



FLORIDA STATE UNIVERSITY
Utilities and Engineering Services

CROSS CONNECTION MANAGEMENT PROGRAM

Last revision: November 2020

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I. Contents

I.	Contents.....	2
II.	Definitions and Acronyms.....	3
III.	Purpose	3
IV.	Scope.....	3
V.	Code	3
VI.	Key Personnel and Responsibilities.....	4
	A. Utilities and Engineering Services (UES)	4
	B. Maintenance Technicians (Maintenance zones, Preventative Maintenance Team, Pipe Shop staff or contracted vendors)	4
	C. Building Code Administration Fire Inspector	4
VII.	Inspection and Testing Program	4
	A. Test results submission	4
	B. Certification Requirements.....	4
	C. Annual Program Events.....	4
VIII.	Maintenance	5
	A. Licensing Requirements	5
IX.	Backflow preventor assemblies not connected to the public water supply.....	6
X.	Data Management	7
	A. Mapping	7
XI.	Appendixes.....	8

II. DEFINITIONS AND ACRONYMS

BFP/ASSEMBLY	Backflow preventor (term assembly may be used interchangeably), a device, which is installed in a water line and prevents water or other substances from flowing backward into the water supply system.
AIM	Asset Works; Integrated workplace management system for FSU Facilities and Maintenance.
AWWA	American Water Works Association
WO	Work Order, placed through AIM system against an asset
GIS	geographic information system
PPE	personal protective equipment
COT	City of Tallahassee
BCA	Building Code Administration, FSU
UES	Utilities and Engineering Services, FSU

III. PURPOSE

The purpose of FSU's Cross Connection Program is to protect the public potable water supply system from the possibility of contamination or pollution by isolating potential hazards using approved backflow prevention methods. Additionally, the program seeks to ensure satisfactory operation of backflow preventor assemblies while meeting regulatory compliance requirements. This is achieved through annual inspection and testing of backflow preventor assemblies.

IV. SCOPE

This program includes backflow preventor assemblies owned by the University located in Greater Tallahassee (Main Campus, SW campus, Florida High and other properties managed and/or leased by the University). Included is the annual testing, maintenance, and recordkeeping for the backflow preventor assemblies.

This program does not include or provide for new or replacement backflow preventor assemblies associated with projects.

V. CODE

This program shall be conducted in accordance with City of Tallahassee resolution 15-R-15, *Rules and Regulations for Backflow Prevention and Cross-Connection Control* and the most recent edition of the American Water Works Association Manual M14, *Recommended Practice for Backflow Prevention and Cross-Connection Control*.

VI. KEY PERSONNEL AND RESPONSIBILITIES

A. Utilities and Engineering Services (UES)

Maintain schedule and generate work orders for annual inspection and testing.

Maintain BFP data information.

Archive inspection and testing reports in Virtual Vault.

Coordinate procurement activities for sourcing contractors.

B. Maintenance Technicians (Maintenance zones, Preventative Maintenance Team, Pipe Shop staff or contracted vendors)

Perform annual testing of BFP.

Prepare records of testing.

Perform maintenance and repair work of BFP.

C. Building Code Administration Fire Inspector

Manage inspection and testing of fire systems Backflow preventor assemblies

VII. INSPECTION AND TESTING PROGRAM

The University owns several different backflow preventor assembly models; therefore, testing practices may vary. Service technicians should apply testing practices consistent with the make and model of the assembly in accordance with manufacturer's recommendations.

A. Test results submission

Testing reports shall be completed and submitted through the City of Tallahassee's online testing portal, using the *Backflow Prevention Assembly Test & Maintenance Report (TMR)*.

B. Certification Requirements

Testing technicians must be registered and approved by the City. See section 3.5.7-.8 of the City's *Rules and Regulations for Backflow Prevention and Cross-Connection Control*.

C. Annual Program Events

- Spring semester UES requests list of University Backflow Preventors from COT
- Spring semester UES requests quotes from contractors and generates Work Order in AIM system for annual testing.
- UES schedules testing to occur during summer session (beginning of fiscal year) and works with Maintenance department to determine best dates. UES notifies Maintenance department and BCA of inspection schedule.
- Zone Supervisors work directly with testing technicians/contractors to schedule individual building testing. This ensures critical building water supply impact is minimized.
- Service technicians/contractor complete inspection and testing.
- Service technicians provide list of assemblies that have failed testing or that require repair or replacement to pipe shop. Service technician/contractor provides quote for repair/replacement.
- Service technicians/contractor completes repair/replacement work.
- UES follows up with COT to ensure that test results have been received and that all assemblies have passed testing.

VIII. MAINTENANCE

The University owns several different backflow preventor assemblies; therefore, maintenance practices may vary. Service technicians should apply maintenance practices consistent with the make and model of the assembly in accordance with manufacturer's recommendations.

A. Licensing Requirements

Repair and maintenance of backflow preventor assemblies must be made by a licensed plumber.

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IX. BACKFLOW PREVENTOR ASSEMBLIES NOT CONNECTED TO THE
PUBLIC WATER SUPPLY

Under Development.

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X. DATA MANAGEMENT

Under Development.

A. Mapping

An AutoCad map of the domestic water system shall be maintained by Engineering Services. Backflow preventor assemblies shall be included in the map.

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XI. APPENDIXES

City of Tallahassee Rules and Regulations for Backflow Prevention and Cross-Connection Control

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**Rules and Regulations for
Backflow Prevention and Cross-Connection Control**

Table of Contents

Section 1 – General Policy	1
1.1 Purpose.....	1
1.2 Application.....	1
1.3 Water System	1
1.4 Responsibility.....	1
1.5 Authority.....	1
Section 2 – Definitions.....	2
Section 3 – Requirements.....	5
3.1 Water Service Connections	5
3.2 Backflow Prevention Assembly Requirements.....	5
3.3 Backflow Prevention Assembly Installation	8
3.4 Inspections.....	9
3.5 Registration and Testing.....	10
3.6 Repair and Maintenance	12
Section 4 – Emergency Procedures, Violations, and Enforcement	13
4.1 Violations	13
4.2 Serious and Immediate Threats.....	13
4.3 Less Serious but Ongoing Threats	13
4.4 Requests for Extension	14
4.5 Fraudulent Inspection Reports and Testing	15
Section 5 – Construction Standards	15
5.1 General Construction Standards	15
Appendix A – Typical Hazards.....	17
A.1 Typical Facilities Requiring Protection.....	17
A.2 Other Equipment Requiring Protection.....	18
Appendix B – Construction Details	19
BFP-1 – Backflow Prevention Configuration Requirements.....	20
BFP-2 – Reduced Pressure Principle Backflow Prevention Assembly (1/2" – 2" Outdoor Residential)	21
BFP-3 – Reduced Pressure Principle Backflow Prevention Assembly (1/2" – 2" Indoor Residential)	22
BFP-4 –Reduced Pressure Principle Backflow Prevention Assembly (3" – 12" Outdoor Commercial)	23
BFP-5 –Fire Line w/ Double Check Detector Assembly (3" – 12" Outdoor Commercial).....	24
BFP-6 –Meter w/ Double Check Backflow Prevention Assembly (3" – 12" Outdoor Commercial)	25

Section 1 – General Policy

1.1 Purpose

To protect the public potable water supply system from the possibility of contamination or pollution by isolating potential hazards through the use of approved backflow prevention methods.

To promote the elimination or control of existing cross-connections, actual or potential, with a customer's water system, non-potable water system, plumbing fixtures, and industrial piping systems.

To provide for a continuing program of cross-connection control that will prevent the contamination or pollution of the public potable water supply system.

1.2 Application

These Rules and Regulations shall apply to all properties and areas served by the City of Tallahassee's public potable water supply system, whether inside City's limits or out.

1.3 Water System/Point of Delivery

For the purposes of these Rules and Regulations, the water system shall be considered as consisting of two parts; the public potable water supply system and the customer's water system. The public potable water supply system shall consist of all source, treatment, storage, distribution, and metering facilities under the control of the City of Tallahassee Underground Utilities. The customer's water system shall include all facilities beyond the meter setting used to convey water from the public potable water supply system to the points of use. The point at which the public potable water system ends and the customer's water system begins shall hereinafter be referred to as the Point of Delivery.

1.4 Responsibility

The City of Tallahassee, as the purveyor of potable water, shall be responsible for the protection of the public potable water supply system from contamination or pollution due to the backflow (back-pressure or back-siphonage) of contaminants or pollutants through a customer's water system.

1.5 Authority

Pursuant to the authority granted under City of Tallahassee Code of General Ordinances; Ordinance 90-O-0017; and Resolution 90-R-0004; Underground Utilities hereby adopts, establishes, and publishes these Rules and Regulations.

The City of Tallahassee Underground Utilities shall designate a representative(s) to serve as an enforcement agent(s) for the Cross-Connection Control Program. Said agent(s) shall be trained in accordance with accepted industry practices to identify hazards, actual or potential, with a customer's water system, non-potable water system, plumbing fixtures, and industrial piping systems; and shall have the authority to require of a customer the installation of an approved backflow prevention assembly suitable for the degree of hazard.

As a condition of continuing water service, all water service customers shall provide the City access to the customer's facilities for the purpose of determining compliance with the requirements of these Rules and Regulations. Such access shall be unobstructed and safely accessible.

Section 2 – Definitions

For purposes of these Rules and Regulations, the following definitions shall apply unless the context clearly indicates or requires a different meaning. If a word or term used in these Rules and Regulations is not contained in the following list, its definition, or other technical terms used, shall have the meanings or definitions listed in the most recent edition of the American Water Works Association Manual M14, Recommended Practice for Backflow Prevention and Cross-Connection Control.

APPROVED - Accepted by the City of Tallahassee, Underground Utilities - Office of Cross-Connection Control. Or, as it relates to a backflow prevention assembly, APPROVED shall mean having received full acceptance and approval in both field and laboratory testing by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

ASSEMBLY – An assembly of one or more approved body components and including approved shutoff valves.

AUTHORIZED AGENT – An employee of the City of Tallahassee Underground Utilities that has been trained in accordance with accepted industry practices to identify hazards, actual or potential, with a customer's water system, non-potable water system, plumbing fixtures, and industrial piping systems; and with the authority to require of a customer the installation of an approved backflow prevention assembly for the sole purpose of adequately protecting the public potable water supply system.

AUXILIARY WATER SUPPLY - Any water supply on or available to the premises other than the City of Tallahassee's approved public potable water supply. These auxiliary waters may include, but not be limited to, water from another purveyor's public potable water supply or any natural source(s) such as a well, spring, stream, river, etc., or "used waters" or "industrial fluids". These auxiliary waters may be contaminated or polluted, or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

BACKFLOW - The undesirable reversal of flow in a potable water distribution system as a result of a cross-connection.

BACK PRESSURE - A pressure, higher than the public potable water supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow.

BACK SIPHONAGE - Backflow caused by negative or reduced pressure in the public potable water supply piping.

BACKFLOW PREVENTER – An assembly, device or method that prohibits backflow of fluid into a potable water system. The type of backflow preventer used shall be based on the degree of hazard, either existing or potential.

Air Gap (AG) – The unobstructed vertical distance through free atmosphere between the lowest effective opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood rim of the receptacle. These vertical, physical separations must be at least twice the effective opening of the water supply outlet, never less than 1 inch above the receiving vessel flood rim.

Double Check Valve Backflow Prevention Assembly (DC) – A complete assembly consisting of two internally spring-loaded, independently operating check valves located between two tightly closing resilient-seated shut-off valves and with four properly placed resilient-seated test cocks for testing the water tightness of each check valve. This assembly shall only be used to protect against non-health (low) hazards.

Double Check Detector Backflow Prevention Assembly (DCDA) - A specially designed backflow assembly composed of a line-sized approved double check valve assembly with a bypass connection containing a specific water meter and an approved double check valve assembly. The bypass meter shall be capable of accurately registering very low flow rates (up to 3 gpm) and shall show a registration for all flow rates. This assembly shall only be used to protect against non-health (low) hazards.

Dual Check (DuC)- A device containing two internally spring-loaded, independently acting check valves, excluding shut-off valves and test cocks and cannot be tested in-line. This is not an approved backflow prevention assembly.

Pressure Vacuum Breaker Assembly (PVB) - An assembly containing an independently operating check valve and an internally spring-loaded, independently operating air inlet valve located on the discharge side of the check valve; and that is equipped with properly placed resilient-seated test cocks and tightly closing resilient-seated shut-off valves located at each end of the assembly designed to be operated under pressure for prolonged periods of time to prevent back siphonage. The assembly may not be subjected to any back pressure. .

Reduced Pressure Principle (Zone) Backflow Prevention Assembly (RP) – A complete assembly consisting of a mechanical, independently acting, hydraulically dependent relief valve, located between two internally spring-loaded, independently operating check valves, located between two tightly-closing resilient-seated shut-off valves and with four properly placed resilient-seated test cocks for testing the water tightness of each check valve. This assembly shall be used to protect against health (high) hazards.

Reduced Pressure Principle Detector Backflow Prevention Assembly (RPDA) - A specially designed backflow assembly composed of a line-sized approved reduced pressure principle assembly, with a bypass connection containing a specific water meter and an approved reduced pressure principle assembly. The bypass meter shall be capable of accurately registering very low flow rates (up to 3 gpm) and shall show a registration for all flow rates. This assembly shall only be used to protect against both non-health (low) and health (high) hazards.

CONTAMINATION - An impairment of the quality of the potable water supply by the introduction or admission of any foreign substance that degrades the quality and creates a health hazard.

CROSS-CONNECTION - A connection, actual or potential, between any part of the public potable water supply system and any other environment containing "other substances" in a manner that, under any circumstances would allow such substances to enter the public potable water supply system. "Other substances" may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable), or any matter that may change the physical characteristics the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies through which, or because of which backflow could occur are considered to be cross-connections.

HAZARD, DEGREE OF - The term is derived from an evaluation of the potential risk to public health and the potential adverse effect of the hazard upon the public potable water supply system. The evaluation of the degree of hazard shall be determined by the City of Tallahassee's Authorized Agent(s).

HAZARD, HEALTH (HIGH) - A cross-connection, or potential cross connection, involving any substance that could, if introduced in the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.

HAZARD, NON-HEALTH (LOW) - 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.

INDUSTRIAL FLUIDS SYSTEM – Any system containing fluid or solution, including all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances to produce, convey or store substances that may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration, such as would constitute a health hazard or a non-health hazard, if introduced into a public potable water supply system. This may include, but not be limited to: polluted or contaminated waters: all types of processed water and "used water" originating from the public water system which may have deteriorated in sanitary quality: chemicals in fluid form: plating acids or alkalis; circulated cooling waters connected to an open cooling tower and/or cooling tower that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, irrigation canals or systems, etc.; oils, gases, paraffin's, caustic, and acid solutions and other liquids and gaseous fluids used in industrial or other purposes or for fire- fighting purposes.

IRRIGATION SYSTEM- A system of piping which allows water to be applied to land or soils by means of a permanent above-ground or subsurface drip system, sprinkler, or micro-sprinkler equipment under water pressure.

NON-POTABLE WATER - Water that is not safe for human consumption or that is of questionable quality.

NON-RESIDENTIAL – See RESIDENTIAL definition.

POLLUTION - 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.

POTABLE WATER – Water that is safe for human consumption.

RESIDENTIAL SERVICE CONNECTION – Any service connection that is two inches or less in diameter and that supplies water to a building or premise containing only dwelling units. Non-residential service connection means any other service connection.

WATER PURVEYOR - The owner or operator of a public potable water supply system. As used herein, the terms “water purveyor” and “City” or “City of Tallahassee” may be used synonymously.

WATER SERVICE CONNECTION - This is the point at which the water purveyor’s jurisdiction over the sanitary control of the public water supply system ends, and the customer’s responsibility for operation and maintenance begins – also known as the Point of Delivery. Where a water meter is installed at the water service connection, then the water service connection shall mean the downstream end of the meter setting, typically at the customer’s isolation valve. Water service connections shall also include water service connections from a piped fire line system, fire hydrant and all other temporary or emergency water service connections from the public potable water system.

WATER USED - Any water supplied by a water purveyor from a public 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.

Section 3 – Requirements

3.1 Water Service Connections

No water service connection to any premises, facility, or area shall be installed or maintained unless the public potable water supply system is protected as required by State and local rules and regulations and these Rules and Regulations for Backflow Prevention and Cross-Connection Control.

3.2 Backflow Prevention Assembly Requirements

The installation and location of approved backflow prevention assemblies shall be in accordance with the City Standards Specifications for Water and Sewer Construction, City plumbing code, and these Rules and Regulations for Backflow Prevention and Cross-Connection Control.

3.2.1 Health (High) Hazard – All new potable water service connections capable of creating a health/high hazard per AWWA Manual M14, or as determined by the City, shall be installed with an approved reduced pressure principle backflow prevention assembly (RP) prior to receiving water service. Existing potable water service connections with health (high) hazard, or any change in use of an existing water service which has the

potential to create a health (high) hazard, shall require the installation of an approved RP. All costs associated with the procurement, installation, testing, and maintenance of a required approved RP shall be the responsibility of the customer.

3.2.2 Non-Health(Low) Hazard - All new non-health(low) hazard potable water service connections shall be installed with an approved double check valve backflow prevention assembly (DC) prior to receiving water service. Existing potable water service connections with non-health (low) hazard, or any change in use of an existing water service which has the potential to create a non-health(low) hazard, shall require the installation of an approved DC. All costs associated with the procurement, installation, testing, and maintenance of a required approved DC shall be the responsibility of the customer.

3.2.3 Installation Requirements - An approved backflow prevention assembly shall be installed at ALL water service connections if a cross-connection, actual or potential, exists. Other specific circumstances requiring the installation of an approved backflow prevention assembly shall include, but not be limited to the following:

1. When the City determines that installation of a backflow prevention assembly is necessary due to the degree of hazard to the public water supply system posed by any circumstances at a service location.
2. When the City determines that any facility has an actual or potential cross-connection.
3. When internal cross-connections are present and cannot be eliminated.
4. When a fire sprinkler system is installed.
5. When reclaimed water serves the facility.
6. In all multistory buildings with 5 or more levels (including elevated facilities above carports/garages) or any building with a booster pump or elevated storage tank.
7. When the plumbing system makes it impractical to ascertain whether cross-connections exist.
8. When the City determines that additions or changes have been made to the plumbing system of any facility without proper permits.
9. When a facility has multiple water service connections for adequacy of supply or fire protection. In such case, each service connection shall have a backflow prevention assembly commensurate with the highest degree of hazard likely to occur at the facility.
10. When the nature and extent of any activity at a service location, or the materials or equipment used in connection with any activity at a service location, or materials stored at a service location could present a hazard upon entry into the City's system.
11. When entry to property and improvements at any service location is restricted so that inspections for cross-connections cannot be made with sufficient thoroughness or frequency to assure that cross connections do not exist.

12. When a building is constructed on commercial property and the end use of such building is not determined or could change.
13. When any premise has an auxiliary water supply available, interconnected or not interconnected, with public potable water supply system.
14. When construction projects require access to the public water supply system.
15. When a person who owns or operates any vehicle, including but not limited to, storage tanks, spray rigs, and similar equipment, that uses water from the public water supply system. In such case, vehicles shall connect only to water service connections protected by an approved backflow prevention assembly commensurate with the highest degree of hazard likely to occur at the time of filling.
16. When a potable water service and meter is connected to an in-ground irrigation system
17. When a separate City irrigation service and meter is connected to the public potable water supply system.

At its discretion, the City may identify or determine that other conditions, in addition to the circumstances listed above, may require installation of a backflow prevention assembly. The City shall determine the type and location of any backflow prevention assembly to be installed based upon these Rules and Regulations and the degree of hazard posed by the particular situation.

3.2.4 Installation Prohibited on Rights-of-Way/Exceptions - No person shall install or maintain a backflow prevention assembly upon or within any city right-of-way except as allowed by this section.

1. The City may grant an exception and allow installation of a backflow prevention assembly upon or within a city right-of-way if the person requesting permission demonstrates that there is no other feasible location for installing the assembly and that installing it in the right-of-way will not interfere with traffic, utilities or any other public use of the right-of-way. The exception shall be approved in writing and the location, height, enclosure and other requirements relating to such installation shall be set forth in the terms and conditions of the approval.
2. The owner of property, or the owner, operator, and manager of a facility served by a backflow prevention assembly installed upon or within a city right-of-way shall, at the request of the City and at the sole expense of such owner, operator, or manager, relocate the assembly when such relocation is deemed necessary for street, sidewalk, or utility construction or repairs or for purposes of public safety or for convenience in use of the right-of-way.

3.2.5 Installation and Maintenance Responsibility - Backflow prevention assemblies shall be installed and maintained by the customer, at their expense.

3.3 Backflow Prevention Assembly Installation

3.3.1 General Installation Requirements – Required approved backflow prevention assemblies are to be installed in accordance with the Construction Standards section of these Rules and Regulations and the specific requirements provided below:

1. Each assembly shall be sized to provide an adequate supply of water and pressure for the facility being served.
2. The size of each assembly shall be equal to or greater than the water meter providing service.
3. On facilities where non-interruption of water supply is critical, two assemblies of the same type shall be installed in parallel.
4. Bypass lines are prohibited. Pipefittings that could be used for connecting a bypass line shall not be installed.
5. Each assembly shall be installed on the customer side of the water meter, prior to any water take off serving the site, and located within 5 feet of the meter.
6. Each assembly shall have a minimum of eighteen (18) inches clearance on the back side and eighteen (18) inches clearance on the test cock side. The relief valve opening shall be at least twelve (12) inches above the grade/floor or highest possible water level, but no higher than 36".
7. Assemblies shall only be installed in the orientation (horizontal or vertical) for which they have received full acceptance and approval in both field and laboratory testing by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
8. Each assembly shall be readily accessible for testing and maintenance and shall be located in an area where water damage to buildings or furnishings will not occur from relief valve discharge.
9. Air gap separations shall not be altered in any way and shall be available for inspection at all reasonable times.
10. For reduced pressure principle assemblies that have been approved to be installed in interior areas within facilities, an approved air gap shall be located at the relief valve orifice.
11. For reduced pressure principle assemblies, an approved air gap funnel assembly may be used to direct minor discharges away from the assembly provided the air gap funnel assembly will not control flow in a continuous relief situation. Daylight drain ports shall be provided to accommodate full pressure discharge from the assembly.
12. No deviations from this section shall be permitted without prior written approval of the City.

3.3.2 Air Gap (AG) - Air gap separations provide maximum protection from backflow hazards and, as an alternate to mechanical backflow prevention assemblies, may be installed at any facility where a substance is handled that could be hazardous to health if introduced into the public potable water supply system.

3.3.3 Reduced Pressure Principle Backflow Prevention Assembly (RP) - Reduced pressure principle assemblies shall be installed at any facility where a substance is handled that could be hazardous to the public health if introduced into the public potable water supply system.

3.3.4 Reduced Pressure Principle Detector Backflow Prevention Assembly (RPDA) – Reduced pressure principle detector assemblies shall be installed on fire protection systems for which a main-line meter is not used but the need to determine leaks or unwanted usage is desired and where a substance is handled that could be hazardous to the public health if introduced into the public potable water supply system.

3.3.5 Double Check Valve Backflow Prevention Assembly (DC) - Double check valve assemblies shall be installed at a facility where a substance is handled that could be objectionable, but not hazardous to health, if the substance is introduced into the potable water supply system.

3.3.6 Double Check Detector Backflow Prevention Assembly (DCDA) - Double check detector assemblies shall be installed on fire protection systems for which a main-line meter is not used but the need to determine leaks or unwanted usage is desired and where a substance is handled that could be objectionable, but not hazardous to health, if the substance is introduced into the potable water supply system.

3.3.7 Dual Check (DuC) - Dual check valves may be installed to reduce risks from backflow at residential properties for internal protection only. Installations shall be in accordance with the Code of Ordinances, the current adopted plumbing code by the City and applicable State of Florida and are monitored by the Building Inspection Division, Growth Management Department.

3.4 Inspections

A customer water service inspection for cross-connection control shall be performed by the City's Authorized Agent in the following circumstances:

1. Prior to providing potable water service to a newly constructed facility.
2. After any alterations or improvements to the water service connection or customer's water system of a facility served by the public potable water supply system.
3. Upon installation of an irrigation system, non-potable irrigation system, or fire suppression system at a facility served by the public potable water supply system.
4. As part of the City's Backflow Prevention and Cross-Connection Control Program, or when the City has cause to believe that an existing service location, commercial or residential, contains an actual or potential cross-connection.

At the discretion of the City, continuation or provision of permanent water service to any affected facility or customer location can be made contingent upon completion of such inspections and installation of all approved backflow prevention assemblies required by the cross-connection inspector.

For all new construction, Certificates of Occupancy shall not be issued by the Building Inspection Division, Growth Management Department until final inspection of required approved backflow prevention assemblies by the City's Authorized Agent has been performed, and that satisfactory test results by an approved certified cross-connection technician have been received and recorded.

3.5 Registration and Testing

Required approved backflow prevention assemblies are installed in locations where a hazard or potential hazard exists to provide a reliable means of protection of the public potable water supply system. To ensure the continued protection of the public potable water supply system, the approved backflow prevention assembly shall be registered with the City and field-tested to verify the assembly is properly functioning.

3.5.1 Registration – All backflow prevention assemblies shall be registered with the City Underground Utilities. Such registration shall be completed using the most current City Backflow Prevention Assembly Test and Maintenance Report (TMR) form.

3.5.2 Recordkeeping – A copy of all certified testing reports shall be provided to the City. The City will not accept any report regarding a backflow prevention assembly that was not prepared by an approved and properly certified technician and will not accept any such report, even though rendered by an approved technician, if:

1. The report is altered, incomplete, non-legible, or inaccurate;
2. The incorrect City test and maintenance report form is used;
3. The reporting approved technician used inaccurate gauges;
4. The reporting approved technician used improper testing procedures; or,
5. The approved technician rendering such report is in violation of any requirement of these Rules and Regulations.

3.5.3 Responsibility for Testing – Water service customer compliance with the testing and reporting required by these Rules and Regulations is a condition of the water service provided by the City. Said testing and reporting shall be the responsibility of the water service customer. However, if the water service customer is not the property owner and if the customer has a contractual relationship with the owner or other third party that makes said third party responsible for operation, maintenance, testing and reporting of the required backflow assembly, then the water service customer or the responsible third party may provide written notification of an assignment of responsibility for the backflow assembly operation, maintenance, testing and reporting. In such a circumstance the City will send pertinent testing and reporting notices to said third party. However, notwithstanding such an assignment, if a violation of the Rules and Regulations warrants a cessation of water service pursuant to Section 4, it is the water service customer's water service that will be terminated.

Residential water service customers have the option of authorizing the City, or a plumber under contract with the City, to test the water service customer's backflow prevention assembly. The cost of testing the assembly will be charged to the customer on their utility bill. Any necessary maintenance including repairs or replacement shall be the responsibility of the water service customer.

3.5.4 Testing Frequency - Each approved assembly shall be tested according to the following schedule:

1. At the time of installation, but no later than 10 calendar days after installation of a new backflow prevention assembly;
2. From the date of installation:
 - (a) Annually for non-residential water service connections.
 - (b) Biennially for residential water service connections if all the following conditions are met:
 - (i) The dwelling, or building within which the dwelling is located, is fewer than five stories in height;
 - (ii) There is no booster pump serving or within the premises; or
 - (iii) There is no alternate water source serving or within the premises.
3. Immediately after the repair or replacement of the assembly;
4. Immediately after the assembly has been relocated; or
5. At the request and discretion of the City's Authorized Agent

3.5.5 Testing Procedures - All testing of approved backflow prevention assemblies shall be in accordance with each assembly's manufacturer's recommended procedures and one of the following:

1. The American Backflow Prevention Association Tester Certification Program, Florida Section;
2. The University of Florida TREEO Center – Backflow Prevention: Theory and Practice;
3. Florida Section – American Water Works Association (FS-AWWA);
4. Other City approved methods for testing procedures.

3.5.6 Residential Backflow Customer's "Opt-In" Testing Program - The City shall offer residential water service customers the option of participating in the City's "opt-in" testing program. Under this program, a residential water service customer can authorize the City's contractor to test the backflow prevention assembly on the customer's behalf. If a residential water service customer elects to "opt-in", a fee for testing the backflow assembly shall be charged to the customer's monthly utility bill. The fee shall be \$3.00 per month if testing is required biennially and \$6.00 per month if testing is required annually. The water service customer will remain registered in the program until written cancellation is received from the customer however the customer will continue to be charged a monthly fee until payment for the prior testing has been paid in full.

The City's "Opt-In" Program is only for testing. Any maintenance or service needs identified through testing remain the responsibility of the water service customer. The City's contracted plumber will notify the customer of any required repairs that were determined during the backflow assembly test.

3.5.7 Approved Certified Testers – All testing of required approved backflow prevention assemblies shall be performed by certified cross-connection control technicians approved by the City. In order to become approved by the City, a person must meet the following minimum requirements:

1. Complete and file a registration application with the City, which includes evaluation of testing proficiency and general knowledge of backflow assemblies;
2. Furnish evidence satisfactory to the City that the applicant has attended and successfully completed a comprehensive training program sanctioned by the Florida Section - American Water Works Association (FS-AWWA);
3. Demonstrate that the applicant has available the necessary tools and equipment to properly test backflow prevention assemblies; and
4. Provide evidence that all test kits to be used to test backflow prevention assemblies have been calibrated and tested for accuracy (+/- 2.0%) in accordance with the equipment manufacturer's recommendations.

The City shall provide written notification of approval or rejection, and the reason therefore, if rejected, to each applicant within 30 calendar days following receipt of a complete application (including all support documentation and information). Upon receipt of approval, the applicant may provide testing services for City water service customers provided they maintain their approved status in good standing with the City.

3.5.8 Maintaining Approved Status – A certified cross-connection control technician shall retain approved status provided the following conditions are achieved:

1. Every two years, attend and successfully complete a re-certification training course approved by the City and sanctioned by FS-AWWA. Documentation of re-certification shall be provided to the City.
2. Annually, have each test kit calibrated and tested for accuracy (+/- 2.0%). Documentation of calibration testing shall be provided to the City.
3. Perform competent and accurate certifications of each backflow prevention assembly tested. Documentation of inspection reports with test results shall be provided to the City for each assembly tested.
4. No changes are made to the design or operating characteristics of any backflow prevention assembly tested.

3.6 Repair and Maintenance

All repairs and maintenance of approved backflow prevention assemblies required by these Rules and Regulations or the City shall be the responsibility of the water service customer. Repairs and maintenance of a backflow prevention assembly must be made by a licensed plumber. All repairs and maintenance shall be in accordance with the manufacturer's recommended procedures, using manufacturer's approved parts, and in accordance with these Rules and Regulations, City Code of Ordinances, applicable plumbing code, and State law.

Where repairs to a backflow prevention assembly cannot be made to comply with the requirements of these Rules and Regulations, the customer shall replace said assembly with a proper approved backflow prevention assembly, suitable for the degree of hazard, in accordance with these Rules and Regulations. The City shall not be liable for any damages, financial or otherwise, as a result of the required repairs, maintenance, or replacement of the approved backflow prevention assembly.

Section 4 – Emergency Procedures, Violations, and Enforcement

4.1 Violations

Non-compliance with any of these Rules and Regulations may result in suspension, discontinuation, or denial of water service until the customer has eliminated the actual or potential backflow hazard or cross-connection in accordance with these Rules and Regulations and to the satisfaction of the City.

4.2 Serious and Immediate Threats

When a backflow hazard or uncontrolled cross-connection, actual or potential, has been identified within a customer's water system and is judged to be a serious and immediate threat to the health or welfare of any person, public potable water supply system, or to the environment, the City may, without prior notice, disconnect or suspend potable water service to any customer, facility, or area when such disconnect or suspension is necessary to temporarily eliminate the threat.

Upon the disconnection of service, the City shall notify the water service customer of such suspension of service in person or by certified mail, return receipt requested, and shall order the water service customer to permanently eliminate the threat.

The affected potable water service, once disconnected, shall be restored only when the affected customer presents satisfactory proof to the City that the backflow hazard or cross-connection has been eliminated and its cause has been determined and corrected. The customer is responsible for all fees and damages incurred due to actual or potential backflow incidents.

4.3 Less Serious but Ongoing Threats

When a backflow hazard or uncontrolled cross-connection, actual or potential, has been identified within a customer's water system and is judged not to be a serious and immediate threat to the health or welfare of any person, public potable water supply system, or to the environment, as to constitute an emergency requiring an immediate service interruption, the customer shall be allowed 30 calendar days from receipt of written notification to eliminate the threat. Such threats include the absence of an approved backflow prevention assembly or the failure on behalf of the water service customer to properly test or maintain an existing backflow prevention assembly in accordance with these Rules and Regulations.

1. **No Existing Backflow Prevention Assembly** - In the situation where a backflow prevention assembly is required and has not been installed, the water service customer shall install an approved backflow prevention assembly. If, after 30 calendar days, the water service customer has not corrected the backflow hazard or uncontrolled cross-connection, the City shall issue a final notification by

certified mail-return receipt requested. The final notification shall instruct the water service customer to permanently eliminate the threat within 14 calendar days and notify them that failure to do so within 14 calendar days will result in the immediate interruption of water service. After the 14 calendar days, the City shall disconnect or suspend water service if the water service customer has not complied or been granted an extension.

2. **Improper Testing and Maintenance of Existing Backflow Prevention Assembly** - In the situation where a backflow prevention assembly exists, but the assembly has not been properly tested per Section 3.5 of this Manual, the water service customer shall have the backflow prevention assembly tested pursuant to said Section. If the water service customer fails to provide the City with a test report complying with Section 3.5 within 30 calendar days of the above referenced written notification, the City shall take affirmative action to reduce or eliminate the threat as indicated below for the specific customer type.

Residential Customers:

The City shall notify the customer by certified mail, return receipt requested, that due to the customer's failure to comply with the testing requirements for backflow prevention assemblies the customer will be mandatorily enrolled in the Opt-In Testing Program for backflow prevention assemblies, the cost of which will be charged to the customer on their monthly utility bill. The notice will advise the customer they have the option of avoiding mandatory enrollment by providing the City with a test report pursuant to the requirements of Section 3.5 within 14 calendar days of the receipt of this second written notice.

Non-residential Customers:

The City shall issue a final notification to the customer by certified mail, return receipt requested, that due to the customer's failure to address the backflow hazard or uncontrolled cross-connection, the water service customer has 14 calendar days from receipt of this final notice to permanently eliminate the threat and that failure to do so within 14 calendar days will result in the immediate interruption of water service. After the 14 calendar days, the City shall disconnect or suspend water service if the water service customer has not complied or been granted an extension.

4.4 Requests for Extension

If, for any reason, a water service customer cannot comply within the time requirements for eliminating a backflow hazard or uncontrolled cross-connection, the customer may request a time extension in writing for consideration and possible approval by the City. Each request shall be accompanied by a compliance plan - clearly identifying the actions or steps to be taken by the water service customer in order to make the necessary corrections to eliminate the threat. The compliance plan must include a time schedule for implementing the proposed actions or steps. Requests for extensions without a compliance plan will not be considered. Requests for an extension of time to avoid mandatory enrollment in the Opt-In Testing Program, that is the result of a failure to address testing or maintenance of a backflow prevention assembly, shall also not be considered.

4.5 Fraudulent Inspection Reports and Testing

Fraudulent inspection reports or test results submitted by an approved certified cross-connection technician shall be just cause for revocation of their "approved" status by the City. Other penalties may be pursued if the quality of the public potable water supply is jeopardized as a result of a backflow prevention assembly receiving fraudulent inspection or test report.

Section 5 – Construction Standards

5.1 General Construction Standards

All backflow prevention assemblies and associated piping shall be installed in accordance with the City Code of Ordinances, the current adopted plumbing code, and applicable State of Florida Law. Additionally, all backflow prevention assemblies shall be installed in accordance with the following requirements in order to ensure the proper operation of and accessibility to the assembly:

1. Only Approved backflow prevention assemblies shall be installed. Assemblies that have been installed or repaired shall not be altered from their Approved configuration.
2. If a backflow assembly must be subjected to environmental conditions that could freeze or heat the assembly beyond its working temperatures, some means of protection shall be installed to provide the correct temperature environment for the assembly. Special precautions shall be taken to protect the assembly from external heat sources (i.e. welding or soldering equipment) that could damage the internal components and prevent proper operation of the assembly.
3. No part of a backflow prevention assembly shall be submerged in water or installed in a location subject to flooding.
4. Minimum and maximum ground clearance is measured from the floor or ground to the lowest part of the assembly. The maximum height for any component of the assembly shall be no greater than seventy-two (72) inches above ground.
5. If a backflow assembly is located within a swale, ditch or area subject to flooding, the minimum ground clearance shall be measured from the established flood elevation.
6. Backflow prevention assemblies shall be installed so that the inlet shut-off valve of the backflow assembly is the next piped fitting (including piping) after the water meter, except where a meter bypass, limited area fire system, or strainer is needed; in which case, the inlet shut-off valve shall be the next piped fitting after the bypass, fire system, or strainer.
7. A backflow prevention assembly shall be installed within 5 feet of the point of delivery of the water supply, before any branch in the line.

8. Reduced pressure principle assemblies shall not be installed in a pit, vault or any area subject to flooding.
9. Where the backflow prevention assembly has been approved to be installed within the served building, the backflow prevention assembly inlet valve shall be a minimum of eighteen (18) inches from the wall or immediately after the ninety degree bend where the supply enters the floor. It is recommended that a floor drain be installed as close as possible to the assembly and that the assembly be installed with a relief valve orifice. The assembly shall be readily accessible between 8:00 a.m. and 5:00 p.m., Monday through Friday. Closet minimum size is forty (40) inches by seventy-two (72) inches with a thirty (30) inch standard door.
10. Each installation shall include properly located test cocks and manufacturer approved resilient seat shutoff valves. All shut off valves two (2) inches and under are to be ball valve types.
11. Lines shall be thoroughly flushed prior to installation. A Y-Type strainer with blow-down connection may be required ahead of the assembly to protect the assembly from recurring debris.
12. All backflow prevention assemblies shall be installed on pipe risers made of material approved by the City. Backflow prevention assemblies three (3) inches diameter and smaller shall use hard copper or galvanized metal riser material. Above-ground PVC is not allowed in any application.
13. No freeze protection equipment may be attached to the backflow prevention assembly or test cocks. If needed it shall be placed on the riser pipe located closest to the premise to allow flow through the assembly.

Appendix A – Typical Hazards

There are varying degrees of hazards, and the degree of protection should be commensurate with the degree of hazard. The following sections provide partial list of facilities and equipment that require protection against cross-connections. These facilities and equipment shall be served by an approved backflow prevention assembly of the type(s) designated below. Facilities and equipment not specifically identified within this section may require cross-connection control and shall be reviewed on a case-by-case basis by the City's Authorized Agent.

DC	Double Check Valve Backflow Prevention Assembly
DCDA	Double Check Detector Backflow Prevention Assembly
RP	Reduced Pressure Principle Backflow Prevention Assembly
RPDA	Reduced Pressure Principle Detector Backflow Prevention Assembly
PVB	Pressure Vacuum Breaker Assembly

A.1 Typical Facilities Requiring Protection

The following facilities shall require an approved backflow prevention assembly as indicated in the table below. The table lists the assemblies that provide the minimum level of protection required. The customer may elect to install an assembly that will provide a greater level of protection, but the assembly shall be subject to City approval. The assembly shall be installed prior to any water connection serving the site and shall be located within five feet of the meter or service connection to the public potable drinking water supply.

	Facility Type	Required Assembly
1.	Aircraft and Missile Plants	RP
2.	Automotive Plants	RP
3.	Auxiliary Water Supply (Interconnected; Commercial or Residential)	RP
4.	Auxiliary Water Supply (Not Interconnected; Commercial)	RP
5.	Auxiliary Water Supply (Not Interconnected; Residential)	RP
6.	Beverage Bottling Plants	DC
7.	Breweries	RP
8.	Buildings with sewer ejectors	RP
9.	Canneries, Packing Houses and Reduction Plants	RP
10.	Car Wash and water reclamation systems	RP
11.	Centralized Heating and Air Conditioning Plants	RP
12.	Chemical Plants	RP
13.	Commercial Laundries	RP
14.	Commercial Swimming Pools	RP
15.	Dairies and Cold Storage Plants	RP
16.	Dye Works	RP
17.	Food Processing or Preparation Facilities	RP
18.	Film Processing Laboratories	RP
19.	Fire Systems (residential 13D) less than 2-1/2"	DC

20.	Fire Systems with Stand Pipe Systems	DCDA
21.	Fire Systems with Sprinkler Systems	DCDA
22.	Fire Systems with pump and/or storage tank	DCDA
23.	Fire Systems with auxiliary supply	RPDA
24.	Fire System with Chemicals Additives	RPDA
25.	Schools, High Schools, and Colleges	RP
26.	Hospital, Mortuaries, Medical and Dental Buildings and Sanitariums	RP
27.	Laundries and Dye works	RP
28.	Irrigation Systems (with pop-up sprinkler heads, injector pumps, or alt. water source)	RP
29.	Irrigation Systems (without pop-up sprinkler heads, injector pumps, or alt. water source)	RP
30.	Laboratories	RP
31.	Manufacturing, Processing or Fabricating Plants	RP
32.	Mop Sinks	RP
33.	Motion Picture Studios	RP
34.	Multistoried Buildings (with booster pumps or internal reservoir)	RP
35.	Multistoried Buildings (with boiler systems or cooling towers)	RP
36.	Multistoried Buildings (non-health hazard)	DC
37.	Oil and Gas Production Plants	RP
38.	Paper and Paper Products Facilities	RP
39.	Plating Plants	RP
40.	Radioactive Materials Processing Facilities	RP
41.	Restaurants, Kitchens, Food Processing Facilities	RP
42.	Restricted, Classified or other Closed Facilities	RP
43.	Rubber Plants	RP
44.	Sand and Gravel Plants	RP
45.	Served by reuse or reclaimed water	RP
46.	Solar Domestic Hot-Water Systems with direct make-up lines	RP
47.	Steam Boiler Plants	RP
48.	Sewage and Storm Drainage Facilities (Including lift stations)	RP
49.	Water-Hauling Equipment	RP
50.	Where Cross-Connection is Maintained	RP

A.2 Other Equipment Requiring Protection

The presence of specific equipment on a site may also require the installation of an approved backflow prevention assembly. The type of assembly required shall be determined by the City of Tallahassee's Authorized Agent and shall be commensurate with the degree of hazard. If required, the assembly shall be installed prior to any water connection serving the site and shall be located within five feet of the meter or service connection to the public potable drinking water supply. The presence of an equipment-specific backflow prevention assembly may not necessarily relieve the need for (or requirement of) a site-specific backflow prevention assembly on the water service connection in order to protect the public potable water supply system.

Appendix B – Construction Details

BFP-1 – Backflow Prevention Assembly Configuration Requirements.

BFP-2 – Reduced Pressure Principle Backflow Prevention Assembly (1/2" – 2" Outdoor Residential)

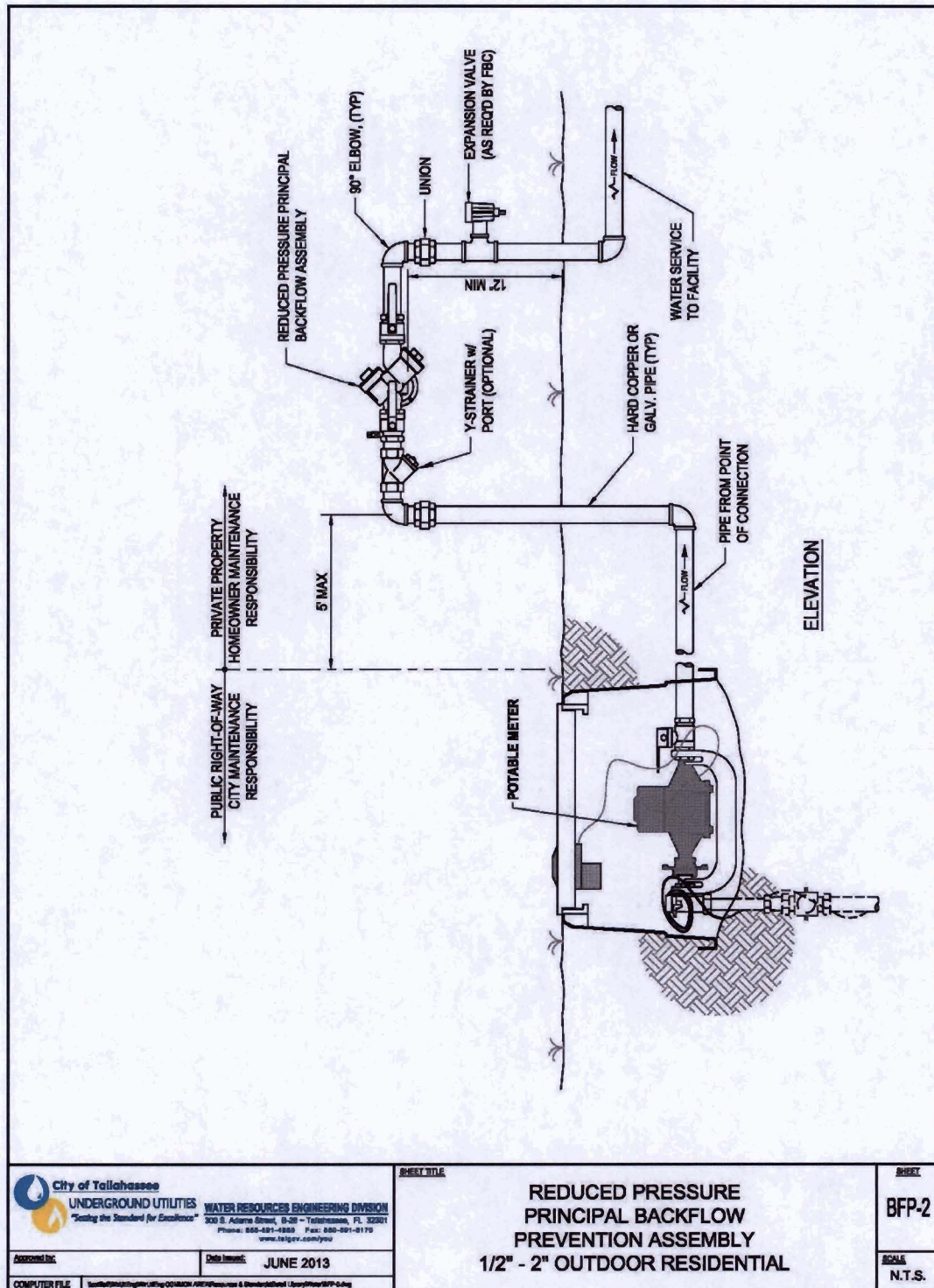
BFP-3 – Reduced Pressure Principle Backflow Prevention Assembly (1/2" – 2" Indoor Residential)

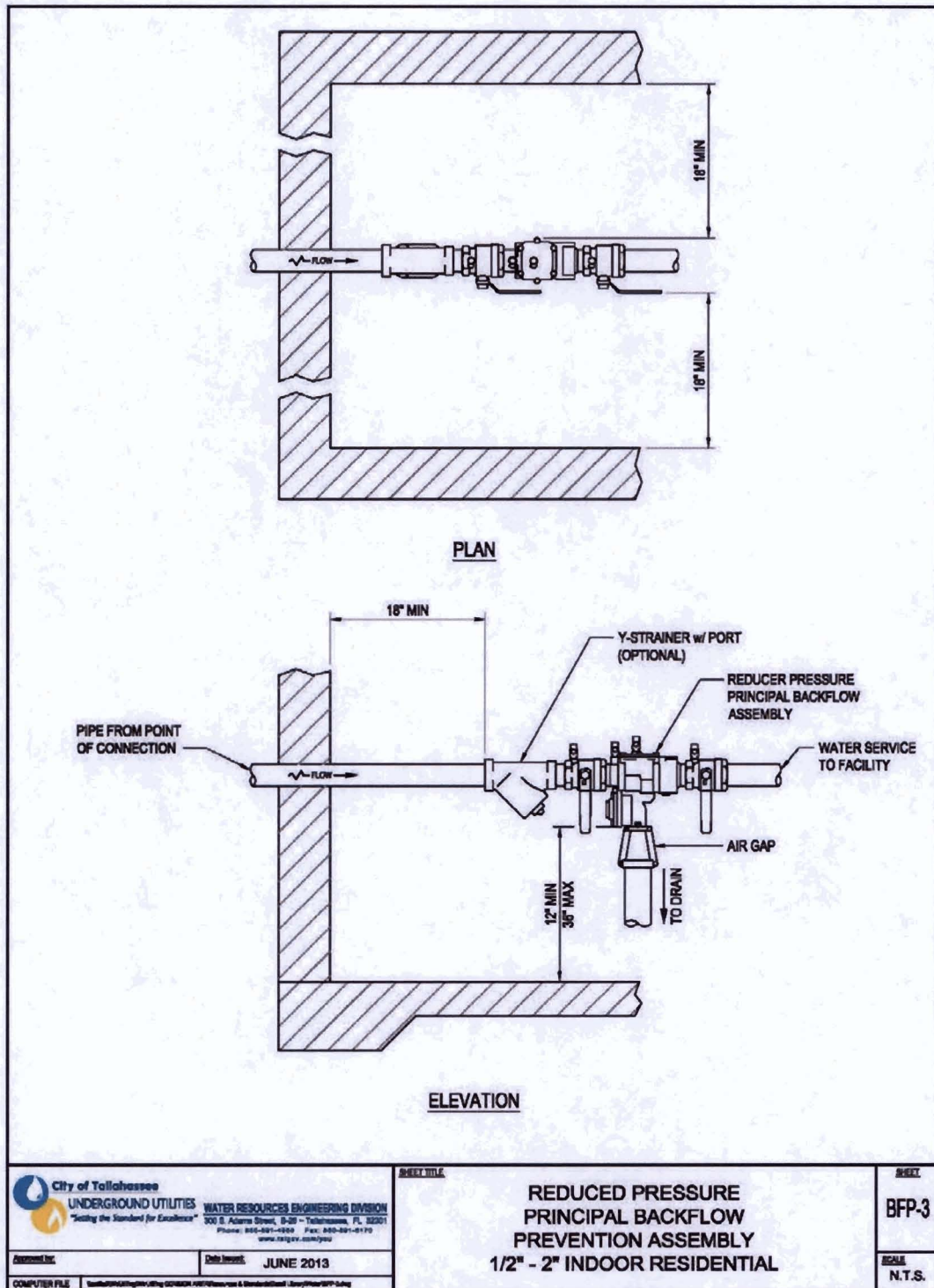
BFP-4 –Reduced Pressure Principle Backflow Prevention Assembly (3" – 12" Outdoor Commercial)

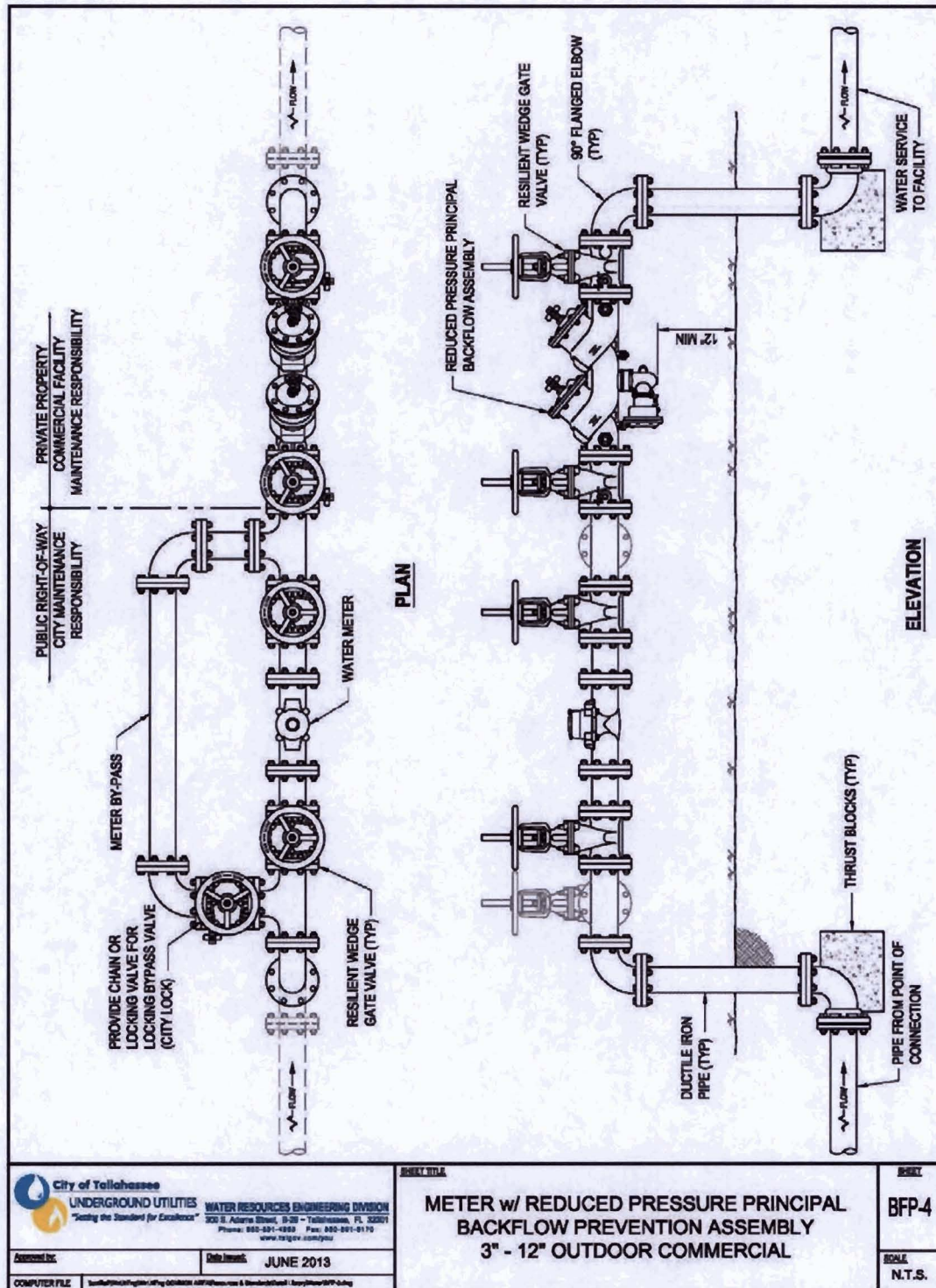
BFP-5 –Fire Line w/ Double Check Detector Assembly (3" – 12" Outdoor Commercial)

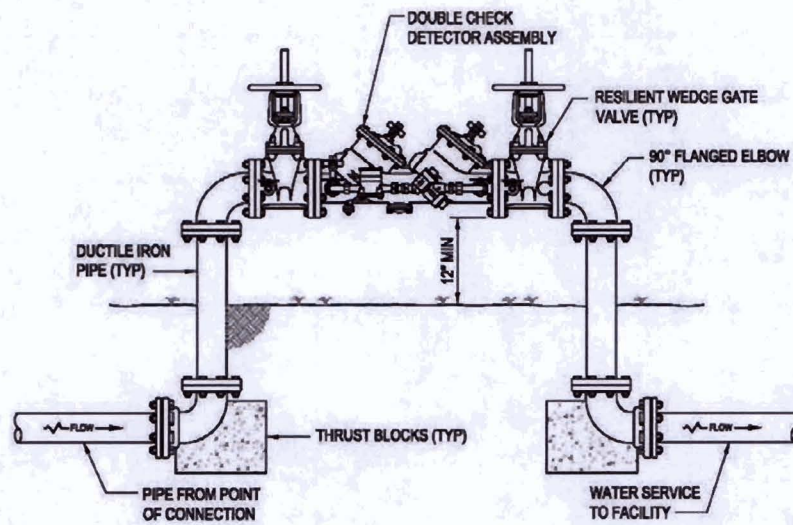
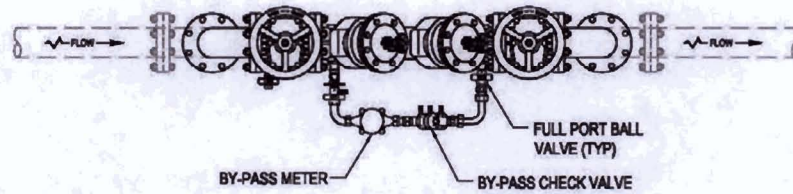
BFP-6 –Meter w/ Double Check Backflow Prevention Assembly (3" – 12" Outdoor Commercial)



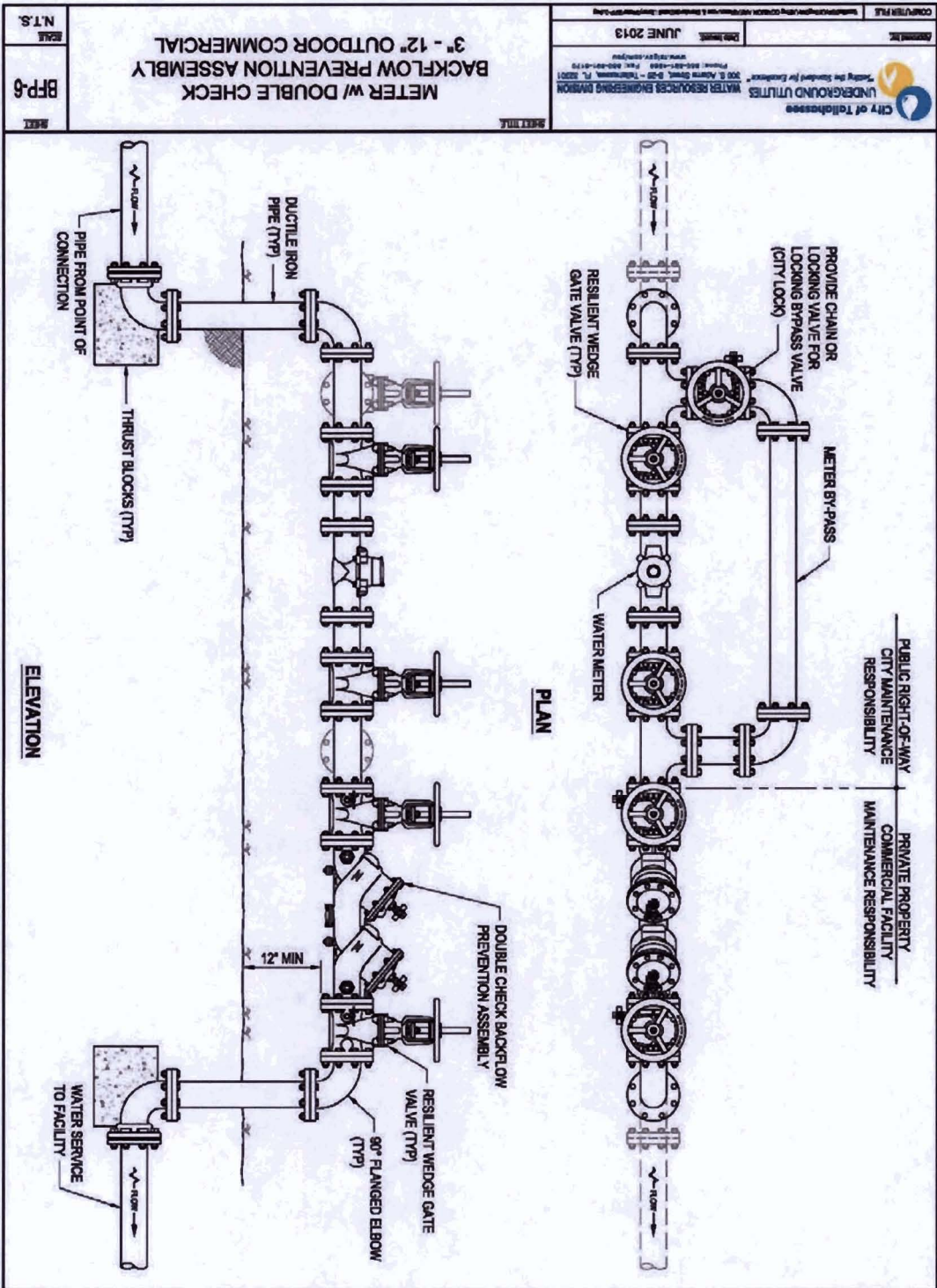








 City of Tallahassee UNDERGROUND UTILITIES "Setting the Standard for Excellence"		WATER RESOURCES ENGINEERING DIVISION 300 S. Adams Street, 8-28 - Tallahassee, FL 32301 Phone: 904-691-4868 Fax: 904-691-6170 www.tallahassee.gov		SHEET TITLE FIRELINE w/DOUBLE CHECK DETECTOR ASSEMBLY 3" - 12" OUTDOOR COMMERCIAL	SHEET BFP-5
Approved:	Date Issued: JUNE 2013				SCALE N.T.S.
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RESOLUTION NO. 15-R-15

A RESOLUTION BY THE CITY COMMISSION OF THE CITY OF TALLAHASSEE, FLORIDA, REVISING RULES AND REGULATIONS FOR BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL TO THE CITY'S WATER SYSTEM, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Tallahassee owns and operates a water system through which it provides water services to various consumers; and

WHEREAS, cross-connection to the City's water system presents a potential source of contamination for that system; and

WHEREAS, the City Commission, by approval of Ordinance No. 90-0-0017 on February 28, 1990, as amended by Ordinance No. 15-O-13, on April 22, 2015, provides for adoption of rules and regulations governing or controlling cross-connection; and

WHEREAS, the rules and regulations for backflow prevention and cross-connection control are required by the provisions of state law and administrative rule; and

WHEREAS, the rules and regulations for backflow prevention and cross-connection control are incorporated into Resolution No. 90-R-0004, which was approved by the City Commission on March 14, 1990; and

WHEREAS, the purpose of this resolution is to revise the City's rules and regulations for cross connection in their entirety to comply with subsequent revisions to the Florida Administrative Code using recommended practices of the American Water Works Association set forth in AWWA Manual M14 - *Recommended Practice for Backflow Prevention and Cross-Connection Control* and with Section 21-261, Regulation of cross connection, of the Tallahassee Code of General Ordinances. This

resolution also approves rules and regulations that provide the City with incremental enforcement options to achieve customer compliance other than discontinuance of water service.

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

1. The adoption of such rules and regulations governing cross connection is necessary in the public interest and in protection of the health, safety, and welfare of the consumers to whom the City provides water service.

2. The City Commission hereby adopts this resolution revising the City's rules and regulations for backflow prevention and cross-connection control, which revised rules and regulations are attached hereto as Attachment 1, and by reference incorporated as if set forth herein, pursuant to Section 21-261 of the City of Tallahassee Code of Ordinances. Attachment 1 replaces the rules and regulations adopted by the City Commission in Resolution No. 90-R-0004 in their entirety.

3. This resolution shall take effect immediately upon adoption.

ADOPTED by the City Commission of the City of Tallahassee this 22nd day of

April, 2015.

RECEIVED
CITY TREASURER-CLERK
2015 MAY -5 AM 11:27



CITY OF TALLAHASSEE

By: Andrew D. Gillum
Andrew D. Gillum
Mayor

ATTEST:

APPROVED AS TO FORM:

By: James O. Cooke IV
James O. Cooke IV
City Treasurer-Clerk

By: Lewis E. Shelley
Lewis E. Shelley
City Attorney