SECTION 12
CROSS CONNECTION CONTROL POLICY

12.1 GENERAL

This Cross-Connection Control Policy (Policy), as adopted by the Lee County Board of County Commissioners through Ordinance #95-21, entitled "Potable Water Cross Connection Control Program" and as part of the Lee County Utilities Operations Manual (Manual), serves to insure that the safety of the potable water system of the Lee County Utilities (LCU) is maintained.

LCU:

A. Requires the review of this Policy before designing a project or installing a cross connection control device,

B. Believes the material in this Policy will provide the Customer with the understanding of cross-connections and cross connection control assemblies,

C. Will insure that the standards and specifications as set forth in this Policy will be uniformly enforced,

D. Reserves the right to update this Policy as necessary due to changes in FDEP policies and regulations and/or AWWA standards.

12.2 GOALS

A. Protection of the Public Water Supply System

To protect the public potable water supply from the possibility of contamination or pollution by isolating actual and/or potential cross-connections from the public potable water supply system that could create backflow by backpressure or back-siphonage (Rule 62-555 or latest edition, F.A.C.).

B. Elimination of Cross-Connections

To promote the elimination and control of cross-connections, actual or potential, between the public potable water system(s), and any other system(s) or plumbing fixture(s) in existing and future buildings and developments.

C. Cross-Connection Control Program

To provide for the maintenance and operation of a continuing program of cross-connection control, which will systematically and effectively prevent the

contamination or pollution of the public potable water supply system, as required by the FDEP (Rule 62-555 or latest edition, F.A.C.).

12.3 AUTHORITY

A. Federal

The United States Congress enacted the Safe Drinking Water Act (PL 93-532) into law on December 16, 1974. The purpose of the law is to assure that the nation's potable water supply systems meet minimum National Health Standards for the protection of public health.

In accordance with the Safe Drinking Water Act, the National Interim Primary Drinking Water Regulations were promulgated on December 24, 1975 and became effective on June 24, 1977. These regulations replaced the Public Heath Service Drinking Water Standard of 1962. It is stated in Appendix A of the rule that "minimum protection should include programs that result in prevention of health hazards, such as cross-connections."

The Safe Drinking Water Act and its regulations cover all public potable water systems with 15 or more service connections and systems that regularly serve 25 individuals. Under Section 1413 of the Safe Drinking Water Act, States may obtain primary enforcement responsibilities for their water quality program. However, the state's regulations must be equal to or exceed the federal regulations. The administrator of the EPA retains authority over states that do not obtain primacy.

B. State of Florida

The State was granted primacy over the water program under the authority of the "Florida Safe Drinking Water Act" Chapter 403-850-403.864 F.A.C. and Rule 17-22 "Public Drinking Water Systems". The regulations went into effect in November of 1977. The State's regulations were revised in November of 1987 to address the topic of cross-connection control and incorporated more specific language than that contained in the federal regulations. The State's regulations (Rule 17-22, F.A.C.) were revised again, and renumbered in January of 1989 as Rules 17-555 and 17-560, F.A.C. In December of 1996, Florida revised and renumbered their regulations again to Rules 62-550 and 62-555, F.A.C., respectively.

Rule 62-550.200 (18), F.A.C. defines a cross-connection as "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. Rule 62-555.360(1), F.A.C. states, "Cross-connection as defined in Rule 62-550.200, F.A.C. is prohibited."

Rule 62-555.360(2), F.A.C. states, "Community water systems shall establish a routine cross-connection control program to detect and prevent cross-connections that create or may create an imminent and substantial danger to the public health..."

The water purveyor is given the authority and responsibility to discontinue service to any Customer who refuses installation of a cross connection control assembly where an actual and/or a potential cross-connection may exist, (Rule 62-555.360(3), F.A.C.).

The authority to control and supervise the installation of approved cross connection control devices rests with the "supplier of water or his designated representative..." (Rule 62-555.360(4), F.A.C.).

C. Accepted Practices

The program shall utilize the accepted practices of the American Water Works Association guidelines as set forth in AWWA Policy M 14, entitled "Cross Connection Control" and Rule 62-555.330(6) and (7) F.A.C. or latest edition.

D. Objectives

A cross connection may result in the potable water system becoming a transmitter of diseases, and/or toxic materials and/or other hazardous liquids. Therefore, it is necessary to establish and maintain a cross-connection control program to protect the health of LCU's water system Customers and/or users of the potable water system by the control of actual or potential cross-connections through methods of containment and/or isolation.

12.4 DEFINITIONS

A. Analogous Words and Terms

For the purpose of this Policy, the following analogous words and terms shall be interpreted to have similar meanings when not inconsistent with the context:

1. Words used in the singular number include the plural and words used in the plural number include the singular.

2. Words used in the present tense include the future tense.

3. The word "constructed" includes the word "erected," "built," "installed," "rebuilt", and "repaired".

4. The word "structure" includes the word "building".

5. The word "include" is a word of enlargement and not limitation.

6. The word "shall" is mandatory and the word "may" is permissive.

B. Abbreviations

1. Agencies:

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
APWA	American Public Works Association
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing Materials
AWWA	American Water Works Association
DIPRA	Ductile Iron Pipe Research Association
EPA	United States Environmental Protection Agency
FCCCHR	Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California
FDOT	Florida Department of Transportation
FDEP	Florida Department of Environmental Protection
FDNR	Florida Department of Natural Resources

FDOH	Florida Department of Health
FPSC	Florida Public Service Commission
HUD	Department of Housing and Urban Development (Federal and/or State)
LCDNR	Lee County Division of Natural Resources
LCDOT	Lee County Division of Transportation and Engineering
LCU	Lee County Utilities Division
NCPI	National Clay Pipe Institute
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration (Federal and/or State)
UL	Underwriters Laboratories

2. General

DIP	Ductile Iron Pipe
fps	feet per second
F.A.C.	Florida Administrative Code
gpd	gallons per day
gpm	gallons per minute
HDPE	High Density Polyethylene
mgd	million gallons per day
p.s.i.	Pounds per Square Inch (gauge)

PVC	Polyvinyl Chloride
ROW	Right-of-Way

C. Definitions

Except where specific definitions are used within a specific section of this Policy for the purpose of such sections, the following terms, phrases, words, and their derivations shall have the meaning given when not inconsistent with the context.

Air Gap Separation shall mean 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 2 times the diameter of the supply pipe measured vertically above the overflow rim of the vessel with a minimum separation distance of 3 inches.

Approved shall reference an air-gap separation, a double check valve assembly, a reduced pressure principle cross connection control assembly or other cross connection control assemblies or methods that meet the requirements of Rule 62-555 F. A. C.

Atmospheric Vacuum Breaker (AVB) shall mean a cross connection control device that is operated by atmospheric pressure in combination with the force of gravity as defined by Rule 62-555 F.A.C. The unit shall be designed to work on a vertical plane only. The one moving part consists of a poppet valve that must be carefully sized to slide in a guided chamber and effectively shut off the reverse flow of water when a negative pressure exists. Use of this device shall be restricted to internal plumbing applications and not used for containment purposes at the service connection. (ASSE 1001)

Auxiliary Water Supply shall mean any water supply on or available to the premises other than LCU's potable water supply. These auxiliary waters may include other potable water supplies, wells, ponds, pools, canals, retention areas, or any other natural or manmade water source.

Backflow shall mean the undesirable reversal of water flow or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable water system from any source or sources as defined by Rule 62-555 F.A.C.

Backpressure shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping or by steam, and/or air pressure) above the supply pressure at the point of consideration that would cause or tend to cause a

reversal of the normal direction of flow.

Backsiphonage shall mean a form of backflow due to a reduction in system pressure, which causes a negative or sub-atmospheric pressure to exist at a site in water system that would cause or tend to cause a reversal of the normal direction of flow.

Cross Connection Control Assembly shall mean an assembly that has been manufactured in full conformance with AWWA Standards and meets the laboratory and field performance specifications of the FCCCHR. Cross Connection Control Assemblies shall also comply with the requirements of Rule 62-555 F.A.C.

Cross Connection Control Assembly (type) shall mean an effective assembly used to prevent backflow into a potable water system. The type of assembly used should be based on the degree of hazard either existing or potential. The types approved for use by LCU's Customers for non-internal usage are:

Double Check Valve Assembly
Double Check Detector Assembly
Reduced Pressure Principle Assembly
Reduced Pressure Detector Assembly

or other assemblies approved by the Utilities Director.

Certified Cross Connection Control Assembly Tester (also known as a Certified Backflow Prevention Device Tester) shall mean a person who can provide documentation proving competency in testing cross connection control assemblies to the satisfaction of the Utilities Director. The tester shall have attended and successfully completed an AWWA approved course for Cross Connection Control Assembly Testers, or a course endorsed by the AWWA, or other programs or training acceptable to the Utilities Director and FDEP. All Testers wishing to do business within LCU's service area must attend a mandatory orientation class conducted by County staff prior to being placed on the Approved Certified Cross Connection Control Testers List.

Certified Cross Connection Control Assembly Repairer (also known as a Certified Backflow Prevention Assembly Repairer) shall mean a person who can provide documentation proving competency in repairing cross connection control assemblies to the satisfaction of the Utilities Director. The repairer shall have attended and successfully completed an AWWA approved course for cross connection control Assembly Repairers, or a course endorsed by the AWWA, or other programs or training acceptable to the Utilities Director and FDEP. All repairers wishing to do business within LCU's Service Area must attend a

mandatory orientation class conducted by County staff prior to being placed on the Approved Certified Cross Connection Control Assembly Repairers List.

Certified Test Gauges shall be calibrated and certified annually, proof of which shall be required, to FCCCHR Standards by a testing lab approved by the Utilities Director.

Check Valve shall mean a valve that is drip-tight in the normal direction of flow when the inlet pressure is at least 1 p.s.i. and the outlet pressure is 0 p.s.i. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved cross connection control assembly, i.e., pressure vacuum breaker, double check valve assembly, or reduced pressure principle assembly.

Contamination shall mean impairment of the water quality that creates an actual hazard to the public health through poisoning or through the spread of disease or illness by sewage, industrial fluids, or any other means.

Cross-Connection shall mean a connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances would allow such substances to enter the potable water 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 color or add odor to the water.

Cross Connections-Controlled shall mean a connection between a potable water system and a non-potable water system with an approved backflow-prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

Cross-Connection Control by Containment shall mean the installation of an approved backflow-prevention assembly at the water service connection to any Customer's premises, where it is physically and economically unfeasible to find and permanently eliminate or control all actual or potential cross-connections within the Customer's water system; or it shall mean the installation of an approved backflow-prevention assembly on the service line leading to and supplying a portion of a Customer's water system where there are actual or potential cross-connections that cannot be effectively eliminated or controlled at the point of the cross-connection.

Customer shall mean the owner or operator of a private plumbing and/or water

system who receives water from LCU's potable water system.

Double Check Detector Assembly (DCDA) shall mean a specifically designed assembly composed of an approved double check valve assembly with a specific bypass water meter and an approved double check valve assembly all properly sized. The meter shall register accurately for low flow rates and shall total all flows. The valves are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks. This assembly shall be used to protect against a non-health hazard (pollutant) and uses subject to low water flows such as fire protection systems. (ASSE 1015)

Double Check Valve Assembly (DCVA) shall mean an assembly consisting of two internally loaded check valves, either spring loaded or internally weighted installed as a unit between two tightly closing resilient-seated shutoff valves and fittings with properly located resilient-seated test cocks. This assembly shall be used to protect against a non-health hazard (pollutant) and uses not subject to low water flows. (ASSE 1015)

Fire Protection System shall mean any system, public or private, used exclusively for the purpose of having water ready for the extinguishing of fire, usually sprinkler systems, hose rack systems, or hydrant systems, metered and unmetered, connected or independent of the waterworks system.

Hazard (degree) shall be derived from the evaluation of conditions within a system, which can be classified as either a "pollution" (non-health), or a "contamination" (health) hazard.

Hazard (health) shall mean an actual or potential threat of contamination to the public potable water system or the Customer's potable plumbing and/or water system.

Hazard (plumbing) shall mean an internal cross-connection in a Customer's potable water system that may be either a pollution or a contamination type hazard. This includes but is not limited to cross-connections with toilets, sinks, lavatories, wash trays, domestic washing machines and lawn sprinkling systems. Plumbing type cross-connections can be located in homes, apartment houses, hotels, commercial and industrial establishments, and other structures. An appropriate type of cross connection control assembly must properly protect all structures.

Hazard (pollution) shall mean an actual or potential threat to the physical properties of the potable water system or the potability of the public or the Customer's potable water system, but not constituting a health system hazard.

This type of hazard results in the degradation of the potable water system to levels that can be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

Health Agency refers to the FDOH or FDEP, depending upon jurisdiction.

Hose Bib Vacuum Breaker (HBVB) shall be any approved cross connection control device that consists of a spring loaded check valve that allows the device to vent to the atmosphere when the water is turned off. Use of this device shall be restricted to internal plumbing applications and not used for containment purposes at the service connection. (ASSE 1011)

Industrial Fluids shall mean any fluid or solution that may physically, chemically, biologically or otherwise contaminate or pollute potable water if introduced into the potable water system or Customer plumbing system or potable water system. Industrial fluids may include, but not be limited to polluted or contaminated water; all types of process waters and "used waters" originating from the public potable water system which may deteriorate in sanitary quality; chemicals in fluid form; plating acids and alkalis; circulated cooling water connected to an open cooling tower and/or cooling waters that are chemically or biologically treated or stabilized with toxic substances; contaminated natural water such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, etc., oil, gases, glycerin, paraffins, caustic and acid solutions; and other liquid and gaseous fluids used in commercial/industrial type processes or for fire fighting purposes.

Industrial Piping System (Customer's) shall mean any system used by the Customer for transmission, confinement or storage of any liquid, solid or gaseous substance other than an approved potable water supply. An industrial piping system includes all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey or store substances that can pollute or contaminate potable water.

Internal Use shall mean the utilization of a device or devices within any premises on the Customer's side of a water supply meter and/or master meter assembly and beyond the primary Cross Connection Control Device that protects the public water supply.

Laboratory (approved for testing) shall mean the foundation for FCCCHR or other testing laboratory approved by the Utilities Director.

Master Meter Assembly shall mean a meter and cross connection control assembly combination that serves two or more entities on a single non-single family or non-duplex residential premise. The meter shall be a compound type and the cross connection control assembly shall be a reduced pressure detector

assembly type.

Plumbing Official shall mean the Lee County Division of Codes and Building Code Enforcement Official.

Plumbing System shall mean the water supply and distribution pipes, plumbing fixtures and traps, soil, waste and vent pipes, building drains and sewers, including their respective connections, devices and appurtenances within the property line of the premises, and water-treating or water-using equipment.

Pollution shall mean an impairment of the quality of potable water to a degree that does not create a hazard to public health, but does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

Pressure Vacuum Breaker Assembly (PVB) shall mean an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve, with properly located resilient-seated test cocks and tightly closing resilient-seated shutoff valves attached at each end of the assembly. This assembly shall be designed to protect against a health hazard (contaminant) under a backsiphonage condition only and should not be used if backpressure could develop in the downstream piping. This assembly shall be used typically on irrigation systems not utilizing an auxiliary water source and not having elevated sprinkler heads. (ASSE 1020)

Reclaimed Water (formerly known as Reuse Water and Effluent Reuse) shall mean treated and disinfected effluent from a wastewater treatment plant used for irrigation, dust control, and all other purposes permitted by the F.A.C.

Reduced Pressure Detector Assembly (RPDA) shall mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve with a specific bypass water meter and an approved double check valve assembly all properly sized. The meter shall register accurately for low flow rates and shall total all flows. These units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks. This assembly shall be designed to protect against a health hazard (contaminant) and uses subject to low water flows. (ASSE 1013)

Reduced Pressure Principle Assembly (RPPA) shall mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. These

units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks. This assembly shall be designed to protect against a health hazard (contaminant) and uses not subject to low water flows. (ASSE 1013)

Service Connection shall mean the terminal end of a service connection from the public potable water system, i.e., where the water purveyor may lose jurisdiction and sanitary control over the water at its point of delivery to the Customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter.

Utilities Director shall be the person in charge of LCU vested with the authority and responsibility for the implementation of an effective cross-connection control program and the enforcement of the provisions of this Policy, or that person's designee.

Water (potable) shall mean any water, which according to recognized standards is safe for human consumption.

Water Purveyor shall mean the public or private owner or operator of the potable water system supplying an approved water supply to the public.

Water Supply (approved) shall mean any public potable water supply that has been investigated and approved by FDEP. The system must be operating under a valid permit.

Water Supply (auxiliary) shall mean any water supply available to the premises other than the purveyor's approved public potable water supply. Auxiliary water supplies include water from another purveyor's potable water supply; other water sources such as a well, spring, river, stream, harbor, reclaimed water, industrial fluids, or any other type of water supply not controlled by the primary water purveyor.

Water Supply (unapproved) shall mean a water supply that has not been approved for human consumption by FDEP and/or is not operating under a valid permit.

Water System(s) (Customer's) shall include any plumbing and/or water system located on the Customer's premises whether supplied by a public potable water system or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

Water System(s) (Customer's potable) shall mean that portion of a privately owned potable plumbing and/or water system between the point of potable water delivery by the water purveyor and the Customer's point of use. This system will

include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store, or use the potable water.

Water System (public) shall mean LCU's water supply system operated as a public water system under a valid permit from FDEP and other applicable regulatory agencies to supply potable water for domestic purposes. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances use to produce, convey, treat, or store potable water for public consumption or use.

12.5 RECORDS, ENFORCEMENT, AND INSPECTIONS

A. Responsibility of LCU

LCU is primarily responsible for the prevention of contamination and pollution of the public water mains. Such responsibility begins at the point of origin of the public water supply and includes adequate treatment facilities and water mains, and ends at the point of entrance to the Customer's water system, provided adequate backflow and back-siphonage protection is maintained on all water supply systems directly connected to the water purveyor's public system.

LCU is responsible for the protection of the potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through any and all water service connections. It shall be the goal of LCU to require an approved cross connection control assembly installation at the premises of all Customers, unless otherwise exempted in this Policy. The Director shall require that each existing and future Customer, as specified below, have an approved cross connection control assembly installed in accordance with this Policy. The size of the assembly or device installed shall not be less than the size of the meter currently being used.

The Director shall designate the location of all cross connection control assemblies. Though the assembly shall typically be within 1 foot of the Customer's side of the water meter, or as otherwise approved by the Director, assemblies shall always be located on the premise of the Customer. When the location of an assembly requires that it be placed inside of a building or similar structure, an aluminum sign as detailed in Section 9 of this Manual and measuring 12 inches high by 18 inches long, shall be bolted to the wall a minimum of 24 inches above the point where the potable water service or fire line enters the building. The sign shall have a white background with black lettering stating "Cross Connection Control Device Located Inside".

The Director, bearing proper credentials and identification, shall be permitted to

enter upon all properties for the purpose of sampling and testing of the water, or make inspections and observations of the connections to the public water supply system. Refusal to allow inspection of any water using equipment, plumbing or other cross connections shall cause the Director to discontinue water service and constitute a violation of this Policy.

As determined by LCU, cross connection control will be required for single-family and duplex residential customers only when there is an auxiliary water supply or swimming pool on site or when a cross connection or potential for a cross connection is found. This does not limit the authority of LCU to inspect single-family residential properties for the purpose of protecting the public water system.

In order to determine the degree of hazard to the public potable water system, Section 12.6 B below shall be used to determine the required assembly type that needs to be installed. As an alternative to the list, a survey may be made of the Customer's premises by LCU to determine the type of assembly needed. The survey need not be a detailed inspection of the location or disposition of the water lines, but can be confined to establishing the water uses on the premises, the existence of cross connections, and the availability of auxiliary or non-potable water supplies. Site inspections may be performed when deemed necessary by LCU to ensure compliance with this Policy.

B. New Construction

During the development review process, the Engineer shall utilize this Policy to determine the Customer's responsibilities concerning the installation of cross connection control assemblies or devices.

C. New Accounts on Existing Facilities

Upon application for water service by the Customer, the Customer shall be given a maximum of 90 calendar days from the date of application to have a cross connection control assembly or assemblies installed.

D. Retrofitting Facilities of Existing Customers

All existing Customers, unless otherwise exempted by this Policy, shall install the appropriate assembly or device within 180 calendar days of being notified by LCU. The Customer shall be notified as stated in Section 12.5C below.

Any existing assembly or device that has been correctly installed, regularly tested, and continues to function properly will be allowed to continue in service unless

the degree of hazard is such as to supersede its effectiveness or results in an unreasonable risk to public health, as determined by LCU. In such a case, the customer shall replace or upgrade the assembly or device to the current standards of LCU.

E. Rebate Program for Existing Customers

Upon completion of the installation and successful testing of an approved new, not replacement, cross connection control device in a accordance with this Policy on an existing water service, LCU will rebate to the customer up to approximately 1/2 of the cost, not to exceed the amount stated in the Schedule below, associated with retrofitting the water service for an assembly or device, which shall not include any costs for testing, and shall be on a first come first served basis until the current fiscal year's rebate program funds are depleted, unless otherwise approved by the Director.

MAXIMUM REBATE SCHEDULE BY DEVICE SIZE:

Device Size (Inches)	Maximum Rebate
¾	$225.00
1 or 1 ¼	$275.00
1 ½	$350.00
2	$450.00
2 ½	$2,000.00
3	$2,050.00
4	$2,500.00
6	$3,500.00
8	$6,500.00
10	$9,750.00

F. Responsibility of the Customer

The Customer has the primary responsibility of preventing contaminants and pollutants from entering his water supply system, and from entering the public water main or water source from his water supply system. The Customer shall protect his water supply system against actual or potential cross-connection, backflow, or back-siphonage, as required by this Policy, and other applicable regulations. The Customer shall assure that all assemblies and devices are tested and maintained in the working condition required. The Customer shall assure that all necessary permits are obtained for new water supply system installations and for alterations or repair to existing systems.

G. Records

Records concerning the installation and testing of an assembly or device shall be kept on-site by the Customer and accessible for review for a period of not less than 10 years. The Director shall be permitted reasonable access to these records during normal business hours, as required, for the purpose of monitoring compliance with this Policy. LCU shall maintain copies of all test reports, repair summaries, or other communications relating to this cross-connection control program for a period of not less than 10 calendar years in accordance with Rule 62-555, F.A.C.

H. Written Notice

The Director shall issue a written notice by certified mail when an approved cross connection control assembly or device is required at a Customer's water connection. Upon receipt of such written notice, the Customer shall install or have installed an approved cross connection control assembly or device at the sole expense of the Customer within the specified time from the date of Customer's receipt of the notification.

I. Violations

Failure, refusal, or inability on the part of the Customer to install an assembly or device shall constitute grounds for refusal of water or fire service or the discontinuance of service to the premises until such an assembly or device has been properly installed.

Submission by any person of any false statement or misrepresentation in any application, record, report, plan, or other document required by this Policy shall constitute a violation of the conditions for water service. Any person who has not complied with Federal, State, and Local Laws or Ordinances, and this Policy regarding cross-connection control shall be considered in violation of the conditions for water service by LCU.

J. Enforcement Policy

No water service connection to any premises shall be installed or maintained by LCU unless the water supply is, or has received official development plan approval to be, protected as required by Federal, State, and Local Laws or Ordinances, and this Policy.

Water service to a Customer shall be discontinued by the Director if a cross connection control assembly required by this Policy is not installed, tested, and maintained, or if it is found that a cross connection control assembly has been

removed, by-passed, or an unprotected cross-connection exists on the premises. Water service shall not be restored until such conditions or defects are corrected at the Customer's expense. Other methods of enforcement shall be used as appropriate, including, but not limited to, the County's Code Enforcement Procedures.

Certified Testers and Repairers shall be removed from their applicable lists for a minimum period of 1 year upon the third documented violation of this Policy and related requirements. All notifications of violation and suspension to each Tester or Repairer generated by the Director shall be by certified mail.

K. Frequency

Due to changes in models or components of equipment, methods of manufacturing, and additions to plants, buildings, etc., water use requirements undergo continual change. As a result, new cross connections may be installed and existing protection may be bypassed, removed, or otherwise ineffective; therefore, an annual or biennial detailed inspection of all water usage is required. As a minimum, all assemblies and devices shall be tested by and at the expense of the Customer on an annual basis unless circumstances require a more frequent testing schedule

L. Costs

Any costs related to the disconnection or re-connection of water service, installation, maintenance, and/or testing of a device, other than that provided for in the rebate program, shall be the responsibility of Customer.

M. Auxiliary Water Supply

The public water system shall be protected against backflow and back-siphonage by the installation of an approved cross connection control assembly if an auxiliary water supply is found on the Customer's premises that may or may not be safe in bacteriological or chemical quality.

N. Industrial Fluids

If any industrial fluids or any other objectionable substances are handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected against backflow and back-siphonage. This protection shall include the installation of a cross connection control assembly in the service line. The type of cross connection control assembly installed shall be appropriate for the potential degree of hazard.

O. Internal Cross-Connections

If an internal cross-connection(s), undefined plumbing arrangement(s) exists, or if entry to all or portions of the premises is not readily accessible for inspection purposes, the public water supply system shall be protected against backflow and back-siphonage by the installation of a master meter assembly composed of an appropriate potable water meter and a cross connection control device at the point where the service line enters the subject premises.

The Director shall have the authority to require cross connection control devices in order to separate potential internal cross connections sources from any internal potable water supply source that the general public may use.

P. Reclaimed Water

Any property that is served by LCU's potable water system and also utilizes reclaimed water shall utilize a Cross Connection Control Device at the Customer's water service connection in accordance with this Policy.

All premises utilizing reclaimed water shall be required to provide LCU approved public notice signs at all entrances identifying the area as a reclaimed water use area. Non-irrigation users of reclaimed water shall provide similar notification signage at the point of reclaimed water use. All signage shall comply with Section 9 of this Manual.

12.6 DEGREE OF HAZARD AND TYPE OF PROTECTION

A. Degree of Hazard

The type of cross connection control assembly required shall depend upon the degree of hazard. The use of a detector meter as part of the assembly shall be required for all cross connection control assemblies of 2½ inches and above in size.

1. Non-Potable Water Supply

When an auxiliary water supply is present, the public water system shall be protected by an approved air-gap separation device or an approved reduced pressure principle assembly.

2. Objectionable, but Not Hazardous

When water or a substance(s) is present that would be objectionable if

introduced into the potable water system but not hazardous to public health, the public water system shall be protected by an approved double check valve assembly.

3. Actual or Potential Hazard

Any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the potable water system, the potable water system shall be protected by an approved air-gap separation device or an approved reduced pressure principle assembly.

B. Level of Protection

All controlled and uncontrolled cross-connections, either actual or potential, to the potable water system shall be protected by an approved air-gap separation or an approved cross connection control assembly. In the event of a conflict regarding the level of protection needed, the most protective assembly or device shall be utilized.

"DCDA" indicates an approved double check detector assembly. "RPDA" indicates an approved reduced pressure detector assembly. If the assembly is two (2) inches or smaller, a non-detector type assembly may be used. NOTE: As approved by the Director, a physical air-gap separation may take the place of a device.

Type of Facility	Minimum Type of Protection
Aircraft and Missile Storage/ Manufacturing Facility	RPDA
Automotive Repair or Manufacturing Facility	RPDA
Automotive Parts Stores (No Onsite Repairs)	DCDA
Automotive, Truck, and Boat Sales Businesses	RPDA
Auxiliary Water Systems	RPDA
Bakeries	RPDA
Barber Shops, Beauty Salons, Health Clubs, and Health Spas	RPDA
Beverage Bottling Facilities	RPDA
Breweries and Distilleries	RPDA
Canneries	RPDA
Car Wash Facilities	RPDA
Chemical Processing Storage or Manufacturing Facilities	RPDA
Chemical or Biological Testing Labs	RPDA
Chemically Contaminated Water Systems	RPDA

Cold Storage Facilities	DCDA
Commercial Rental Units(where use may vary w/ tenant)	RPDA
Convenient Stores	RPDA
Dairies	RPDA
Day Care Facilities (Children and Adult)	RPDA
Dental Offices and Laboratories	RPDA
Department Stores (No repairs or chemical storage)	DCDA
Department Stores	
(With repair facilities or chemical storage)	RPDA
Dry Cleaning and Laundry Facilities	RPDA
Electrical Transmission or Generating Facilities	RPDA
Fertilizer Storage and Manufacturing Facilities	RPDA
Film Processing Facilities	RPDA
Fire Protection Systems (No Additives)	DCDA
Fire Protection Systems (With Additives)	RPDA
Food Processing Facilities	RPDA
Government Facilities	
A.) Contamination Hazard	RPDA
B.) Pollution Hazard	DCDA
Hardware or Lumber Supply Stores	RPDA
Hospitals	RPDA
Hotels and Motels (Single Story Only)	DCDA
Hotels and Motels (Multi-Story)	RPDA
Ice Manufacturing Facilities	RPDA
Irrigation Systems	RPDA
Laboratories	RPDA
Laundries and Dye Works	RPDA
Machine Tool Manufacturing Facilities	RPDA
Manufacturing Facilities(non-toxic substances on-site)	DCDA
Manufacturing Facilities (toxic substances on-site)	RPDA
Marinas and Boat Docks	RPDA
Master Metered Premises	RPDA
Medical Facilities	RPDA
Medical Clinics	RPDA
Metal Manufacturing, Cleaning, and Fabricating Facilities	RPDA
Morgues or Mortuaries	RPDA
Motion Pictures Studios	RPDA
Multi-Family Structures	
with 3 Units or More on One Meter	RPDA
Multiple Services that are Interconnected	RPDA
Multi Story Buildings (Multi-Family or Commercial)	RPDA
Nursing Homes and Rehabilitation Facilities	RPDA
Office Buildings (Single Story Only)	DCDA
Office Buildings (Multi-Story)	RPDA

Office Units (Single Story Only)	DCDA
Oil and Gas Production or Storage Facilities	RPDA
Packing Houses or Rendering Facilities	RPDA
Paper and Paper Products Facilities	RPDA
Pest Exterminating Businesses	RPDA
Pharmaceutical of Cosmetic Facilities	RPDA
Photo Processing Facilities	RPDA
Photograph Studios	RPDA
Plastic Injection and Molding Facilities	RPDA
Plating Facilities	RPDA
Ponds or Similar Appurtenances	RPDA
Power Plants	RPDA
Premises where Inspections are Restricted	RPDA
Premises with Boilers	RPDA
Premises having a Water Storage Tank or Reservoir	RPDA
Reclaim Water Usage at Single Family Resid. Premises	DCDA
Reclaim Water Usage at all other Premises	RPDA
Restaurants and other Food Preparation Establishments	RPDA
Restricted, Classified, or Closed Facilities	RPDA
Retail Businesses (Single Story Only)	DCDA
Retail Businesses (Multi-Story)	RPDA
Rubber Processing Plants, Natural or Synthetic	RPDA
Sand and Gravel Processing Facilities	RPDA
Schools and Colleges	RPDA
Sewage and Stormwater Collection and Pumping Facilities	RPDA
Solar Heating Systems	RPDA
Strip Malls and Centers	RPDA
Super Markets and Grocery Stores	RPDA
Swimming Pools and Club Houses	RPDA
Veterinary Establishments	RPDA
Warehouse and Storage Facilities	RPDA
Waterfront Facilities and Industries	RPDA

C. Fire Protection Systems

All fire protection system service lines shall have an approved double check detector assembly installed on the premises prior to the connection point with the potable water system. Mains specifically for private fire hydrants shall have an approved double check detector assembly installed on the premises prior to the connection point with LCU's potable water system. A fire protection system, which incorporates chemical additives, shall have an approved reduced pressure detector assembly installed on the premises prior to the connection point with the potable water system.

D. Assessment of Hazard and Protection for Internal Protection

NOTE: H = Health Hazard, NH = Non-Health Hazard, AG = air-gap, AVB = atmospheric vacuum breaker, DCVA = double check valve assembly, PVBA = pressure vacuum breaker, and RPPA = reduced pressure principle assembly.

Description of Cross Connection	Assessment of Hazard	Recommended (+) Assembly @ Fixture
Aspirator	H	AVB or PVBA
Bedpan Washers	H	AVB or PVBA
Autoclaves	H	RPPA
Specimen Tanks	H	AVB or PVBA
Sterilizers	H	RPPA
Cuspidors	H	AVB or PVBA
Lab Bench Equipment	H	AVB or PVBA
Autopsy and Mortuary Equip.	H	AVB or PVBA
Sewage Pumps	H	AG
Sewage Ejectors	H	AG
Fire-fighting Systems w/ Toxic Liquid Foam Concentrates	H	RPPA
Connection to Sewer Pipes	H	AG
Connection to Plating Tanks	H	RPPA
Connection to Salt Water Cooling Systems	H	RPPA
Tank Vats or other Vessels Containing Toxic Substance	H	RPPA
Dye Vats or Machines	H	RPPA
Cooling Towers w/ Chemical Additives	H	RPPA
Trap Primers	H	AG
Steam Generators	NH*	RPPA
Heating Equipment		
Commercial	NH*	RPPA
Domestic	NH*	DCVA
Irrigation Systems	H*	RPPA
Irrigation Systems w/ Chemical Additives or Agents	H*	RPPA
Swimming Pools		
Public	NH*	RPPA or AG
Private	NH*	PVBA or AG
Vending Machines	NH*	RPPA or PVBA

Ornamental Fountains	NH*	DCVA, AVB, or PVBA
Degreasing Equipment	NH*	DCVA
Lab Bench Equipment	NH*	AVB or PVBA
Hose Bibs	NH*	AVB
Trap Primers	NH*	AVB
Flexible Shower Heads	NH*	AVB
Steam Tables	NH*	AVB
Washing Equipment	NH*	AVB
Shampoo Basins	NH*	AVB
Kitchen Equipment	NH*	PVBA
Aspirators	NH*	AVB
Domestic Space-Heating Boiler	NH*	RPPA

(+) AVB's and PVBA's may be used to isolate health hazards under certain conditions, that is, backsiphonage situations. Additional area or premises isolation will be required.

(*) Where a greater hazard exists (due to toxicity or other potential health impact) additional area protection with RPPA's will be required.

12.7 PREMISES WITH RESTRICTED ACCESS

Any premises where security requirements or other prohibitions or restrictions exist and it is impossible or impractical to make a complete in-plant cross-connection survey, the potable water system shall be protected against backflow or back-siphonage by the installation of an approved cross connection control assembly. Maximum protection will be required for restrictive premises. An approved air-gap separation or an approved reduced pressure principle cross connection control assembly shall be installed in each service to these premises.

12.8 APPROVAL, TESTING, AND REPAIRS

A. Approved Assemblies

A List of Approved Cross Connection Control Devices shall be maintained by LCU and provided upon request to any interested parties. Assemblies and devices that are considered not to be easily maintained and repairable in the opinion of LCU shall not be considered for approval.

An approved cross connection control assembly or device shall be both manufactured in full conformance with the standards established by the AWWA entitled: AWWA C505-69 "Standards for Reduced Pressure Principle and

Double Check Valve Assemblies", or later adopted version and conform with the laboratory and field performance specifications of the FCCCHR. All assemblies and devices must comply with both of the above standards, not one or the other.

All approved cross connection control assemblies shall also be in compliance with the standards set forth by the following agencies:

FDEP - Rule 62-555.360 and 62-555.335 F.A.C.

ASSE

State Standard Plumbing Code

B. Testing

It shall be the duty of the Customer at any premise where cross connection control assemblies are installed to have certified inspections and operational tests made at least once per year. Customers will be notified by mail approximately 30 calendar days in advance of the required testing due date. In those instances where the Director deems the hazard to be exceptional, additional certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the Customer and shall be performed by a Certified Tester, pre-approved by the Director, using certified test gauges. A List of Certified Testers and Repairers shall be maintained by LCU and made available to the general public. In addition to the submittal of proof of certification in the appropriate area of specialization from a LCU approved agency located within the State, all Certified Testers and Repairers shall attend an Orientation Class conducted by LCU prior to having their names placed on the above mentioned List and conducting business as a Certified Tester or Repairer within LCU's service area.

LCU reserves the right as authorized by separate resolution or ordinance as approved by the Board to establish at any time an in-house cross connection control device testing program utilizing either its employees or contracted testing services to test all devices of all Customers on a cost recovery basis.

Before each field test the Certified Tester shall take the following steps:

1. Notify the Customer that the water service will need to be shut-off during the test. If a fire protection system will be affected, the Director and the Fire Chief of the Local Fire Station shall also be notified. Testing shall be

coordinated with the Customer.

2. Identify that the proper assembly is being tested by checking the identification tag and meter number.

3. Inspect the assembly for minimum clearances and properly located shut off valves and test cocks.

4. Observe the assembly and surroundings for signs of leakage, vandalism, or alterations.

After each field test the Certified Tester shall supply the owner and the Director with a copy of the County approved Test and Maintenance Report within 7 calendar days, or a retest will be required.

1. Test Requirements for RPPA's and RPDA's

   Test 1. The operation of the pressure differential relief valve shall maintain a zone between the two check valves at least 2 psi less than the supply pressure.

   Test 2. The number 2 shut-off valve shall close fully and be leak tight against backpressure and back siphonage.

   Test 3. The number 2 check valve shall maintain a static pressure drop across the check valve of at least 1 psi in the direction of flow. The check valve shall permit no leakage in a direction reverse to the normal flow.

   Test 4. The number 1 check valve shall maintain a static pressure drop across the check valve of 3 psi or greater than the recorded opening point of the relief valve. The check valve shall permit no leakage in a direction reverse to the normal flow.

2. Test Requirements for DCVA's and DCDA's

   Test 1. The number 1 and number 2 shut off valves shall close fully and be leak tight.

   Test 2. The number 1 check valve shall maintain a static pressure drop across the check valve of at least 1 psi in the direction of flow. The check valve shall permit no leakage in a direction reverse to the normal flow.

Test 3. The number 2 check valve shall maintain a static pressure drop across the check valve of at least 1 psi in the direction of flow. The check valve shall permit no leakage in a direction reverse to the normal flow.

Testing double check valve assemblies with limited access installations may require the down stream reference point being raised with a sight tube to an elevation level with the test gauge.

3. Test Requirements for PVBA's

Test 1. The number 1 shut-off valve shall close fully and be leak tight.

Test 2. The air inlet valve shall open when the pressure in the body is no less than 1 psi above atmospheric pressure. The air inlet valve shall be fully open when the water drains from the body.

Test 3. The check valve shall maintain a static pressure drop across the check valve of at least 1 psi in the direction of flow.

C. Repairs

It shall be the duty of the Customer to conform to scheduled testing. If deficiencies are noted during the test, such assemblies shall be repaired, overhauled, or replaced at the expense of the Customer by a Certified Cross Connection Control Assembly Repairer pre-approved by the Director. If an existing assembly needs to be repaired or overhauled, only original manufacturer parts shall be used.

If an existing assembly needs to be taken out of line for repairs, the assembly and installation shall meet all current policies, standards, and specifications as set forth in this Policy, before it is put back into service.

If an existing assembly or device needs to be replaced, the Customer shall contact the Director before any work is done. At this time the assembly or device with its associated piping, valves, and fittings shall be brought up to current standards and specifications. The Tester and Repairer shall furnish records of such tests, repairs, and overhauls to the Director and Customer. Upon completion of any repair, over haul, or replacement of an assembly or device, an operational test shall be made before the system is put back into service.

12.9 INSTALLATION

All cross connection control assemblies and devices shall be installed in strict

accordance with the manufacturer's installation instructions and the following guidelines. All cross connection control assemblies and devices shall be installed by the Customer or a plumbing contractor authorized to do business in the County. All required permits shall be obtained prior to the start of any installation. The installation of assemblies and devices over 2½ inches in diameter shall require a pre-construction conference with LCU. The installation of all assemblies and devices shall comply with Section 9 of this Manual, which depicts the installation of specific cross connection control assemblies. Due to the inherit water pressure loss across an Assembly, the maximum design water pressure for all proposed developments requiring the installation of a cross connection control device shall be a residual pressure of 30 p.s.i. on the Customer's side of the Assembly. In addition, all installations shall conform to the following minimum requirements:

A. Location

The Director shall designate the location of all cross connection control assemblies. Though the assembly shall typically be within 1 foot of the Customer's side of the water meter, or as otherwise approved by the Director, assemblies shall always be located on the premise of the Customer. When the location of an assembly requires that it be placed inside of a building or similar structure, an aluminum sign as detailed in Section 9 of this Manual and measuring 12 inches high by 18 inches long, shall be bolted to the wall a minimum of 24 inches above the point where the potable water service or fire line enters the building. The sign shall have a white background with black lettering stating "Cross Connection Control Device Located Inside". All assemblies that are subject to potential contact with vehicular traffic shall be protected by the installation of bollards constructed and installed in accordance with this Manual.

B. Support

All assemblies and devices shall be adequately supported to prevent the assembly from sagging.

C. Flushing

Pipelines shall be thoroughly flushed to remove foreign material and debris before installing the assembly.

D. Reduced Pressure Principle Assembly

The RPPA (or RPDA) shall be installed in a horizontal position unless otherwise recommended by this Policy or approved by the Director. The Assembly shall not

be installed in a pit. If installed in an enclosure, the enclosure shall be provided with an adequate gravity drain to a positive outfall and an air gap between the relief valve port on the Assembly and the positive outfall drain or the maximum flood level in the enclosure, whichever is highest. If the Assembly is installed inside a building, an adequate drain shall be provided and there shall be an air gap between the relief valve port on the Assembly and the drain or the maximum flood level in the building, whichever is highest. To facilitate testing and maintenance, the bottom of the Assembly, 2 inches and smaller in diameter, shall be located a minimum of 12 inches and a maximum of 18 inches above the ground or floor. Assemblies measuring 2½ inches and larger in diameter shall not be less than 18 inches or more than 36 inches above the ground or floor. The side of the Assembly with the test cocks shall be located a minimum of 24 inches from the nearest fixed wall or obstruction. All other sides of the Assembly shall be located a minimum of 12 inches from the nearest fixed wall or obstruction.

E. Double Check Valve Assembly

The DCVA (or DCDA) shall be installed in a horizontal position unless otherwise recommended by this Policy or approved by the Director. If the Assembly is installed in an enclosure or building, adequate drainage shall be provided to maintain a dry location. If the Assembly is installed in a location susceptible to flooding, the Assembly shall be of the top entry type and the test cocks on the Assembly shall be plugged. To facilitate testing and maintenance, the bottom of the Assembly, 2 inches and smaller in diameter, shall be located a minimum of 12 inches and a maximum of 18 inches above the ground or floor. Assemblies measuring 2½ inches and larger in diameter shall not be less than 18 inches or more than 36 inches above the ground or floor. The side of the Assembly with the test cocks shall be located a minimum of 24 inches from the nearest fixed wall or obstruction. All other sides of the Assembly shall be located a minimum of 12 inches from the nearest fixed wall or obstruction.

F. Pressure Vacuum Breaker Assembly (Internal Use Only)

The PVBA shall be installed in a vertical position unless otherwise recommended by this Policy or approved by the Director. The critical level or bottom of the Assembly shall be installed at least 12 inches above all downstream piping and water outlets. If the Assembly is installed in an enclosure or building, adequate drainage shall be provided. To facilitate testing and maintenance, all sides of the Assembly shall be located a minimum of 12 inches from the nearest fixed wall or obstruction.

G. Atmospheric Vacuum Breaker Device (Internal Use Only)

The AVB Device shall be installed in a vertical position unless otherwise

recommended by this Policy or approved by the Director. The critical level or bottom of the Device shall be installed at least 12 inches above all downstream piping and water outlets. There shall be no downstream valves or shutoffs and shall not be installed where it will be in continuous operation for more than 12 hours. If the Device is installed in an enclosure or building, adequate drainage shall be provided. To facilitate testing and maintenance, all sides of the Device shall be located a minimum of 12 inches from the nearest fixed wall or obstruction.

H. Concrete Pads

Concrete pads shall be poured under all cross connection control assemblies and devices greater than 2 inches that are installed outside. The width of the pad shall be a minimum of 24 inches, or shall extend at least 12 inches beyond the widest point on all sides of the assembly or device, whichever is greater. The length of the pad shall be 12 inches longer on both ends than the length of the entire assembly, which shall include the point where each pipe enters the ground. Adequate reinforcing using 6 inch by 6 inch 10 gauge wire mesh and/or No. 5 steel reinforcement bars shall be used and all piping passing through the pad shall be sleeved. The minimum thickness the pad shall be 4 inches and the minimum strength of the concrete shall be 3000 psi.

I. Painting and Color Coding

All cross connection control devices, assemblies, and associated piping, valves, and fittings shall be painted and color-coded to protect the devices and for identification. Meters shall not be painted.

Potable Water Systems	Blue
Fire Protection Systems	Red
Reclaimed Water Systems	Purple
Wastewater Systems	Green

If approved by the Director, the color Black may be substituted for the color Blue on a case by case basis for esthetic purposes.

All exterior paint used shall be long lasting and ultra-violet radiation stabilized to prevent fading. Each assembly and device shall be repainted during its annual test as a minimum.

J. Pipe and Fittings

All piping and fittings 2 inches and smaller in diameter shall be sweated copper or threaded brass from the point where the bend fitting leaves the Customer's

service line underground on the upstream side of the assembly to the point where the bend fitting meets the Customer's service line underground on the downstream side of the assembly. Dielectric unions shall be used on all installations.

All piping and fittings 2½ inches and larger in diameter shall be flanged ductile iron from the point where the bend fitting leaves the Customer's service line underground on the upstream side of the assembly to the point where the bend fitting meets the Customer's service line underground on the downstream side of the assembly. Restraining of joints shall be accomplished as appropriate.

K. Existing Systems

Prior to the installation of a new or upgraded cross connection control assembly or device on an existing fire protection or plumbing system, the Director shall be notified by the Customer.

1. Fire Systems

The Fire Chief of the Local Fire Station shall be notified and the hydraulics of existing fire protection systems shall be checked by a registered professional engineer or certified fire protection system contractor before the installation of a new or upgraded cross connection control assembly is installed.

2. Plumbing

The existing plumbing system shall be inspected, and repaired as necessary, to insure that all thermal expansion devices and/or pressure relief valves on all water heaters and other equipment are functioning properly, or installed per the State Standard Plumbing Code, prior to and immediately after the completion of the assembly's installation.

3. Potential Pressure Loss

As cross connection control assemblies or devices may result in a water pressure reduction of approximately 7 to 14 psi, water pressures at peak usage times shall be observed by the Customer prior to and after the installation. If the resulting pressures are not acceptable to the Customer for whatever reason, then the Customer may install pressure booster pumps at the Customer's expense.

12.1 CROSS CONNECTION CONTROL AND RECLAIMED WATER

A. Design Requirements

All reclaimed water systems shall be designed and constructed in accordance with the F.A.C. LCU's criteria for the construction or water and sewer systems shall, as a minimum, include those requirements specified in the F.A.C. If the criteria is found to be in conflict or less restrictive than the provisions of the F.A.C., then the provisions of the F.A.C. shall prevail and shall govern the design and construction of reclaimed water systems owned and operated by LCU. More specifically, these requirements shall include, as a minimum, the following items:

1. Cross-Connection Control

   Cross-connection of reclaimed water systems with any other water supply source or system is specifically prohibited.

   An approved cross connection control device shall be installed on any potable water line serving property also served by reclaimed water.

2. Setback Requirements

   Plans for subdivisions and commercial sites that include provisions for reclaimed water service shall include a survey of all surrounding property for the purpose of identifying the existence of potable water wells within 200 feet of the boundary of any potential reclaimed water wetted surface. Reclaimed water application systems will not be considered or permitted within 75 feet of an existing or proposed FDEP and/or FDOH permitted potable water supply well.

   A minimum horizontal pipe separation of 5 feet (center to center) or 3 feet (outside to outside) shall be maintained between reclaimed water mains and potable water or sewage mains.

   Minimum vertical separations between reclaimed water lines, potable water lines and sewage lines shall be maintained in accordance with the F. A. C.

   Reclaimed water irrigation systems located within 100 feet of public eating, drinking, or bathing facilities shall utilize low trajectory spray heads, or methods approved by LCU to reduce aerosol drift.

   Reclaimed water irrigation systems shall be constructed and operated so as to minimize over-spray onto impervious surfaces, such as sidewalks, roadways, etc.

3. Signage and Identification

All sites utilizing reclaimed water shall be required to provide County approved public notice signs at all entrances identifying the area as a reclaimed water use area. Non-irrigation users of reclaimed water shall provide similar notification signage at the point of reclaimed water use. All signage shall comply with Section 9 of this Manual.

All reclaimed water transmission lines shall be color-coded and/or labeled to specifically identify said piping as reclaimed water lines.

All new subdivisions and site plans shall specify the use of purple colored pipe as the standard material for reclaimed water service lines or other materials approved by LCU. All reclaimed water service lines shall include a locking curb stop and tag/label identifying the use of reclaimed water.

4. Prohibited Uses

Reclaimed water shall not enter any residential dwelling for any purpose.

Reclaimed water shall not be designated as a fire protection source.
All reclaimed water irrigation systems shall be permanent and installed in the ground.

There shall not be any above ground hose bib connections to the reclaimed water system. All hose bib connections must be located in below grade, locked vaults, and clearly labeled as being non-potable.

Reclaimed water cannot be applied to the ground within 75 feet of potable water well.

New potable water well construction is prohibited within 75 feet of reclaimed water irrigation area.

Reclaimed water shall not be used to fill swimming pools, hot, tubs, wading pools, spas, or similar appliances, tanker trucks used for transporting products intended for human consumption are prohibited from transporting reclaimed water.

Use of reclaimed water for any purpose other than those allowed by the F.A.C.

Failure to comply with the regulations governing the use of reclaimed water

shall be cause for the discontinuation of reclaimed water service and any other penalties as appropriate.

5. Other Uses

Reclaimed water to be used for purpose other than urban landscape irrigation requires specific authorization by the Director.

B. Installation Requirements

Reclaimed water mains shall be DR18/C-900 PVC. The pipe shall be purple in color or identified by the appropriate identification tape properly secured to the pipe. All valve boxes for reclaimed water shall have a lid size smaller than the standard potable water valve box lid. These lids shall have the words "Reuse" or "Reclaimed" in raised letter on outside top and painted purple.

All connections to the reclaimed water system for single family, multi-family, and general commercial/retail properties shall be below ground, through the standard "reclaimed water meter box". The meter box shall be appropriately colored and labeled as approved by the Director.

All connections to the reclaimed water system shall have an isolation valve labeled with stainless steel, brass or plastic tag stating "Reclaimed Water, DO NOT DRINK".

C. Activation

All applications for reclaimed water service must receive a site inspection by the Director prior to activation.

All sites receiving reclaimed water must have an approved cross connection control assemblies on the incoming potable water supply line as referenced in this Policy. No reclaimed water service shall be activated without all approved cross connection control assemblies being properly installed and tested.

All reclaimed water connections will be tested by the Director to verify the absence of a cross-connection. The Customer shall bear all costs associated with testing procedures.

Upon activation of the reclaimed water system, the Director shall request permission to test the separation of the potable and reclaimed water systems. Said test shall include the "turn-off" of the potable supply valve and the opening of hose bibs and faucets. Any noted flow of water from any such faucet shall result

in the immediate disconnection of the reclaimed water system. The reclaimed water system shall not be reactivated without demonstration that the possible cross-connection has been eliminated.

Approval for activation shall be given only after all inspection items have been completed and approved in writing by the Director.