUTHORITIES

The ordinance and this Cross-Connection Control Plan reference several other major authorities:

- Florida Administrative Code, Chapter 62-550, *Drinking Water Standards, Monitoring, and Reporting* ;
- Florida Administrative Code, Chapter 62-555, *Permitting, Construction, Operation, and Maintenance of Public Water Systems*;
- American Water Works Association M14 Manual, Third Edition, *Recommended Practice for Backflow Prevention and Cross-Connection Control* (referred to herein as the "AWWA Manual");
- U.S. Environmental Protection Agency Cross-Connection Control Model Program, as amended; and
- Florida Plumbing Code, as amended.

If any conflicts or inconsistencies exist between the City's Cross-Connection Control Plan, as set forth herein, and the Florida Administrative Code (FAC), the more restrictive rule shall govern.

V. CAUSES OF BACKFLOW

Cross-Connection

A Cross-Connection is any actual or potential connection or structural arrangement between a public or private potable water system, and any other source and/or system through which it is possible to introduce into any part of the potable system any used water, industrial fluids, gas, or substance, other than the intended potable water with which the potable system is supplied. Dangerous microbiological agents, chemicals or industrial fluids may enter and pollute the potable water system as a result of a Backflow by backpressure, or backsiphonage.

Backpressure

Caused when a potable water system is connected to a non-potable system whose pressure exceeds that in the potable system. The principal causes of backpressure are:

1. Booster pump systems designed without Backflow Preventers.
2. Potable water connections to boilers and other pressure systems without Backflow Preventers.
3. Connections with another system that may, at times, have a higher pressure.
4. Water stored in tanks or plumbing systems that by virtue of their elevation would create head pressure sufficient to cause Backflow if pressure were reduced in the public supply main.

*(Illustrations of Backpressure as provided in the model U.S. EPA Cross-Connection Control Manual are attached hereto as **Appendix C.**)*

Backsiphonage

Caused by reduced or negative pressure being created in the supply piping. The principal causes of backsiphonage are:

1. Line repairs or breaks that are 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.
2. 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.
3. Lowered pressure in water main due to high water withdrawal rate such as firefighting, water main flushing, or water main breaks.
4. Reduced supply main pressure on suction side of a booster pump.

*(Illustrations of Backsiphonage as provided in the model U.S. EPA Cross-Connection Control Manual are attached hereto as **Appendix D.**)*

VI. RESPONSIBILITY

The City of Sarasota's Cross-Connection Control Program establishes appropriate guidelines for the enforcement of the provisions of the City Code: to ensure proper installation, design, testing, and maintenance of Backflow Preventers; to keep appropriate records; and, to inform and educate the City's Water Customers regarding Backflow prevention.

Responsibility of Water Purveyor (City of Sarasota Utilities Department)

The City of Sarasota and/or its Utilities Department may be referred to herein as "City," "Water Purveyor" or "the Department." The City's primary responsibility is to prevent contamination or pollution of the public water system from Backflow. This responsibility begins at the source and includes the entire water supply distribution system and ends at the user connection. The City has the responsibility for promulgating and enforcing laws, rules, regulations, and policies necessary to carry out designated responsibilities; the City should always maintain adequate pressure through the system to minimize the hazards of Cross-Connections.

Department staff have received formal Florida Department of Environmental Protection (FDEP) approved training in Backflow prevention, including training to receive a Water Distribution System Operator's License and certifications in Backflow Testing and Repair.

Role of Plumbing Inspector

The plumbing inspector shall enforce the provisions of the Florida Plumbing Code to assure the potability of the Water Customer's water supply from the point of entrance at the Customer service connection to the extremities of the in-house system. The plumbing inspector has the explicit responsibility of preventing Cross-Connections from being designed and built into the structures within its jurisdiction. The plans inspector shall inquire about the intended use of water at any point where it is suspected that a Cross-Connection might be made or where one is actually called for by the plans. The plumbing inspector shall have primary enforcing responsibilities of new installations, alterations, or repairs of Customer water systems and shall provide the Health Official and the Water Purveyor with the assistance required to enforce these provisions.

Responsibilities of Backflow Preventer Installer/Tester

Only licensed plumbers or those explicitly authorized by law or regulation may install a Backflow Preventer. Prior to any work commencing, a plumbing permit must be obtained through the City of Sarasota Building Department. The installer's responsibility is to assure proper installation of Backflow Preventers according to this Plan, the AWWA M14 Manual, the manufacturer's installation instructions and those provided by the Department. The installer is also responsible for ensuring a Backflow Preventer is tested

and working properly after it is installed. Only a licensed plumber, Fire Marshall's office, or certified Backflow Prevention Technician may test, repair, or provide maintenance to Backflow Preventers. The certified Backflow Prevention Technician is responsible for acquiring and maintaining certification and for providing proof of certification to the City.

Backflow Preventer installers and certified Backflow Prevention Technicians who perform installations, tests and repairs must furnish reports to the City of Sarasota Utilities Department, Cross-Connection Control, 1750 12th Street, Sarasota, Florida 34236, following the installation, testing, repair, or maintenance of a Backflow Preventer.

Responsibility of Water Customer

The Water Customer's responsibility starts at the downstream side of the water service meter and includes any and all water distribution piping on the premises. The Water Customer has the initial responsibility of preventing contaminants and pollutants from entering the water supply system and from entering the public water main or water source from the premises' water supply system. The Water Customer shall ensure the necessary plumbing permits are obtained for new water supply system installations and for alterations or repairs to existing systems.

VII. PERMITTED TYPE OF BACKFLOW PREVENTER

The City of Sarasota requires the use and installation of Reduced-Pressure Principle Assembly (RP) Backflow Preventers that have been approved by the Foundation for Cross-Connection and Hydraulic Research of the University of Southern California (USC Approved). Double check valve assemblies, pressure vacuum breaker assemblies, and dual check devices are not permitted. However, in the event the City determines a greater level of protection or different application is appropriate, it may require a Reduced-Pressure Principle Detector Assembly (RPD), an air gap, or other preventive measures to provide protection against Backflow.

Reduced-Pressure Principle Assembly (RP) Backflow Preventer

A Reduced-Pressure Principle Assembly (RP) Backflow Preventer contains 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 checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the checks 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.

Reduced-Pressure Principle Detector (RPD) Backflow Preventer

A Reduced-Pressure Principle Detector Assembly (RPD) Backflow Preventer is designed for situations requiring the protection of an RP and detection of unauthorized use of water or leaks. This assembly is normally used on fire lines which may contain contaminants.

Air gap separation

An air gap separation is 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 at least double the diameter of the supply pipe measured vertically above the top of the rim of the vessel. In no case shall it be less than 1 inch.

*(Illustrations of Air Gap and Reduced-Pressure Principle Assembly Backflow Preventers are attached hereto as **Appendix E.**)*

VIII. ASSESSMENTS/INSPECTIONS

Hazard Assessments for New and Existing Water Customers

Before water service is provided to a new Water Customer, the City is authorized to perform a hazard assessment to determine if a Backflow Preventer is required. This includes a change in ownership for an existing connection, and new service connections for potable or Reclaimed Water to existing customers. If a customer already has a RP device installed and active, the re-evaluation is not necessary.

The City may perform inspections and risk assessments of existing Water Customer's premises. When possible, inspections shall be scheduled with the Water Customer in advance, however, Water Customer systems should be open for inspection at all reasonable times to authorized representatives of the City or the Florida Department of Health to determine whether Cross-Connections or other structural or sanitary hazards exist. The City has the right to perform an immediate investigation and inspection if a Cross-Connection is suspected or reported. Should the City not be able to enter the structure to perform any inspection, it retains the right to discontinue or turn off the water service if necessary to protect the public water system.

Upon completion of an investigation or inspection, the City's inspector will complete a site survey form. *(A Cross-Connection Site Survey Form is attached as **Appendix F.**)* Should the inspection reveal that a Backflow Preventer must be repaired, replaced or installed, the Water Customer will be notified in writing of the need for repair, replacement or installation within the time periods set forth in Section XI, herein.

IX. WHEN IS A BACKFLOW PREVENTER REQUIRED

Non-residential Service Connections: All Water Customers with a Non-residential Service Connection are required to install a Reduced-Pressure Principle Assembly (RP) Backflow Preventer.

Residential Service Connections: All Water Customers with a Residential Service Connection are required to install a Reduced-Pressure Principle Assembly (RP) Backflow Preventer if their premises contain an actual or potential Cross-Connection, which includes premises with:

- (i) an Auxiliary or Reclaimed Water System;
- (ii) an Irrigation System that is using potable water;
- (iii) a wet-pipe sprinkler or wet standpipe fire protection system that is using potable water; or
- (iv) a Tall Building of five or more floors above ground level.

All temporary or emergency service connections, such as fire hydrants and temporary services serving construction activities, require a Backflow prevention assembly. These assemblies are required to be picked up from the Department.

X. INSTALLATION AND OWNERSHIP

Upon receipt of a notice and demand from the City, a Water Customer shall retain a licensed plumbing contractor, or another who is explicitly authorized by law or regulation, to install a Backflow Preventer within the timeframe provided in the notice. The Water Customer is the owner of the Backflow Preventer and has the responsibility and liability for its proper installation, testing, repair, and maintenance.

The Backflow Preventer shall be installed downstream of the water meter on the Water Customer's property before the first branch or water distribution pipe off the Water Customer's water service pipe. There shall be no unprotected takeoffs from the service line ahead of any meter or Backflow Preventer located at the point of delivery to the Customer's Water system. In the event it is determined that installation of a Backflow Preventer on the Water Customer's property in a location as described above creates a hazard, the Water Customer may request the Water Purveyor consider a relocation variance. *(A Certificate of Relocation Variance for Backflow Preventer is attached hereto as **Appendix G.**)*

In the case of premises having (1) internal Cross-Connections that cannot be permanently corrected and controlled, or (2) intricate plumbing and piping arrangements or (3) where entry to all portions of the premises is not readily accessible

for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous Cross-Connections exist, the public water system shall be protected against Backflow from the premises by installing an approved Backflow Preventer in the service line.

In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impracticable to make a complete Cross-Connection assessment/survey, the public water system shall be protected against Backflow from the premises by an approved Backflow Preventer in each service to the premises.

Installation or replacement of Backflow Preventers 3" or more in diameter shall require a building permit and a Department permit, and may require additional permits such as a right-of-way use permit or permits from such other State agencies as the Florida Department of Environmental Protection. A Department permit is required if the City is required to shut off its main or a 3" or larger meter in order to install, test, or make repairs on a Backflow Preventer. This work typically requires a boil water advisory for those affected by the shut down. Fire Line Backflow Preventers 3" or more in diameter shall be painted New Lime Yellow. Domestic Backflow Preventers 3" or more in diameter shall be painted Blue.

Once the Backflow Preventer has been installed, the Water Customer shall ensure that the plumbing contractor provides the Department with documentation of the installation, in a form acceptable to the City and within the timeframe provided in the notice. If the Department does not receive such documentation, it may utilize the City's employees or a third party to conduct an inspection at the Water Customer's expense.

If a required Backflow Preventer is not timely or correctly installed, the City may, after written notice to the Water Customer: discontinue water service until the Cross-Connection problem is corrected; and/or install a Backflow Preventer, using the City's employees or a third party, at the Water Customer's expense.

In the event the City discovers a Cross-Connection problem that poses an immediate health risk, the City may immediately discontinue water service until the Cross-Connection problem is corrected; and/or install a Backflow Preventer, using the City's employees or a third party, at the Water Customer's expense.

XI. BACKFLOW PREVENTER INSPECTION, TESTING, & REPAIR

Unless otherwise required by state statute or rule, all Water Customers shall have Backflow Preventers located on their properties inspected and/or tested by a licensed plumbing contractor, Fire Marshall's office, or an appropriately trained and certified Backflow Prevention Technician who, in addition, meets one or more of the following requirements:

- Be a licensed plumbing contractor or an employee of a licensed plumbing contractor meeting all the license requirements of the City of Sarasota.
- Be a utility contractor or, an employee of a utility contractor, meeting the requirements of Florida Statute 489, Part 1, while working within the confines of a utility as governed by Florida Statutes 489.113, 489.119, and the Florida Industry Construction Licensing Board, Section 21.E15.
- Be a State licensed Fire Sprinkler contractor meeting all current State and local licensing requirements working within the confines of a fire line water service, fire sprinkler system, or any part of a fire system governed by the license holder.
- Be the owner of a Backflow Preventer or a direct employee of the owner of a Backflow Preventer.
- Be an employee of a City working within the confines of that purveyor's utility.

All Backflow Preventers must be tested utilizing AWWA M14 standards, at the minimum frequency established by City Ordinance 14-5103. The first testing shall be performed at the time of installation. Testing requires a water shutdown usually lasting approximately twenty minutes. For facilities that require an uninterrupted supply of water, and when it is not possible to provide water service from two separate meters, provisions shall be made for a parallel installation of Backflow Preventer. During testing, one device remains on-line while the other is being tested. **The City will not accept an unprotected by-pass around a Backflow Preventer when the device needs testing, repair or replacement. However, fire line Backflow Preventers 3" and larger require a metered by-pass connection.**

All tested and inspected Backflow Preventers shall be labeled or tagged by the plumbing contractor or certified Backflow Prevention Technician. All tags shall contain the tester's name, tester's company name; tester's certification number; the test results; and the date the test was performed. Additionally, the Water Customer shall ensure that after the installation, test, or repair of a Backflow Preventer, a report on a form provided by the City (or a form with the same information) is provided to the City of Sarasota Utilities Department, Cross-Connection Control Program, 1750 12th Street, Sarasota, Florida 34236. *(A copy of that form, Backflow Prevention Assembly Test Report, is attached hereto as **Addendum H.**)*

If the Water Customer fails to conduct the inspection and/or testing or if it is found that a Backflow Preventer has been removed, bypassed, or if an unprotected Cross-Connection exists on the Water Customer's premises, the City may, after written notice to the Water Customer, discontinue water service or conduct the inspection and/or

testing, using the City's employees or a third party, at the Water Customer's expense. Water services will not be restored until such condition or defects are corrected.

All presently installed Backflow Preventers that do not meet the requirements, but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and maintenance requirements under annual testing, be excluded from the requirements of these rules as long as the Water Purveyor is assured that they will satisfactorily protect the public water system. Whenever the existing Backflow Preventer is moved from its present location, requires more than minimum maintenance, or when the City finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved Backflow Preventer meeting the current requirements.

XII. CITY OWNED FACILITIES – INSPECTION, TESTING AND REPAIR

City owned facilities with potable water shall be evaluated by the Department's staff or an approved third party for potential Cross-Connections and installation of appropriate Backflow Preventers according to the degree of hazard. All Backflow Preventers shall be tested annually, unless a less frequent testing schedule is allowed by state statute or rule.

XIII. NOTICES OF VIOLATION AND DISCONTINUATION OF WATER SERVICES

Should an inspection reveal the existence of a potential Cross-connection requiring the repair or installation of a Backflow Preventer, the Water Customer shall be notified in writing of the requirement and given 45 calendar days to comply with the notice. Notwithstanding the above, if the City determines that an immediate health hazard exists as a result of a potential or existing Cross-connection, the City may discontinue water service until a Backflow Preventer is repaired or installed, and tested; or the City may correct the problem using City employees or a third party, at the Water Customer's expense, pursuant to City of Sarasota Ordinance No. 14-5103.

Initial Notices to Water Customers shall be sent by U.S. Mail or hand-delivered to the premises. The Notice shall be sent or delivered to the name and address shown in City of Sarasota billing records. If the name on the billing records is a tenant, a copy of the notice shall be mailed concurrently to the property owner identified in Sarasota County property records. The Notice shall state: the date and time the violation was noted; the conditions or defects that must be corrected; how the stated conditions are to be corrected; and a date by which the correction must be made to avoid discontinuation of water service.

If the Water Customer fails to comply with the initial 45-day notice, the City may, after posting an on-site shut-off Notice on the customer's premises: (1) discontinue water service until the Cross-Connection problem is corrected and/or (2) repair, replace or

upgrade the Backflow Preventer, using the City's employees or a third party, at the Water Customer's expense.

The date on or after which delivery of water may be discontinued shall not be less than 15 calendar days following the date of on-site posting. The City may grant the Water Customer an extension of additional 30 days if the City determines that the Water Customer reasonably has been unable to comply with the notice within the time originally allowed.

XIV. PENALTIES

Violation of the regulations set forth in the City of Sarasota's Ordinance 14-1503 is a misdemeanor and may be enforced by any of all of the following measures:

1. The issuance of a code citation, requiring the Water Customer to cure the violation or face daily fines, pursuant to Chapter 2, Article V, Division 5, "Code Compliance System" of the Sarasota City Code, with each day or fraction thereof in which the violation continues being considered a separate offense;
2. The prosecution of the violation as a misdemeanor and, upon conviction, punishment by a fine not to exceed \$500.00 and/or imprisonment in the County Jail not to exceed 60 days, or any other remedy available under the law;
3. The filing of a complaint for injunctive relief in the Twelfth Judicial Circuit in the State of Florida;
4. The termination of any current utility service being provided by the City until such time as compliance is achieved;
5. The installation, repair and/or replacement of a Backflow Preventer by the City, or its agents, at the cost of the Water Customer or property owner; and
6. Any other civil or criminal remedy available at law.

XV. RECLAIMED WATER

The City of Sarasota's Reclaimed Water program is detailed in Sections 37-70 through 37-78 of the City Code.

XVI. ACCIDENTAL BACKFLOW

If accidental pollution or contamination of the public's or Water Customer's potable water system occurs due to Backflow on or from the Water Customer's premises, the

Water Customer shall immediately notify the City of Sarasota Utilities Department of the hazardous conditions by calling (941) 955-2325 during normal business hours or (941) 955-4838 after 5:00 PM. or on weekends and holidays.

If the City discovers that a Backflow incident has caused pollution or contamination to the public water system, it shall report the incident to the Sarasota County Health Department within 24 hours of such discovery. The City shall prepare a written incident report and shall submit it to the Sarasota County Health Department. Each written Backflow incident report shall include the following information:

1. The date and approximate time of discovery of the Backflow incident;
2. The source and cause, or suspected source and cause, of the Backflow incident;
3. The type of contaminants or foreign substances found within the public water distribution system or the Water Customer's potable water system as a result of the Backflow incident and the portion, or estimated portion, of the public water distribution system affected by the Backflow incident; and
4. The precautionary or corrective actions taken in response to the Backflow incident and the date approximate time of completion of each action.

Additionally, the City's staff will follow the emergency procedures as listed on the Emergency Procedure Flow Chart attached hereto as **Appendix I**.

VXII. ANNUAL REPORTING REQUIREMENT

Beginning calendar year 2016, the Department will prepare and submit Form 62-555-900(13) "Cross-Connection Control Program Annual Report" to the appropriate Department of Environmental Protection district office or Approved County Health Department within three months after the end of the calendar year covered by the report. (A copy of Form 62-555.900(13) is attached hereto as **Appendix J**).

XIII. PUBLIC AWARENESS

The City strives to educate and inform its Water Customers and the public at large of the potential dangers to the public water system resulting from Cross-Connections. As part of an on-going educational program, and to enhance public awareness of the hazards of Cross-Connections and the prevention of Backflow; the City may participate in one or more of the following, or a similar outreach strategy:

- Posting of information on the City's official website;

- Distributing flyers and informational bulletins in utility invoice mailings;
- Providing handouts at the Water Utilities location;
- Maintaining a display at a local mall, fair or show;
- Providing public service announcements on local radio or TV;
- Publishing an article about Cross-Connection prevention in the local newspaper; and
- Participating in the City of Sarasota Citizens Academy.

XIX. CONTACT INFORMATION

For additional information about the City of Sarasota's Cross Connection Control Plan please contact:

Ira Jenkins, Cross-Connection Control Crew Leader
Ira.jenkins@sarasotagov.com
1750 12th Street
Sarasota, FL 34236
Phone 941-365-2200 Ext. 6289
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APPENDIX A

City of Sarasota Cross-Connection Control Plan

Partial List of Plumbing Hazards

Fixtures with Direct Connections

Sewer, sanitary
Sewer, storm
Swimming pool

Description

Air conditioning, air washer
Air conditioning, chilled water
Air conditioning, condenser water
Air line
Aspirator, laboratory
Aspirator, medical
Aspirator, weedicide and fertilizer sprayer
Autoclave and sterilizer
Auxiliary system, industrial
Auxiliary system, surface water
Auxiliary system, unapproved well supply
Boiler system
Chemical feeder, pot-type
Chlorinator
Coffee urn
Cooling system
Dishwasher
Fire standpipe or sprinkler system
Fountain, ornamental
Hydraulic equipment
Laboratory equipment
Lubrication, pump bearings
Photostat equipment
Plumber's friend, pneumatic
Pump, pneumatic ejector
Pump, prime line
Pump, water operated ejector

Fixtures with Submerged Inlets

Description

Baptismal fount
Bathtub
Bedpan washer, flushing rim
Bidet
Brine tank
Cooling tower
Cuspidor
Drinking fountain
Floor drain, flushing rim
Garbage can washer
Ice maker
Laboratory sink, serrated nozzle
Laundry machine
Lavatory
Lawn sprinkler system
Photo laboratory sink
Sewer flushing manhole
Slop sink, flushing rim
Slop sink, threaded supply
Steam table
Urinal, siphon jet blowout
Vegetable peeler
Water closet, flush tank, ball cock
Water closet, flush valve, siphon jet

APPENDIX B

City of Sarasota Cross-Connection Control Plan

ORDINANCE NO. 14-5103

AN ORDINANCE OF THE CITY OF SARASOTA, FLORIDA, AMENDING CHAPTER 37, ARTICLE V, CROSS-CONNECTION CONTROL PROGRAM, SECTIONS 37-90 TO 37-93, TO MEET OR EXCEED THE REQUIREMENTS OF RULE 62-555.360, FLORIDA ADMINISTRATIVE CODE; AMENDING DEFINITIONS, AMENDING INSTALLATION AND INSPECTION REQUIREMENTS; REPEALING ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR THE SEVERABILITY OF THE PARTS HEREOF; PROVIDING FOR READING BY TITLE ONLY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Sarasota operates a public water system that serves water customers of the City of Sarasota and that meets the definition of a "community water system," as set forth in Section 403.852(3), Florida Statutes; and

WHEREAS, the Florida Department of Environmental Protection (FDEP) adopted new rules effective May 5, 2014 (Section 62-555.360, FAC, *Cross-Connection Control for Public Water Systems*), which require a public water system to detect and control cross-connections to its water system in order to prevent the backflow of contaminants into the water system; and

WHEREAS, on October 17, 2011, the Sarasota City Commission adopted Ordinance No. 09-4898 to codify an existing City Cross-Connection Control Program, and the Commission now wishes to amend the Sarasota City Code to comply with the new state rules; and

WHEREAS, the City Commission finds that this Ordinance is necessary to protect the public's health, safety and welfare because it will help prevent contamination of the City's water supply and possible subsequent hazards to public health; and

WHEREAS, this Ordinance sets standards that meet or exceed the state standards set forth in Rule 62.555.360, FAC, by requiring certain water customers to install an appropriate backflow prevention device;

NOW, THEREFORE, BE IT ENACTED BY THE PEOPLE OF THE CITY OF SARASOTA, FLORIDA:

Section 1. The Sarasota City Code, Chapter 37, "Water and Sewers," Article V, "Cross-Connection Control Program," Sections 37-90 through 37-93 are hereby

amended to read as follows: (New text is indicated by underline. Deleted text is indicated by ~~strikethrough~~.)

“ARTICLE V. CROSS-CONNECTION CONTROL PROGRAM.

Sec. 37-90. Basis for Cross-Connection Control Program.

(a) ~~The City has established a Cross-Connection Control Program pursuant to, and in conformance with, the Florida Administrative Code Chapter 62-550, “Drinking Water Standards, Monitoring, and Reporting”; and Chapter 62-555, “Permitting, Construction, Operation, and Maintenance of Public Water Systems,” which are incorporated herein by reference.~~ The City hereby establishes a Cross-Connection Control Program pursuant to, and in conformance with Rule 62-555.360, “Cross-Connection Control for Public Water Systems,” Florida Administrative Code (FAC), as may be amended from time to time and which is incorporated herein by reference. If any conflicts or inconsistencies exist between the City’s Cross-Connection Control Program, as set forth herein, and the Florida Administrative Code (FAC), the more restrictive regulations shall govern.

(b) The requirements of this Cross-Connection Control Program are intended to ~~be in conformance with~~ meet or exceed the relevant requirements contained in the Florida Building Code, as well as the technical specifications and the installation, repair and maintenance requirements contained in the American Water Works Association (AWWA) M14 Manual, Third Edition, 2004, entitled, “Recommended Practice for Backflow Prevention and Cross-Connection Control.” The City of Sarasota is authorized to adopt a “Cross-Connection Control Manual Plan” by resolution, setting forth the technical requirements of this program. Such Plan shall be in conformance with this ordinance and the requirements of Rule 62-555.360, FAC.

(c) The City and its agents are authorized to enter private property to inspect for actual or potential Cross-Connections or water quality, to test Backflow Preventers, to conduct health hazard assessments, to inspect reclaimed water or reuse water systems, and to identify Auxiliary Water ~~Supplies~~ Systems or other hazards that could contaminate the community water system.

Sec. 37-91. Definitions.

The following terms shall have the meanings set forth below, unless otherwise defined by Chapters 62-555.200 and 62.555.360, FAC. Additional terms defined in the FAC but not in this Article shall have the meanings set forth in the FAC.

~~*Auxiliary Water Supply.* Any water supply, on or available to, a premises other than the public water system. Such water supplies include natural water sources such as wells, ponds, lakes, springs, streams, rivers, etc., and include used water that has passed~~

~~beyond the public water system's control at the point of delivery and has been used in a way that might contaminate it.~~

Auxiliary Water System. A pressurized system of piping and appurtenances using auxiliary water, which is water other than the potable water being supplied by the Community Water System and which includes water from any natural source such as a well, pond, lake, spring, stream, river, etc., includes reclaimed water, and includes other used water or industrial fluids described in AWWA Manual M14, as incorporated in 62-555.360(1) and (2); however "Auxiliary Water System" specifically excludes any water recirculation or treatment system for a swimming pool, hot tub, or spa. that conveys and utilizes water from an Auxiliary Water Supply but specifically excludes a water recirculation/treatment system for swimming pools, hot tubs, or spas at residential premises.

Backflow. The reversal of flow of water in a public water system or Water Customer's potable water system in such a way that foreign substances enter the public water system or Water Customer's potable water system through a Cross-Connection.

Backflow Preventer. A method, (i.e., air gap), or a mechanical assembly or device, that prevents Backflow.

Commercial Premises. ~~Where there is a multifamily apartment building or condominium or a business enterprise.~~

Commercial Service Connections. Premises that contain a business enterprise. This term also includes premises that contain a multi-family apartment building or condominium where the service connection is larger than two inches in diameter.

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.

~~*Fire Protection System.* A system that is designed individually to protect the interior or exterior of a specific building, structure, or other special hazard from fire and that uses water from a public water system as an extinguishing agent.~~

~~*Industrial Premises. Service Connections.* Where there is a Premises that contain a manufacturing or processing establishment.~~

Irrigation System. A system of in-ground piping and appurtenances that is used to apply water from a public water system to landscaping or agricultural crops at ~~Commercial, Industrial, or Residential~~ premises.

Non-residential Service Connections. Premises that contain a service connection other than a Residential Service Connection as herein defined. This term includes all Commercial and Industrial Service Connections, as defined herein, regardless of the diameter of the connection, as well as all service connections to multi-family apartments and condominiums in which the diameter of the connection is greater than two inches.

Reclaimed Water System. A specific type of Auxiliary Water System using water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility.

~~*Residential Premises.* Where there is a one or two-family dwelling unit.~~

Residential Service Connections. Premises that contain a service connection, including any dedicated irrigation or fire service connection, that is two inches or less in diameter and that supplies water to a building, or premises, containing only dwelling units.

Tall Building. A building with five or more floors at or above ground level.

Water Customer. All persons, firms, associations, corporations or other legal entities who own, operate or install within the City of Sarasota a direct or indirect connection to the City's public water system.

Sec. 37-92. Installation requirements.

~~(a) Water Customers whose water lines have an actual or potential Cross-Connection are required to purchase, install, test, and maintain appropriate Backflow Preventers. The Water Customer shall install a Backflow Preventer appropriate to the degree of hazard as determined by the City, which shall use the City's Cross-Connection Control Manual and the AWWA M14 Manual for guidance.~~

~~(b) All Residential Water Customers are required to install a Backflow Preventer if their premises contain an actual or potential Cross-Connection, an Auxiliary Water System, an Irrigation System, an unplugged water well, or a solar water heater. In addition, Residential Water Customers who have a swimming pool on their premises are required to install a Backflow Preventer unless this requirement is removed from the Florida Administrative Code.~~

(a) All Water Customers with Residential Service Connections are required to install a Reduced Pressure Principle Assembly (RP) Backflow Preventer if their premises contain an actual or potential Cross-Connection, which includes premises with:

(i) an Auxiliary or Reclaimed Water System;

- (ii) an Irrigation System that is using potable water;
- (iii) a wet-pipe sprinkler or wet standpipe fire protection system that is using potable water; or
- (iv) a Tall Building of five or more floors above ground level.

~~(c) All Commercial and Industrial Water Customers are required to install a Backflow Preventer.~~

(b) All Water Customers with a Non-residential Service Connection are required to install a RP Backflow Preventer.

~~(d) All Water Customers who have a Fire Protection System are required to install a Backflow Preventer.~~

~~(c)~~ Upon receipt of a notice and demand from the City, a Water Customer shall retain a licensed plumbing contractor to install a Backflow Preventer within the timeframe provided in the notice. The Backflow Preventer shall be installed downstream of the water meter or at the property line when a meter is not present, or at a location approved in writing by the City, but in all cases, before the first branch or water distribution pipe off the Water Customer's water service pipe.

~~(d)~~ Once the Backflow Preventer has been installed, the Water Customer shall ensure that the plumbing contractor provides the City with documentation of the installation, in a form acceptable to the City and within the timeframe provided in the notice. If the City does not receive such documentation, it may utilize City employees or a third party to conduct an inspection, at the Water Customer's expense.

~~(e)~~ If the Backflow Preventer is not timely or correctly installed, the City may, after reasonable written notice to the Water Customer: discontinue water service until the Cross-Connection problem is corrected; and/or install a Backflow Preventer, using City employees or a third party, at the Water Customer's expense.

~~(f)~~ In the event the City discovers a Cross-Connection problem that poses an immediate health risk, the City may immediately discontinue water service until the Cross-Connection problem is corrected; and/or install a Backflow Preventer, using City employees or a third party, at the Water Customer's expense.

Sec. 37-93 Backflow preventer inspections.

(a) ~~Unless otherwise required by state statute or rule, all Water Customers shall have their Backflow Preventers located on their properties inspected and/or tested by a licensed plumbing contractor or an appropriately trained and certified technician in accordance with the City's Cross-Connection Control Manual Plan after installation or~~

~~repair and at least every two years thereafter, and the devices shall be repaired or replaced if they fail to meet performance standards. Such inspections are required following installation or repair and at least every two years thereafter for Residential Service Connections and at least once per year thereafter for Non-Residential Service Connections. Devices shall be repaired or replaced if they fail to meet performance standards.~~

(b) Upon completing the inspection and/or testing, and any required maintenance, repairs or replacements, the Water Customer shall ensure that the plumbing contractor or technician submits to the City a completed and signed inspection report, using a form approved by the City. Additionally, all inspected Backflow Preventers shall be labeled or tagged by the plumbing contractor or technician.

(c) If the Water Customer fails to conduct the inspection and/or testing, the City may, after reasonable written notice to the Water Customer, discontinue water service or conduct the inspection and/or testing, using City employees or a third party, at the Water Customer's expense.

(d) If the inspection indicates that the Backflow Preventer is not installed, or is not functioning properly and needs to be repaired, replaced or upgraded, the City may discontinue water service until the Cross-Connection problem is corrected; and/or repair, replace or upgrade the Backflow Preventer, using City employees or a third party, at the Water Customer's expense.

Sec. 37-94. Automatic meter reading.

The City may utilize automatic meter reading (AMR) or any metering available to detect reversal of flow through the service connection. If flow reversal is detected, the City may take whatever steps are needed to immediately protect the water system, including but not limited to, disconnection of water service; requiring the Water Customer to install, repair, or upgrade a Backflow Preventer; or using City employees or a third party to install, repair, replace or upgrade the Backflow Preventer, at the Water Customer's expense.

Sec. 37-95. Enforcement and penalties.

Violation of this Ordinance is a misdemeanor and may be prosecuted or enforced by any or all of the following measures:

- (1) The issuance of a code citation, requiring the Water Customer to cure the violation or face daily fines, pursuant to Chapter 2, Article V, Division 5, "Code Compliance System" of the Sarasota City Code, with each day or fraction thereof in which the violation continues being considered a separate offense;

- (2) The prosecution of the violation as a misdemeanor and, upon conviction, punishment by a fine not to exceed \$500.00 and/or imprisonment in the County Jail not to exceed 60 calendar days, or any other remedy available under the law;
- (3) The filing of a complaint for injunctive relief in the Twelfth Judicial Circuit in the State of Florida;
- (4) The termination of any current utility service being provided by the City until such time as compliance is achieved;
- (5) The installation, repair and/or replacement of a Backflow Preventer by the City, or its agents, at the cost of the Water Customer or property owner; and
- (6) Any other civil or criminal remedy available at law.

Sec. 37-96. Authority to bill customers.

The City is authorized to bill Water Customers or property owners an amount equal to that incurred by the City to perform services required in this Article. This includes, but is not limited to, costs incurred by City employees and third parties retained by the City.

Sec. 37-97 – 37.105. Reserved.”

Section 2. Ordinances in conflict herewith are hereby repealed to the extent of such conflict.

Section 3. Should any section, sentence, clause, part or provision of this Ordinance be declared invalid or unenforceable by a court of competent jurisdiction, the same shall not affect the validity of this Ordinance as a whole, or any part thereof other than the part declared to be invalid.

Section 4. This ordinance shall take effect immediately upon second reading.

PASSED on first reading by title only, after posting on the bulletin board at City Hall for at least three (3) days prior to first reading, as authorized by Article IV, Section 2, Charter of the City of Sarasota, Florida this 16th day of March, 2015.

PASSED on second reading and finally adopted this 6th day of April, 2015.

CITY OF SARASOTA, FLORIDA

Willie Charles Shaw, Mayor

ATTEST:

Pamela M. Nadalini, MBA, CMC
City Auditor & Clerk

Yes Mayor Willie Charles Shaw

Yes Vice Mayor Susan Chapman

Yes Commissioner Suzanne Atwell

Yes Commissioner Eileen Walsh Normile

Yes Commissioner Stan Zimmerman

cityatty/sew/hb/ord.14-5103(cross-connectioncontrolprogram)/4-6-15

APPENDIX C

City of Sarasota Cross-Connection Control Plan

Illustrations of Backpressure

The following presents illustrations of typical plumbing installations where backflow resulting from backpressure is possible.

Backflow

Case 1 (Fig. 50)

A. Contact Point: A direct connection from the city supply to the boiler exists as a safety measure and for filling the system. The boiler water system is chemically treated for scale prevention and corrosion control.

B. Cause of Reversed Flow: The boiler water recirculation pump discharge pressure or backpressure from the boiler exceeds the city water pressure and the chemically treated water is pumped into the domestic system through an open or leaky valve.

C. Suggested Correction: As minimum protection two check valves in series should be provided in the makeup waterline to the boiler system. An air gap separation or reduced pressure principle backflow preventer is better.

FIGURE 50.
Backflow (Case 1).

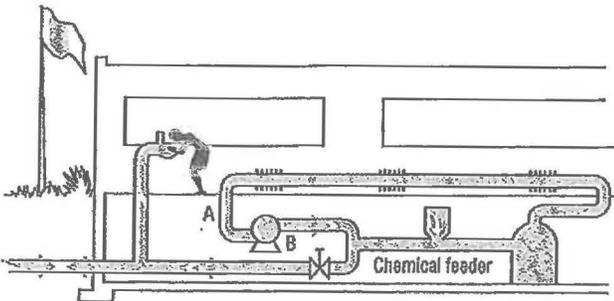
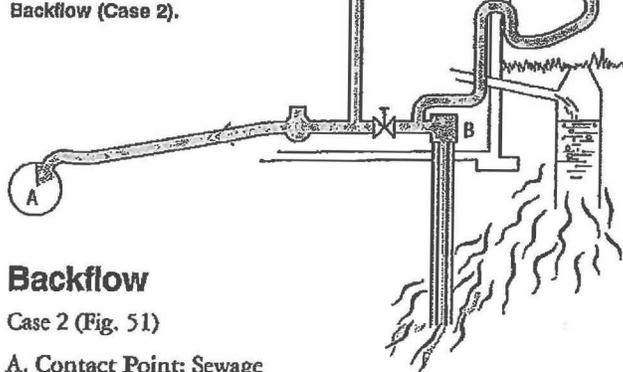


FIGURE 51.
Backflow (Case 2).



Backflow

Case 2 (Fig. 51)

A. Contact Point: Sewage seeping from a residential cesspool pollutes the private well which is used for lawn sprinkling. The domestic water system, which is served from a city main, is connected to the well supply by means of a valve. The purpose of the connection may be to prime the well supply for emergency domestic use.

B. Cause of Reversed Flow: During periods of low city water pressure, possibly when lawn sprinkling is at its peak, the well pump discharge pressure exceeds that of the city main and well water is pumped into the city supply through an open or leaky valve.

C. Suggested Correction: The connection between the well water and city water should be broken

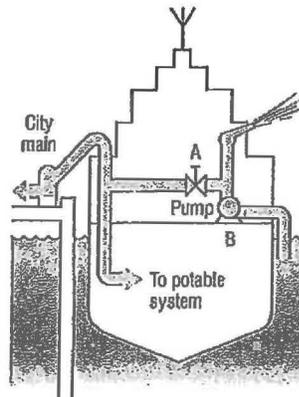
Backflow

Case 3 (Fig. 52)

A. Contact Point: A valve connection exists between the potable and the non-potable systems aboard the ship.

B. Cause of Reversed Flow: While the ship is connected to the city water supply system for the purpose of taking on water for the potable system, the valve between the potable and non-potable systems is opened, permitting contaminated water to be pumped into the municipal supply.

FIGURE 52.
Backflow (Case 3).



C. Suggested Correction: Each pier water outlet should be protected against backflow. The main water service to the pier should also be protected against backflow by an air gap or reduced pressure principle backflow preventer.

Backflow

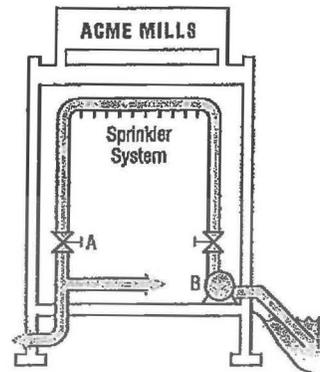
Case 4 (Fig. 53)

A. Contact Point: A single-valved connection exists between the public, potable water supply and the fire-sprinkler system of a mill.

B. Cause of Reversed Flow: The sprinkler system is normally supplied from a nearby lake through a high-pressure pump. About the lake are large numbers of overflowing septic tanks. When the valve is left open, contaminated lake water can be pumped to the public supply.

C. Suggested Correction: The potable water supply to the fire system should be through an air gap or a reduced pressure principle backflow preventer should be used.

FIGURE 53.
Backflow (Case 4).



APPENDIX D

City of Sarasota Cross-Connection Control Plan

Illustrations of Backsiphonage

The following illustrates typical plumbing installations where backsiphonage is possible.

Backsiphonage

Case I (Fig. 44)

A. Contact Point: A rubber hose is submerged in a bedpan wash sink.

B. Causes of Reversed Flow: (1) A sterilizer connected to the water supply is allowed to cool without opening the air vent. As it cools, the pressure within the sealed sterilizer drops below atmospheric producing a vacuum which draws the polluted water into the sterilizer contaminating its contents. (2) The flushing of several flush valve toilets on a lower floor which are connected to an

undersized water service line reduces the pressure at the water closets to atmospheric producing a reversal of the flow. C. Suggested Correction: The water connection at the bedpan wash sink and the sterilizer should be provided with properly installed backflow preventers.

Backsiphonage

Case 2 (Fig. 45)

A. Contact Point: A rubber hose is submerged in a laboratory sink.

B. Cause of Reversed Flow: Two opposite multi-story buildings are connected to the same water main, which often lacks adequate pressure. The building on the right has installed a booster pump.

FIGURE 44.
Backsiphonage (Case 1).

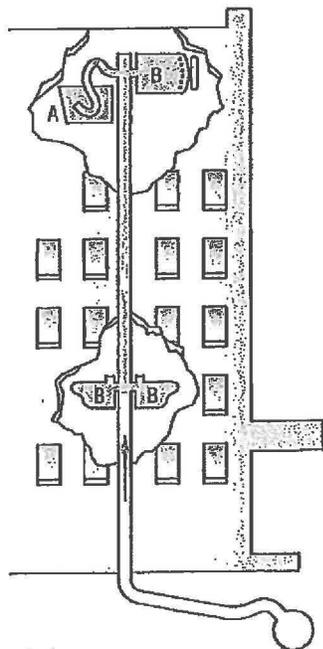
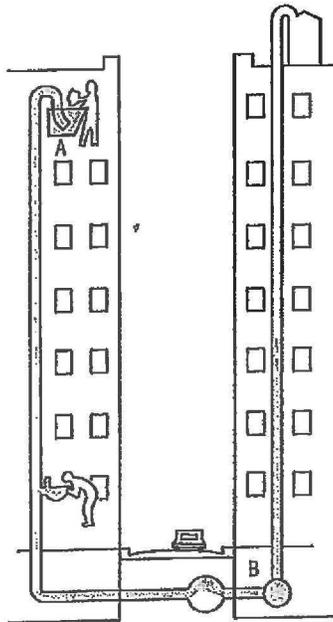


FIGURE 45.
Backsiphonage (Case 2).



When the pressure is inadequate in the main, the building booster pump starts pumping, producing a negative pressure in the main and causing a reversal of flow in the opposite building.

C. Suggested Correction: The laboratory sink water outlet should be provided with a vacuum breaker. The water service line to the booster pump should be equipped with a device to cut off the pump when pressure approaches a negative head or vacuum.

Backsiphonage

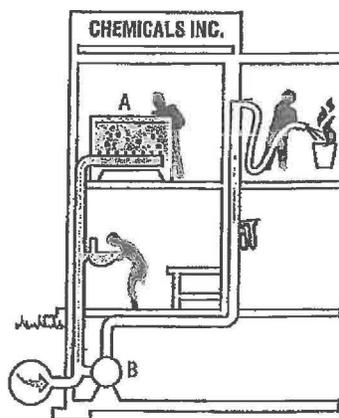
Case 3 (Fig. 46)

A. Contact Point: A chemical tank has a submerged inlet.

B. Cause of Reversed Flow: The plant fire pump draws suction directly from the city water supply line which is insufficient to serve normal plant requirements and a major fire at the same time. During a fire emergency, reversed flow may occur within the plant.

C. Suggested Correction: The water service to the chemical tank should be provided through an air gap.

FIGURE 46.
Backsiphonage (Case 3).



Backsiphonage

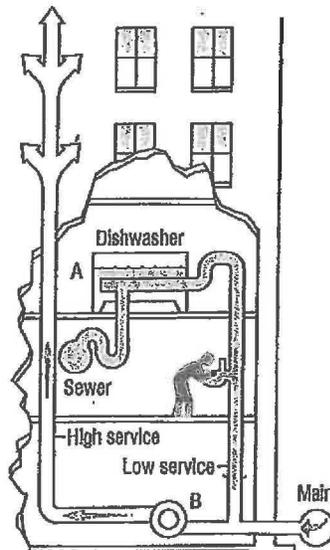
Case 4 (Fig. 47)

A. Contact Point: The water supply to the dishwasher is not protected by a vacuum breaker. Also, the dishwasher has a solid waste connection to the sewer.

B. Cause of Reversed Flow: The undersized main serving the building is subject to reduced pressures, and therefore only the first two floors of the building are supplied directly with city pressure. The upper floors are served from a booster pump drawing suction directly from the water service line. During periods of low city pressure, the booster pump suction creates negative pressures in the low system, thereby reversing the flow.

C. Suggested Correction: The dishwasher hot and cold water should be supplied through an air gap and the waste from the dishwasher should discharge through an indirect waste. The booster pump should be equipped with a low-pressure cutoff device.

FIGURE 47.
Backsiphonage (Case 4).



Backsiphonage

Case 5 (Fig. 48)

A. Contact Point: The gasoline storage tank is maintained full and under pressure by means of a direct connection to the city water distribution system.

B. Cause of Reversed Flow: Gasoline may enter the distribution system by gravity or by siphonage in the event of a leak or break in the water main.

C. Suggested Correction: A reduced pressure principle backflow preventer should be installed in the line to the gasoline storage tank or a surge tank and pump should be provided in that line.

FIGURE 48.
Backsiphonage (Case 5).

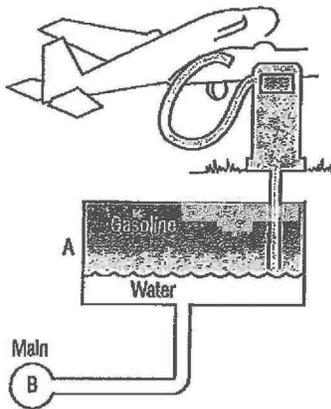
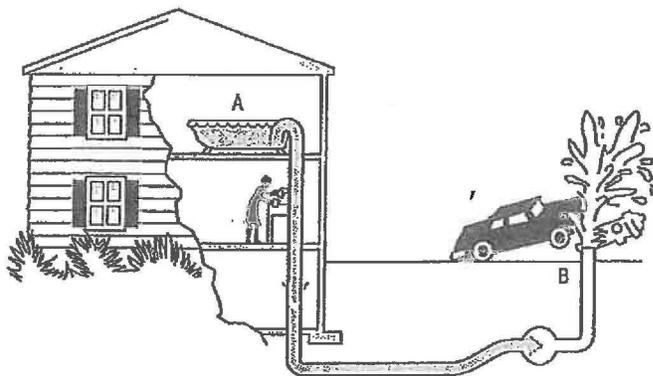


FIGURE 49.
Backsiphonage (Case 6).



Backsiphonage

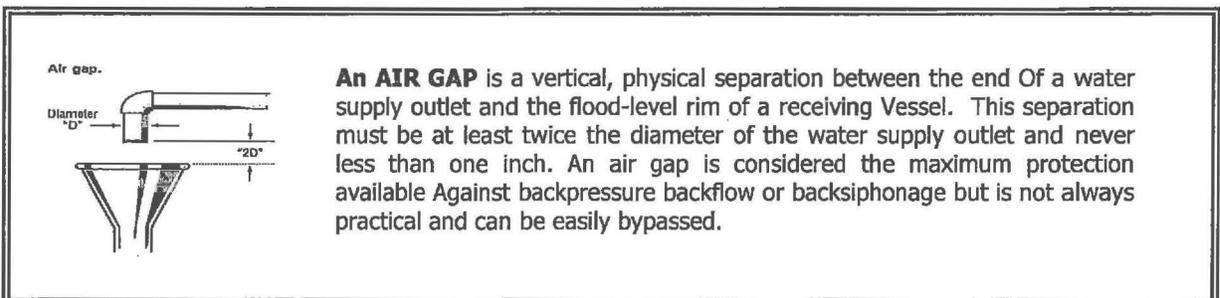
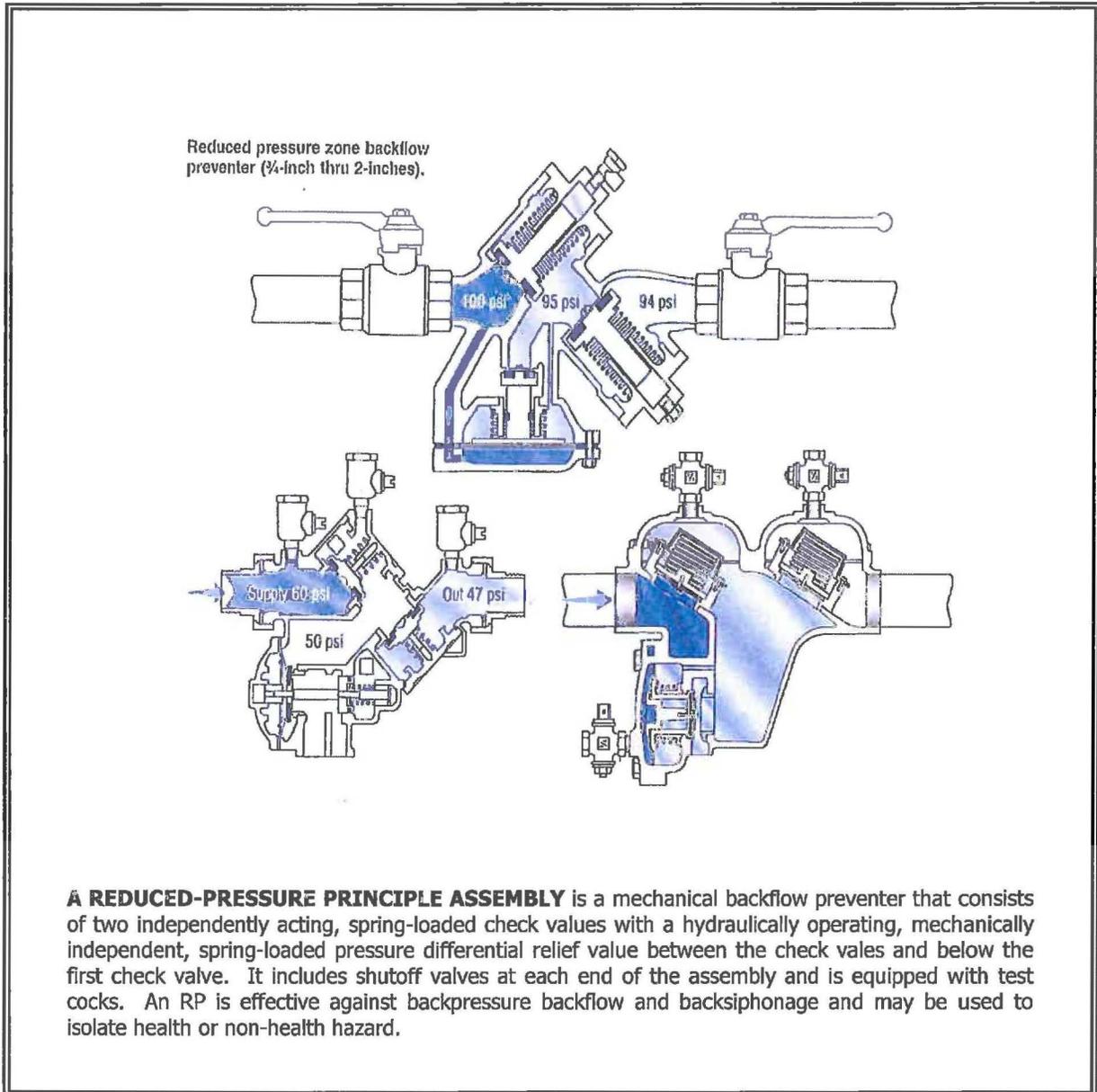
Case 6 (Fig. 49)

A. Contact Point: There is a submerged inlet in the second floor bathtub.

B. Cause of Reversed Flow: An automobile breaks a nearby fire hydrant causing a rush of water and a negative pressure in the service line to the house, sucking dirty water out of the bathtub.

C. Suggested Correction: The hot and cold water inlets to the bathtub should be above the rim of the tub.

**ILLUSTRATION OF REDUCED-PRESSURE PRINCIPLE
 BACKFLOW PREVENTER AND AIR GAP**



APPENDIX F
City of Sarasota Cross-Connection Control Plan



CITY OF SARASOTA
Utilities Department
CROSS-CONNECTION SITE SURVEY

Property Address: _____ Date of Inspection: _____
 _____ Inspector: _____
 _____ Water Customer Phone: _____

New Water Customer Existing Water Customer
 Water Customer's Name: _____
 Owner's Name (if different than Water Customer): _____
 Owner's Mailing Address: _____
 _____ Owner Phone: _____

TYPE OF STRUCTURE:		TYPE OF USE	
Single family	One story	Non-residential	
Residential	Two story	Type of business:	
Non-residential	Three story	High hazard use	Low hazard use

DOES THE PROPERTY CONTAIN ONE OR MORE OF THE FOLLOWING?:

Water well	Irrigation system	Solar heater	Swimming pool	Fire protection
Reclaimed water	Lake or canal	T&P valve	Pressure relief valve	Expansion tank

Booster pump station? Yes No Toxic chemical storage or use? Yes No
 Thermal processing? Yes No Type:

EXISTING BACKFLOW PREVENTER ASSEMBLIES?

1. Yes No Type/serial:
 2. Yes No Type/serial:

Has the backflow prevention assembly been tested within the past year? Yes No

INSPECTION NOTES:

DIAGRAM

Does a cross-connection exist? Yes No
Required action:
Date action required:

 Inspector signature and Date

 Owner signature and Date

APPENDIX G
City of Sarasota Cross-Connection Control Plan



City of Sarasota Utilities Department
Cross Connection Control Program
Telephone: 941-366-2200 ext. 6289, Fax: 941-366-4840

Certificate of Relocation Variance
for Cross Connection Control (Backflow) Assemblies

Project Name: _____ Date Submitted: _____

Project Address: _____

Owner's Name: _____ Signature : _____

Owner's Mailing Address: _____

City: _____ State: _____ Zip: _____

I, the Owner or the Owner's duly authorized Agent, hereby request to locate or re-locate the subject Cross Connection Control (Backflow) Assembly beyond the maximum allowable distance from the City's water meter, within the public right of way, or inside of a building because of potential public safety and/or other hazard concerns which may be created if the Cross Connection Control Assembly is installed in accordance with the City's Cross Connection Control Policy.

I understand that no tie-ins or connections of any type are to be installed in the section of pipe between the City's water meter and the Cross Connection Control Assembly. I also understand that I assume full liability for all damages from such un-authorized tie-ins and un-authorized connections, plus leaks originating from the subject section of pipe.

Description of New Location: _____

Sketch the new location relative to the Cross Connection Control (Backflow) Assembly and the Water Meter.

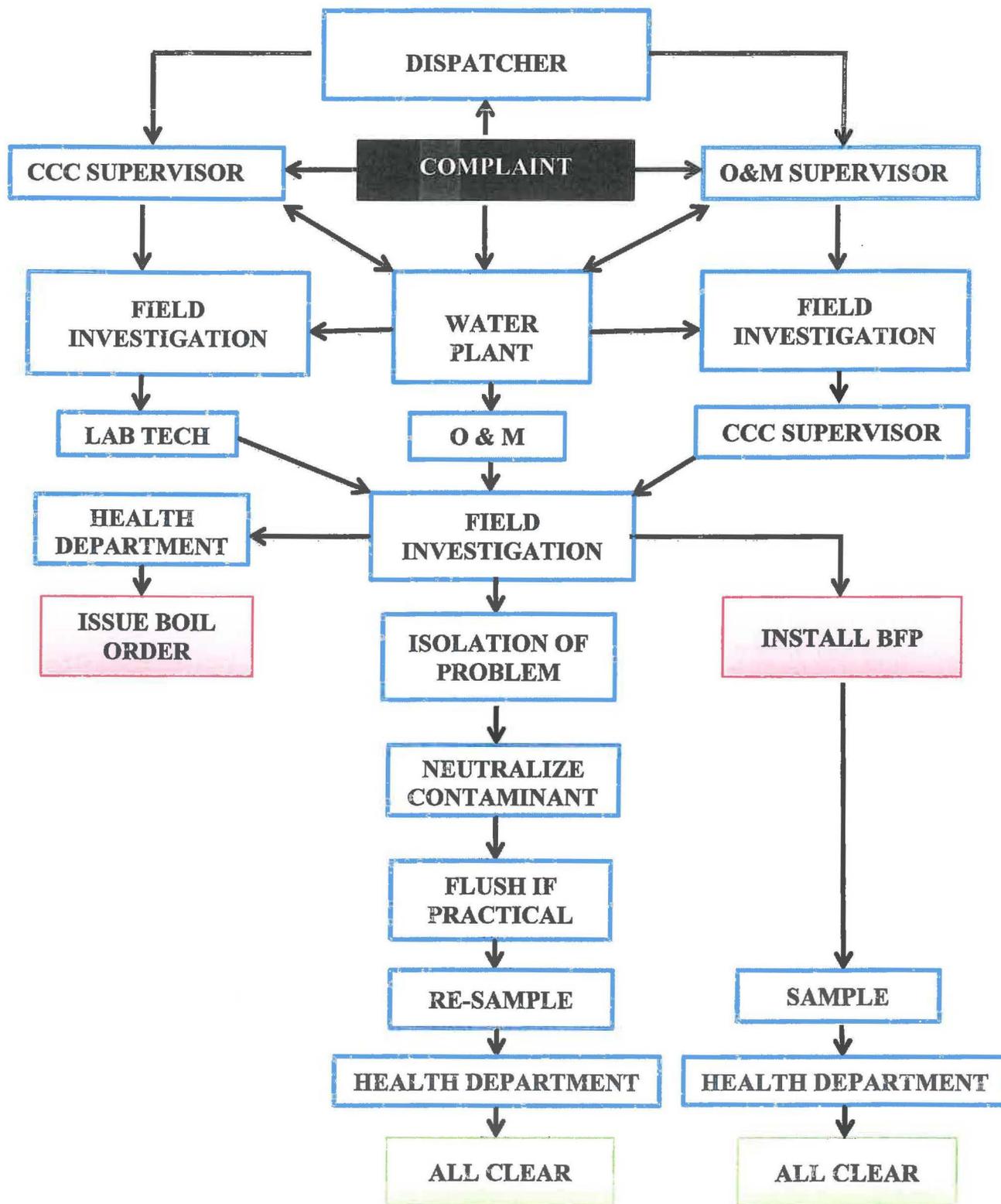
Approved: _____

Signature – Utilities Department

Title

Date

EMERGENCY PROCEDURE FLOWCHART



EMERGENCY PROCEDURE SEQUENCE OF EVENTS

A. Customer drive water quality complaint

1. Customer complains of odor/taste
2. Chemist called out to check
3. If problem, chemist called distribution or dispatch
4. Distribution checks property/surrounding area
5. Distribution flushes system and/or eliminates cross-connection, issues boil water advisory
6. Retest water and monitor
7. Notify immediate supervisor/Compliance Manager
8. Compliance Manager notifies Health Department or FDEP

B. Backpressure found on meter

1. Mechanic/Customer Service Rep notifies cross-connection control department
2. Cross-connection control technician checks property
3. Eliminates cross-connection
4. Notifies chemist
5. Chemist test system/issues boil water advisory
6. Notify immediate supervisor/Compliance Manager
7. Compliance Manager notifies Health Department of FDEP



APPENDIX J
City of Sarasota Cross-Connection Control Plan

Florida Department of Environmental Protection

CROSS-CONNECTION CONTROL PROGRAM ANNUAL REPORT

Instructions: Each community water system serving more than 10,000 persons shall complete and submit this report annually. The first annual report shall cover calendar year 2016, and subsequent annual reports shall cover each calendar year thereafter. This report shall be submitted to the appropriate Department of Environmental Protection district office or Approved County Health Department within three months after the end of the calendar year covered by the report. Where used in this report, AG = air gap; CWS = community water system; DC = double check valve assembly; DCDA = double check detector assembly; DuC = dual check device; PVB = pressure vacuum breaker assembly; PWS = public water system; RP = reduced-pressure principle assembly; and RPDA = reduced-pressure principle detector assembly.

I. General Information

PWS Identification Number: _____
 CWS Name: _____
 CWS Owner: _____
 Contact Person: _____
 Contact Person's Title: _____
 Contact Person's Address: _____
 Contact Person's Phone: _____
 Contact Person's E-Mail: _____

II. Written Cross-Connection Control Plan

- Does the CWS identified in Part I of this report have a written cross-connection control plan that includes the components described in Table 62-555.360-1, which appears at the end of Rule 62-555.360, F.A.C.? Yes. No.
- **If no**, provide in Part VI of this report a description of revisions or actions necessary to bring the CWS's written cross-connection control plan into conformance with Table 62-555.360-1 and a schedule for completing such revisions or actions.

III. Inventory of Service Connections, and Inventory of Backflow Protection Being Required at or for Service Connections, at the End of Calendar Year¹

Category of Service Connections	Number Being Served Water	Number with an AG at or for the Service Connection	Number with a DC, DCDA, PVB, RP, or RPDA at or for the Service Connection	Number with a DuC at or for the Service Connection
A. Non-residential service connections²				
1. Standard service connections ³				
2. Dedicated irrigation service connections ⁴				
3. Dedicated fire service connections ⁵				
4. Total non-residential service connections (A.1. + A.2. + A.3.)				
B. Residential service connections²				
1. Standard service connections ³				
2. Dedicated irrigation service connections ⁴				
3. Dedicated fire service connections ⁵				
4. Total residential service connections (B.1. + B.2. + B.3.)				
C. Total service connections (A.4. + B.4.)				

IV. Inspection/Testing of Service Connection Backflow Protection, and Refurbishment/Replacement of Service Connection DuCs, During Calendar Year¹

Type & Location of Backflow Protection	Number Inspected During the Year	Number Tested During the Year	Number Refurbished/Replaced During the Year ⁶
A. AGs at or for service connections			
B. DCs, DCDAs, PVBs, RPs, & RPDAs at or for <u>non-residential</u> service connections ²			
C. DCs, DCDAs, PVBs, RPs, & RPDAs at or for <u>residential</u> service connections ²			
D. DuCs at or for <u>residential</u> service connections ²			

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V. Discovered Cross-Connections

- How many prohibited or inadequately protected cross-connections were discovered during the calendar year covered by this report? _____
- If one or more**, provide in Part VI of this report a description of the discovered cross-connection(s) and an explanation of how the cross-connection(s) was(were) eliminated or adequately protected.

VI. Additional Information (attach supplementary pages if necessary)

VII. Certification by CWS⁷

I am duly authorized to sign this report on behalf of the CWS identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Name	Title	Signature & Date

¹ Insert the calendar year covered by this report; see the instructions for more information.

² For the purpose of this report, "residential service connection" is intended to mean any service connection, including any dedicated irrigation or fire service connection, that is two inches or less in diameter and that supplies water to a building, or premises, containing only dwelling units; and "non-residential service connection" is intended to mean any other service connection. **For the purpose of this report, a CWS may use a different definition for "residential service connection" provided the CWS's definition of "residential service connection" does not encompass any more service connections than the aforementioned definition of "residential service connection" and provided the CWS describes in Part VI of this report the definition it is using for "residential service connection."**

³ "Standard service connection" means any service connection to the plumbing system at a premises.

⁴ "Dedicated irrigation service connection" means any service connection whereby an irrigation system is connected directly to a CWS distribution system.

⁵ "Dedicated fire service connection" means any service connection whereby a fire protection system is connected directly to a CWS distribution system.

⁶ Include each DuC that was either refurbished or replaced with a DuC; do not include any DuC that was replaced with another type of backflow protection.

⁷ This certification shall be signed by the CWS's owner or director, the CWS's lead/chief water distribution system operator, or the CWS's cross-connection control program manager.