Lee County Utilities

CROSS-CONNECTION CONTROL POLICY

REVISED 04/2025

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SECTION 1.0 GENERAL POLICY

1.1 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 Design Manual (Manual), serves to ensure that, the safety of the potable water system of the Lee County Utilities (LCU) is maintained.

LCU:

a. Requires the Developer and Customer to review this Policy before designing a project or installing a cross-connection control assembly.

b. Defines an assembly consists of a number one inlet valve with a test port, the backflow device and outlet valve.

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

d. Will ensure that the standards and specifications as set forth in this policy will be uniformly enforced.

e. Believes the requirements of this policy meets the FDEP policies.

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

1.2 GOALS

1.2.1 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.).

1.2.2 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.

1.2.3. 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.).

1.3 AUTHORITY

The purpose of this Policy is to implement the provisions of Section 62-555.360 of the Florida Administrative Code, promulgated under authority of Part VI of Chapter 403, Florida Statutes by the Department of Environmental Protection, which requires public water systems to establish a cross-connection control program to detect and prevent cross-connections that create or may create an imminent and substantial danger to public health. In addition to internal isolation required by the Florida Building Code, water customers shall provide approved backflow preventers next to the service connection for the containment of their premises.

Rule 62-550.200, 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-connections, as defined in Rule 62-550.200, F.A.C., are prohibited unless appropriate backflow protection is provided to prevent backflow through the cross-connection into the public water system. This does not prohibit a public water system from being interconnected to another public water system of the same type without backflow protection (i.e., a community water system [CWS] may be interconnected to another CWS without backflow protection, a non-transient non-community water system [NTNCWS] may be interconnected to another NTNCWS without backflow protection, and a transient non-community water system [TWS] may be interconnected to another TWS without backflow protection)."

Rule 62-555.360(2), F.A.C. states, "Each community water system (CWS) shall establish and implement a cross-connection control program utilizing backflow protection at or for service connections from the CWS in order to protect the CWS from contamination caused by cross-connections on customers' premises."

The water purveyor is given the authority and responsibility to discontinue water 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.].

1.3.1 Accepted Practices

The program shall utilize the accepted practices of the American Water Works Association guidelines as set forth in AWWA Policy M 14 3rd Edition, entitled "Cross-Connection Control" and Rule 62-555.360 F.A.C. or latest edition.

1.3.2 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.

SECTION 2.0 DEFINITIONS

2.1 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:

a. Words used in the singular number include the plural and words used in the plural number include the singular.
b. Words used in the present tense include the future tense.
c. The word "constructed" includes the word "erected," "built," "installed," "rebuilt", and "repaired".
d. The word "structure" includes the word "building".
e. The word "include" is a word of enlargement and not limitation.
f. The word "shall" be mandatory, and the word "may" be permissive.

2.2 ABBREVIATIONS

ASSE	American Society of Sanitary Engineers
AWWA	American Water Works Association
CCC	Cross-Connection Control
CWS	Community Water System
EPA	United States Environmental Protection Agency
F.A.C.	Florida Administrative Code
FCCCHR	Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California
FDEP	Florida Department of Environmental Protection
FDOH	Florida Department of Health
LCU	Lee County Utilities
psi	Pounds per Square Inch (gauge)

2.3 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.

Approved Device 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.

Auxiliary Water System means a pressurized system of piping and appurtenances using auxiliary water, which is water other than the potable water being supplied by the CWS and includes water from any natural source such as a well, pond, lake, spring, stream, river, etc. includes reclaimed water, and includes other used water or industrial fluids described in AWWA Manual M14 as incorporated in paragraph 62-555.360(1)(a), F.A.C., and subsection 62-555.360(2), F.A.C.; however, "auxiliary water system" specifically excludes any water recirculation or treatment system for a swimming pool, hot tub, or spa. (Note that reclaimed water is a specific type of auxiliary water, and a reclaimed water system is a specific type of auxiliary water system.)

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 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-Connection Control shall a program to eliminate cross-connections or to prevent them from causing a public health threat.

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. A Cross-Connection Control Assembly shall mean an assembly 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. The types approved for use by LCU's Customers for non-internal usage are:

> **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.
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> **Double Check Valve Assembly (DC)** 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.

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.

Dual check (DuC) shall mean a device containing two internally spring-loaded, independently acting check valves, excluding shut-off valves and test cocks, and cannot be tested in-line.

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. An RP must be upstream from the PVB on the main water source to the dwelling.

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.

Reduced Pressure Principle Assembly (RP or 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.

Certified Cross-Connection Control Assembly Tester (also known as a Certified Backflow Prevention Assembly Tester) shall mean a person who can provide documentation proving competency in testing cross-connection control assemblies to the satisfaction of LCU Management. 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 LCU Management and FDEP.

Certified Test Gauges shall be calibrated and certified annually, proof of which shall be required, to FCCCHR Standards by a testing lab or manufacture of the gauges.

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 0p.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.

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.

Customer shall mean any person, firm, corporation, or government entity, using or receiving water and/or wastewater service from Lee County Utilities potable water and/or wastewater system(s).

Developer shall mean any individual, firm, association, syndicate, co-partnership, corporation, trust, or any other legal entity commencing development that includes design and construction of potable water, sanitary sewer, and reclaimed water infrastructure within LCU Service Area.

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.

Degree of hazard: Risk to public health and/or adverse effect on the Public Water Supply, the degree which is derived from an evaluation of a particular hazard and/or the adverse effect of that hazard upon the public water system. Hazards are divided into Categories:

> **Hazard (degree)** shall be derived from the evaluation of conditions within a system, which can be classified as either “pollution” (non-health), or a "contamination" (health) hazard.
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> **Hazard, Health (contaminant)** 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.
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> **Hazard (plumbing)** shall mean an internal cross-connection in a Customer's potable water system that may be either 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.
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> **Hazard, Non-Health (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 Florida Department of Health, Lee County Health Department or Florida Department of Environmental Protection, depending upon jurisdiction.

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 firefighting 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 an assembly or assemblies 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 Assembly that protects the public water supply.

Irrigation System shall mean 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.

Master Meter Assembly shall mean a meter and cross-connection control assembly combination that serves two or more entities. The meter shall have a reduced pressure cross-connection control assembly.

Multi-Family shall mean services where one water meter (master meter) serves two or more residential units/dwellings in a single building.

Non-Residential (Commercial, Industrial) shall mean a building or structure not occupied or capable of being occupied in whole or in part for the purpose of human habitation and includes the lands and premises appurtenant thereto.

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 adversely and unreasonably affects the aesthetic qualities of such waters for domestic use.

Reclaimed Water 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.

Residential shall mean dwellings or homes that are used for personal occupancy.

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.

Single Family shall mean an individually metered for residential unit/dwelling.

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 FDOH or FDEP. The system must be operating under a valid permit.

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.

SECTION 3.0 REQUIREMENTS

3.1 CATEGORIES FOR LEVEL OF PROTECTION

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 LCU's Cross-Connection Policy.

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

As determined by LCU, cross-connection control will be required for residential service connections when there is an auxiliary water supply, reclaimed water, irrigation system or a fire sprinkler 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.

Table 3.1 shall be used to categorize customers to determine the type of cross-connection control assembly required. 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.

TABLE 3.1 – MINIMUM BACKFLOW PROTECTION

CUSTOMER DEGREE OF HAZARD	MINIMUM CROSS-CONNECTION CONTROL ASSEMBLY REQUIRED
Non-Residential Service Connection Multi-Family Service Connection (Master Meter)	RP^2
Premises with auxiliary or reclaimed water system	A. Residential (single-family) Service Connection: DuC^1 B. Non-Residential Service Connection: RP^2
Premises with an irrigation system that is using potable water and that is connected: I. Directly to LCU's water distribution system via a dedicated irrigation service connection. II. Internally to the customer's plumbing system.	I.A. Residential (single-family) Service Connection: RP^3 I.B. Non-Residential Service Connection: RP^2 II. RP^2
Premises with a wet-pipe sprinkler, or wet standpipe, fire protection system using potable water is connected: I. Directly to LCU's water distribution system via a dedicated fire service connection. II. Internally to the customer's plumbing system.	I.A. Residential (single-family) Service Connection with no chemical additive and/or not connected to an auxiliary water system DuC^1 Residential (single-family) Service Connection with chemical additive and/or connected to an auxiliary water system: RP^2 or $RPDA^3$ I.B. Non-Residential Service Connection with no chemical additive and/or not connected to an auxiliary water system: DC^2 or $DCDA^2$; Non-Residential Service Connection with chemical additive and/or connected to an auxiliary water system: RP^2 or $RPDA^2$ II. None (If protected at the point of service by assemblies listed below) RP^2, DC^2, $DCDA^2$

Testing Frequency	
Footnote 1	Refurbished or replaced at least once every 5 to 10 years
Footnote 2	Shall be tested after installation or repair and at least annually thereafter
Footnote 3	Shall be tested after installation or repair and at least biennially thereafter

3.1.1 New Construction

During the development review process, the Development Review staff shall utilize this Policy to determine both the Developer and Customer's responsibilities concerning the installation of cross-connection control assemblies.

3.1.2 New Accounts on Existing Premises

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.

3.1.3 Retrofitting Facilities of Existing Customers

All existing Customers, unless otherwise exempted by this Policy, shall install the appropriate assembly or device within 90 calendar days of being notified by LCU.

Any existing assembly 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 to the current standards of LCU.

3.2 RESPONSIBILITY OF LEE COUNTY UTILITIES

LCU is responsible for the protection of the potable water distribution system from contamination or pollution due to the backflow of contaminants. 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.

It shall be the goal of LCU to require an approved cross-connection control assembly installation at the premises of all Customers listed in Table 3.1, unless otherwise exempted in this Policy. The Utilities Director shall require that each existing and future Customer, categorized in the Degree of Hazard Table 3.1, have an approved cross-connection control assembly installed in accordance with this Policy. The size of the assembly installed shall not be less than the size of the meter currently being used.

3.2.1 Inventory

To ensure the continued protection of the public potable water supply system, the approved cross-connection assembly shall be registered with LCU and field-tested to verify the assembly is properly functioning. The registration shall be completed using the most current version of the *Lee County Utilities Cross-Connection Control Program Backflow Prevention Assembly Field Test & Maintenance Report* Form.

LCU shall evaluate the customer's premise(s) to ensure the proper cross-connection assembly is installed for service connections for the following situations:

a. Prior to providing potable water service to a newly constructed service connection; or
b. Any alteration or improvements to an existing service connection where the current category of usage is altered or changed in a manner that could change the type of backflow protection required at that service connection; or
c. The installation of an irrigation system, non-potable irrigation system, auxiliary water supply, reclaimed water or a fire suppression system; or
d. LCU has cause to believe that an existing service connection (residential or non-residential) has an actual or potential cross-connection.

LCU staff, 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 LCU Management to discontinue water service and constitute a violation of this Policy.

3.2.2 Recordkeeping

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 62-550.720(3), F.A.C. LCU will not accept any report that was not prepared by an approved and properly certified cross-connection control assembly tester (technician) and will not accept any such report, even though rendered by an approved technician, if:

a. The report is altered, non-legible, or inaccurate.
b. The incorrect *Lee County Utilities Cross-Connection Control Program Backflow Prevention Assembly Field Test & Maintenance Report* form is used.
c. The reporting approved technician used inaccurate gauges.
d. The reporting approved technician used improper testing procedures, or.
e. Is in violation of any requirements within this policy.

3.2.3 Notices of Violation

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

3.2.4 Violations and Enforcement

Non-compliance with any of the rules and regulations set forth by Federal, State, and Local Laws or Ordinances and this Policy will be considered in violation of the conditions for water service by LCU.

Failure to install an assembly or an unprotected cross-connection exists on the premises: Whenever it is determined that a cross-connection control assembly is required, a water service **may** be denied to the premise owner if an assembly is not installed within 90 calendar days. If an assembly is not installed within those 90 calendar days, and the premise owner will receive notice and have an additional 30 days to install an assembly. A third notice of failure to install **shall** constitute grounds for refusal of water or fire service or the discontinuance of service to the premise until such an assembly has been properly installed.

Failure to test and/or maintain: Whenever a cross-connection control assembly exist, but the device has not been tested or properly maintained in accordance with section 3.3.2., water service **may** be denied. The premise owner will be notified of non-compliance and will have 30 calendar days to test or repair the assembly. If an assembly is not tested or properly maintained within 30 calendar days, a notice of failure to test or properly maintain **shall** constitute grounds for refusal of water or fire service or the discontinuance of service to the premise until such an assembly has been properly tested and maintained.

Certified Testers and Repairers will be suspended from completing any backflow repairs or backflow testing 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 LCU Management shall be by certified mail.

3.3 RESPONSIBILITY OF CUSTOMER

The Customer has the primary responsibility of preventing contaminants and pollutants from entering the public water supply system from their water supply system. The Customer shall protect their water supply system against actual or potential cross-connection, backflow, or back-siphonage, as required by this Policy, and other applicable regulations.

Installation, maintenance, and repairs, including all affiliated costs required by this policy, shall be the responsibility of the Customer.

Testing and reporting, including all affiliated costs required by this policy, shall be the responsibility of the Customer.

Any costs related to the disconnection or re-connection of water service, installation, maintenance, and/or testing of an assembly shall be the responsibility of Customer.

3.3.1 Installation

All cross-connection control assemblies shall be installed in strict accordance with the manufacturer's installation instructions and the following guidelines. All cross-connection control assemblies 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 over 2 inches in diameter shall require a pre-construction conference with LCU. The installation of all assemblies shall comply with this Policy, which depicts the installation of specific cross-connection control assemblies.

Due to the inherent water pressure loss across an assembly, the maximum design water pressure for all proposed developments requiring the installation of a cross-connection control assembly 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:

3.3.1.1 Location

LCU staff 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 LCU Management, 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 this Policy 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 Assembly 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.

3.3.1.2 Support

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

Larger assemblies shall be supported with the proper stainless steel adjustable pipe supports.

3.3.1.3 Flushing

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

3.3.1.4 Cross-Connection Control Assemblies

Reduced Pressure Principle Assemblies, Dual Checks, Double Check Valve Assemblies, and Pressure Vacuum Breaker Assemblies (Internal Use Only) shall be installed in accordance with the Lee County Utilities Design Manual.

3.3.1.5 Concrete Pads

Concrete pads shall be poured under all above ground cross-connection control assemblies and devices greater than 2 inches that are installed outside. Concrete pads shall be installed in accordance with the Lee County Utilities Design Manual.

3.3.1.6 Painting and Color Coding

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

- Potable Water Systems Blue
- Fire Protection Systems Red
- Reclaimed Water Systems Pantone 522c
- Wastewater Systems Green

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

3.3.1.7 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. Unions shall be used on all installations both sides of the assembly.

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.

3.3.1.8 Existing Systems

Prior to the installation of a new or upgraded cross-connection control assembly on an existing plumbing system, LCU Management 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 ensure 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 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.

3.3.2 Testing Requirements

It shall be the sole duty of the Customer at any premise where cross-connection control assemblies are installed to have certified inspections and operational tests testing in accordance with Table 3.1.

Customers will be notified by mail approximately 30 calendar days in advance of the required testing due date. In those instances where the LCU Management or the Utilities Director deems the hazard to be exceptional, additional certified inspections may be required at intervals that are more frequent. These inspections and tests shall be at the expense of the Customer and shall be performed by a Certified Tester, using certified test gauges. The certified Tester must submit proof of certification in the appropriate area of specialization from an authorized agency located within the State of Florida.

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

- 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 fire alarm monitoring company and local fire station shall also be notified. Testing shall be coordinated with the Customer.
- Identify that the proper assembly is being tested by checking the identification tag and meter number.
- Inspect the assembly for minimum clearances and properly located shut off valves and test cocks.
- Observe the assembly and surroundings for signs of leakage, vandalism, or alterations.

3.3.3 Reporting

After each field test the Certified Tester shall supply the owner and LCU with a copy of the County approved Test and Maintenance Report within seven (7) calendar days, or a retest will be required. Test reports are filed electronically by the certified backflow assembly tester to BSI Online. Meter numbers are required.

3.3.4 Repair and Maintenance

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. If an existing assembly needs to be repaired or overhauled, only original manufacturer parts shall be used.

If this assembly can be repaired with limited removal or disruption of backflow components, a repair of this assembly may be granted by LCU Management or the Director. This assembly must pass the adequate required testing once repairs have taken place.

Any existing assemblies currently installed that can be repaired and can continue to function properly will be allowed to stay in service, unless the degree of hazard supersedes the effectiveness or could result in a health issue.

In a case where an assembly is deemed beyond repair due to circumstances not limited to availability of repair parts, integrity issues with the assemble or continuous device failure and malfunction, the assembly must be upgraded and replaced to meet current LCU policies, standards and specifications set forth in this policy before being placed back into service.

LCU Management or the Director maintains the right to make the decision on device repairs and replacements.

If an existing assembly needs to be replaced or repaired, the Customer shall contact LCU before any work is done. At this time the assembly has been replaced 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 LCU and Customer. Upon completion of any repair, overhaul, or replacement of an assembly or device, an operational test shall be made before the system is put back into service. **All repairs or defects shall be completed within 30 days of receiving notification.**

4.1 APPENDIX A – STANDARD DETAILS

APPENDIX B – LIST OF APPROVED DEVICES LINKS

APPENDIX C – LEE COUNTY UTILITIES CCC PROGRAM BACKFLOW PREVENTION ASSEMBLY FIELD TEST & MAINTENANCE REPORT FORM

APPENDIX A

STANDARD DETAILS

(Click on each below to see a list of approved assemblies)

W-07 - 5/8" through 2" Cross Connection Control Assembly

W-08 - 3/4" to 2" Cross Connection Control Assembly

W-09 - 3" or Larger Meter and Cross Connection Control Assembly

W-10 - 3" or Larger Meter and Cross Conn Control Assy for Uninterrupted Serv.

W-11 - 2-1/2" or Larger Cross Connection Control Assembly

APPENDIX B

LIST OF APPROVED ASSEMBLIES

(Click on each below to see a list of approved assemblies)

LIST OF APPROVED ASSEMBIES

APPENDIX C

LEE COUNTY UTILITIES
CCC PROGRAM
BACKFLOW PREVENTION
ASSEMBLY FIELD TEST
& MAINTENANCE REPORT FORM

BLANK

LEE COUNTY UTILITIES
CROSS-CONNECTION CONTROL PROGRAM
BACKFLOW PREVENTION ASSEMBLY FIELD TEST MAINTENANCE REPORT

CHECK ONE:
New Installation* ☐ **Existing Unit**** ☐ **Replacement Unit*** ☐

Install Date*: _____ Installed By*: _____
*If New Install or replacement unit

TYPE OF INSTALLATION: (CHECK ONE)
Containment* ☐ Isolation ☐
*If containment, meter number is required.

TYPE OF SERVICE: (CHECK ONE)
FIRELINE ☐ POTABLE ☐ IRRIGATION ☐

TYPE OF ASSEMBLY: (CHECK ONE)
RP ☐ DC ☐ DCDA ☐

LOCATION: _____

ASSEMBLY INFORMATION
SIZE: _____
MFR.: _____
MODEL #: _____
SERIAL #: _____
METER #: _____

CUSTOMER NAME: _____ SERVICE ADDRESS: _____

BUSINESS NAME: _____

	REDUCED PRESSURE (RP)			DOUBLE CHECK (DC)		DETECTOR ASSEMBLY (DA)		
	CHECK VALVE #1	**CHECK VALVE # 2**	**RELIEF VALVE**	**CHECK VALVE #1**	**CHECK VALVE #2**	**CHECK VALVE #1**	**CHECK VALVE # 2**	**RELIEF VALVE**
INITIAL TEST	PSID_____ PASSED ☐ LEAKED ☐	PSID_____ PASSED ☐ LEAKED ☐	OPENED AT: _____ DID NOT OPEN: ☐	PSID_____ PASSED ☐ LEAKED ☐	PSID_____ PASSED ☐ LEAKED ☐	PSID_____ PASSED ☐ LEAKED ☐	PSID_____ PASSED ☐ LEAKED ☐	OPENED AT: _____ DID NOT OPEN: ☐
PARTS & REPAIRS								

All repairs must be completed within 30 days and submittal of a new test report.

Please Print
COMMENTS: _____

TESTER NAME: _____ CERTIFICATION #: _____ COMPANY: _____

TEST GAUGE MANUFACTURER: _____ GAUGE SERIAL #: _____ CALIBRATION DATE: _____

I HEREBY CERTIFY THAT THIS DATA IS ACCURATE AND REFLECTS THE ACTUAL OPERATIONS AND MAINTENANCE OF THE ABOVE ASSEMBLY.

TEST DATE: _____ TEST TIME: _____ TESTER SIGNATURE: _____

PASSED ☐ FAILED ☐

**All Test Reports, submit via BSI Online (https://app.bsionlinetracking.com/app/login/)

revised 04/25/2025