

NOTICE OF INTENT TO ADOPT REGULATIONS

WSSC to Expand Cross-Connection Control and Backflow Prevention Program

WSSC is seeking public comment on the expansion of its Cross-Connection Control and Backflow Prevention Program. WSSC is mandated by federal and state regulations to protect the drinking water from contamination due to backflow from unprotected or improperly protected cross-connections. A cross-connection is the point where the potable water system is connected to a plumbing fixture or appliance; a commercial or industrial piece of equipment; or other outlet where cross contamination is possible.

WSSC is presenting the following Cross-Connection Program Manual for public comment. The manual includes detailed guidelines and prescriptive requirements for property owners, occupants, plumbers, and WSSC staff. The proposed program Manual immediately follows this notice, to review simply continue scrolling down. A limited number of hard copies of the proposed program Manual will be available at the WSSC Headquarters permits counter.

The proposed Manual is concurrently being coordinated with interested stakeholders; including the Apartment and Office Building Association, the American Society of Professional Engineers-Metro DC Chapter, the Maryland National Capital Building Industry Association, the Washington Suburban Master Plumbers Association, the Mechanical Contractors of America - metro Washington chapter, the Air Conditioning Contractors Association, and governmental agencies; including Prince George's County Department of Environmental Resources, and Montgomery County Departments of Permitting Services and Environmental Protection; as well as the WSSC Plumbing and Fuel Gas Board.

WSSC intends to approve the Cross-Connection Program Manual following a public comment period. Written comments will be accepted until June 13, 2010 at WSSC Regulatory Services Group 11th floor, 14501 Sweitzer Lane, Laurel, MD 20707.

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DRAFT

**WASHINGTON SUBURBAN
SANITARY COMMISSION**

CROSS-CONNECTION CONTROL MANUAL

Date Approved _____

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DEFINITIONS

Air-Gap: The unobstructed vertical distance through free atmosphere between the lowest effective opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood level rim of the receptacle. These vertical, physical separations must be at least twice the effective opening of the water supply outlet, never less than 1 inch above the receiving vessel flood rim. Special conditions may require more stringent requirements.

ANSI: American National Standards Institute,

Approved: Accepted by WSSC as meeting an applicable standard, specification, requirement, or as suitable for proposed use.

ASSE: American Society of Sanitary Engineers.

Assembly: A testable backflow preventer with one or more approved body components and including approved valves.

Atmospheric vacuum breaker (AVB): The AVB consists of a float check, a check seat, and an air-inlet port. A shutoff valve immediately upstream may or may not be an integral part of the device. The AVB is designed to allow air to enter the downstream water line to prevent backsiphonage. This unit may never be subjected to a backpressure condition or have a downstream shutoff valve, or be installed where it will be in continuous operation for more than 12 hours.

Auxiliary water supply: Any water supply on or available to the premises other than WSSC's approved public potable water supply. These auxiliary waters may include water from another water purveyor's public potable water supply or any natural source(s), such as a well, lake, spring, river, stream, harbor, and so forth; or used waters, reclaimed waters, recycled waters, or industrial fluids.

These waters constitute an unacceptable water source over which WSSC does not have sanitary control.

AWWA: American Water Works Association

Backflow: The undesirable reversal of flow of a liquid, gas, or other substances in a potable water distribution piping system as a result of a cross-connection.

Backflow preventer (BFP): An assembly, device, or method that prohibits the backflow of water or other substances into potable water supply systems.

Backflow Technician: A WSSC-licensed Master Plumber, Master Plumber/Gasfitter, Journeyman Plumber or Journeyman Plumber/Gasfitter who is certified for installing, servicing and testing of backflow assemblies.

Backpressure: A pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, air/steam pressure, or any other means, which may cause backflow.

Backsiphonage: A type of backflow where the upstream pressure to a piping system is reduced to a sub atmospheric pressure.

Chief Code Official: The supervisor or higher level authority of the “Code Official.”

Civil Citation: The written summons document containing violations of code sections and a monetary penalty.

Code Official: WSSC employee(s) charged with enforcement of WSSC Plumbing and Fuel Gas Code (and therefore provisions of this Manual).

Containment: The appropriate type or method of backflow protection at the beginning of the service connection or immediately inside the building, commensurate with the degree of hazard of the consumer’s potable water system.

Contamination: Impairment of the quality of the water which creates an actual hazard to the public health and safety.

Critical Facilities: Facilities typically having multiple water services off multiple mains to ensure continuity of service, such as hospitals, schools, certain federal facilities, and other facilities deemed critical by the required use.

Cross-connection: A connection or a 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, water products, steam, water from other sources (potable or non-potable), or any matter that may change the color of or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connecting arrangement through which backflow may occur are considered to be cross-connections.

Cross-connection control: A program to eliminate, monitor, protect and prevent cross-connections from allowing backflow.

Degree of hazard: An actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the owner’s potable water system

Device: A non-testable backflow preventer.

Double check detector backflow-prevention assembly (DCDA): A specially designed backflow assembly composed of a line-size-approved double check valve assembly with a bypass containing a specific water meter and an approved double check valve assembly.

The meter shall be provided by WSSC. The meter piping shall allow the meter to be installed either horizontal or vertical. This assembly shall only be used to protect against a non-health hazard (i.e., a pollutant).

Double check valve assembly (DC or DCVA): A complete assembly consisting of two internally loaded, independently operating check valves, located between two tightly closing resilient-seated shutoff valves with four properly placed resilient-seated test cocks. This assembly shall only be used to protect against a non-health hazard (i.e., a pollutant).

Field testing: A procedure to determine the operational and functioning status of a backflow preventer.

Group R-3 occupancies: In general, 1- and 2-family detached houses and attached row-style houses. Specifically per the International Building Code (IBC): Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I-1, I-2, I-3, or I-4,, and where buildings do not contain more than two dwelling units as applicable in Section 101.2 (IBC), or adult and child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours. Adult and child care facilities that are within a single-family home are permitted to comply with the International Residential Code in accordance with Section 101.2 (IBC).

High hazard (health hazard): A cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.

Inspection: A visual examination of backflow-prevention equipment, materials, workmanship or portion thereof to verify installation and operational performance.

Internal protection: Fixture isolation and/or isolation of an area or zone. Protection at the fixture means installing an approved backflow preventer at the source of the potential hazard within a specific area.

Isolation: Assemblies or devices installed to protect against backflow at individual cross connections.

Low hazard (non-health hazard): A cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced into the potable water supply.

Pressure vacuum-breaker assembly (PVB): An assembly consisting of an independently operating, internally loaded check valve, 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 designed to be operated under pressure for prolonged periods of time to prevent backsiphonage. The pressure vacuum breaker may

not be subjected to any backpressure. This assembly may be used to protect against a non-health hazard (i.e., a pollutant) or a health hazard (i.e., a contaminant).

Reduced-pressure principle backflow-prevention assembly (RPBA): A complete assembly consisting of a mechanical, independently acting, hydraulically dependent relief valve, located between two independently operating, internally loaded check valves that are located between two tightly closing resilient-seated shutoff valves with four properly placed resilient-seated test cocks. This assembly may be used to protect against a non-health hazard (i.e., a pollutant) or a health hazard (i.e., a contaminant).

Reduced-pressure principle detector backflow-prevention assembly (RPDA): A specially designed backflow assembly composed of a line-size proved reduced-pressure principle backflow-prevention assembly with a bypass containing a specific water meter and an approved reduced-pressure principle backflow-prevention assembly. The meter shall be provided by WSSC. The meter piping shall allow the meter to be installed either horizontal or vertical. This assembly may be used to protect against a non-health hazard (i.e., a pollutant) or a health hazard (i.e., a contaminant).

Revocation: A formal written notification to a licensee, that the license has committed one or more serious code violations that warrants termination of their license for an extended period of time, generally in “years.”

Service connection: In general, a lateral service pipe that is constructed by WSSC or its designee, from a WSSC water or sewer main to a property line.

Spill-resistant pressure vacuum-breaker backsiphonage-prevention assembly (SVB): A backflow assembly containing an independently operating, internally loaded check valve and independently operating loaded air-inlet valve located on the discharge side of the check valve. The assembly is to be equipped with a properly located resilient-seated test cock, a properly located bleed/vent valve, and tightly closing resilient-seated shutoff valves attached at each end of the assembly. This assembly is designed to protect against a non-health hazard (i.e., a pollutant) or a health hazard (i.e., a contaminant) under backsiphonage condition only.

Suspension: A formal written notification to a licensee, that the licensee has committed one or more serious code violations that warrants termination of their license for a specified period of time, but less serious than that which would warrant a revocation of their license.

WSSC: The Washington Suburban Sanitary Commission.

CHAPTER 1 INTRODUCTION

SECTION 101 GENERAL

101.1 Title. These regulations may be cited as the “WSSC’s Cross-Connection Control Manual,” hereinafter referred to as “this Manual.”

101.2 Purpose. The purpose of this Manual is to provide requirements and standards regarding the Cross-Connection Control Program implemented by WSSC to protect the public water supply against actual or potential contamination through cross-connection and backflow. This Manual is designed to be used in conjunction with the IPC and the IRC to provide a complete understanding of the requirements for protecting the public and private water distribution systems.

101.3 Scope. The provisions of this Manual shall apply to all classes of work usually performed by plumbers in connection with cross-connection control. This includes the installation, alteration, repair, relocation, replacement, or maintenance of plumbing systems that use backflow preventers. Direct connections between potable water systems and other systems or equipment containing water or unknown substances shall be prohibited, except when an approved backflow prevention assembly or device is installed, tested and maintained to insure proper operation on a continuing basis.

CHAPTER 2

WSSC'S CROSS-CONNECTION CONTROL POLICY

SECTION 201

ADOPTION OF MODEL CODES

201.1 International Plumbing Code. The International Plumbing Code (hereinafter "IPC"), published by the International Code Council, Inc., was adopted and incorporated by reference into WSSC Plumbing and Fuel Gas Code, latest version, and has the same force and effect as though fully set forth in this Manual, subject to the additions, deletions or other modifications thereto set forth in Chapter 9 of this Manual.

201.2 International Residential Code. Part II-Definitions (Chapter 2), Part VII-Plumbing (Chapters 25-32) and Part IX-Referenced Standards (Chapter 43) of the International Residential Code (hereinafter "IRC"), published by the International Code Council, Inc., was adopted and incorporated by reference into WSSC Plumbing and Fuel Gas Code latest version, and have the same force and effect as though fully set forth in this Manual, subject to the additions, deletions or other modifications thereto set forth in Chapter 10 of this Manual.

201.3 Referenced Codes and Standards. Other International Code volumes referenced in the IPC, IRC, and the standards referenced therein (IPC Chapter 13, IRC-Chapter 43) shall be considered part of the requirements of this Manual to the prescribed extent of each such reference. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to minimum provisions of this Manual, the provisions of this Manual shall apply.

201.4 Exception. When enforcement of a Code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and the manufacturer's installation instructions shall apply.

SECTION 202 HAZARD CLASSIFICATION

202.1 General. For the purposes of this Manual, commercial and industrial facilities are considered to fall into three categories with respect to cross-connection hazard levels: high hazard, moderate hazard and low hazard. WSSC assigned facilities to the hazard categories based on industry type and low-pressure vulnerability.

202.2 Industry Type and Low-Pressure Vulnerability. WSSC prioritized facilities based (first) on industry type and (second) on low-pressure vulnerability, to produce an overall prioritization. WSSC established industry type using North American Industry Classification System (NAICS) codes and descriptions. WSSC established low-pressure vulnerability using its computer water model and topographic data, and using its knowledge of areas prone to pressure transients.

SECTION 203 CONTAINMENT VERSUS INTERNAL-PROTECTION

203.1 Containment Requirements

203.1.1 New Facilities. New facilities, of all hazard levels, shall have both containment assemblies and internal-protection assemblies and devices. Containment assemblies shall be installed on the outlet side of the water meter. New facilities, of all hazard levels, shall not have the option of separate service lines for fire and domestic use; building water services shall be combination fire and domestic. Fire sprinkler supply may “tee-off” in parallel to the building containment assembly and each shall be outfitted with the appropriate level of backflow prevention.

203.1.2 Existing Facilities. Containment assemblies and internal-protection assemblies and devices in facilities built before May 1, 2007 shall remain in service and shall continue to be tested annually, repaired as needed, or replaced every five years (devices) or when a satisfactory repair is unobtainable on an assembly.

203.1.3 Retrofitting. Facilities built before May 1, 2007 without containment backflow preventers shall generally not need to be retrofitted, unless WSSC determines that retrofitting is warranted. WSSC shall require a containment backflow assembly if WSSC identifies high-hazard application(s) are present. Or where a facility is contained, but the type of containment assembly is not commensurate with the degree of hazard, a property will be required to upgrade. These facilities shall be reclassified as moderate or high hazard facilities and future inspection frequency shall be adjusted accordingly.

CHAPTER 3 PROGRAM AUTHORITY AND RESPONSIBILITIES

SECTION 301 WSSC'S AUTHORITY AND RESPONSIBILITIES

301.1 Protection of the Public Water Distribution System. Under the provisions of the Safe Drinking Water Act of 1974 and the amendments in 1986 and 1996 the Federal Government has established, WSSC shall be responsible for protection of the public potable water distribution system from contamination or pollution due to backflow caused by either backpressure or backsiphonage.

301.2 Cross-Connection Control Program. WSSC shall operate a CCC Program, to include keeping of necessary records, inspecting facilities, reviewing plans and issuing violation which fulfills the requirements of Maryland's Department of the Environment cross-connection regulations.

301.3 Regulatory Services Group. WSSC is authorized by *Article 29* of the *Annotated Code of Maryland* to adopt, administer and enforce regulations for the construction and installation of plumbing. The unit within the WSSC created to carry out this function is known as the Regulatory Services Group.

301.4 Code Officials. WSSC employees charged with enforcement of WSSC Plumbing and Fuel Gas Code (and therefore of this Manual) shall be known individually and collectively as Code Officials. WSSC shall designate a person who shall be known as the Chief Code Official to have administrative authority over the activities of a Code Official.

301.5 Cross-Connection Response Plan. In the event of discovering backflow of pollution or contamination into the public water system, WSSC shall promptly take corrective action in accordance with [WSSC's Cross-Connection Response Plan](#) to confine and eliminate the pollution or contamination. WSSC shall keep detailed records of the investigation and subsequent corrective action taken for backflow incidents.

301.6 WSSC's Inspections. WSSC shall inspect commercial and industrial facilities as further defined in Chapter 4 of this Manual.

301.7 Right of Entry. Whenever it is necessary to perform an inspection to enforce the provisions of this Manual, or whenever a Code Official has reasonable cause to believe that there exists in any building or upon any premises any violations of this Manual, the Code Official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the Code Official by this Manual. If such building or premises is occupied, the Code Official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the Code Official shall first make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, or if the owner or the owner's agent cannot be located, the Code Official shall have recourse to any remedy provided by law to secure entry. When the Code Official shall have first obtained a proper inspection warrant or other remedy provided by law to secure entry, the owner, occupant, proprietor, or person having charge or control of any building or premises shall promptly permit entry by the Code Official for the purpose of inspection and examination pursuant to this Manual.

301.8 Certified Backflow Technicians List. WSSC shall keep on file a list of private plumbing contractors who are certified Backflow Technicians, and shall make the list readily available to customers.

301.9 Modifications (Waivers). When practical difficulties involved in carrying out the provisions of this Manual arise, WSSC shall have the authority to grant a modification for individual cases, provided that the Chief Code Official shall first find special individual reasons that make the strict letter of this Manual impractical, that the modification is in conformity with the purpose of this Manual, and that such modification does not compromise health, life or fire safety or cause damage to the public water distribution systems. Records of action granting modifications shall be maintained by WSSC's Regulatory Services Group.

301.9.1 Request. A modification request shall be submitted on the official Modification Request form. The form shall be signed by the owner and by the Master Plumber/Gasfitter or Engineer.

301.9.2 Indemnification. The owner or his or her legal representative shall sign the hold-harmless agreement section of the modification request form, indemnifying WSSC and/or its employees from and against all losses and liabilities that may result from the granting of the modification request.

301.9.3 Future Editions. The Code Official may consider amendments to published editions of referenced codes and standards not yet adopted by WSSC as evidence supporting an application for a modification.

SECTION 302 CUSTOMER'S RESPONSIBILITIES

302.1 Backflow Notification. The customer shall immediately notify WSSC if there is reason to believe that backflow has or may have occurred. This shall include private water system, plumbing fixture, equipment utilizing water, or any building system with the means of contaminating the public water system or building's potable water distribution system.

302.2 Testing and Maintenance of Backflow Preventers. The customer, at his/her own expense, shall purchase, install, operate, test and maintain approved backflow-preventers as directed by WSSC. The customer shall immediately correct any malfunction of a backflow preventer revealed by periodic testing or observation. Backflow assemblies shall be tested annually and non-testable devices shall be inspected annually. Non-testable devices shall be replaced or re-built every 5 years or as needed.

302.3 Certified Backflow Technician. The customer shall be responsible for hiring a certified Backflow Technician (who is employed by a registered and insured plumbing firm), to perform the installation, testing and maintenance on his/her backflow-prevention assemblies.

302.4 Elimination of Cross-Connections. The owner/customer shall be responsible for the elimination of, or protection against, cross-connections on their premises.

302.5 Record Keeping. The owner/customer shall be responsible for maintaining all necessary records on backflow-prevention assemblies and/or devices installed on their premises.

302.6 Change of Use. The customer shall immediately contact WSSC when the use of his/her property changes. WSSC shall then reassess the hazard classification of the property and determine if an inspection is warranted.

302.7 Backflow Preventers Out of Service. The customer shall notify WSSC in writing of any backflow preventers that have been taken out of service.

SECTION 303 BACKFLOW TECHNICIAN'S RESPONSIBILITIES

303.1 Violations. Backflow Technicians shall be held responsible for the violation of any part of this Manual whether the violation is committed by themselves or by their employees or agents.

303.2 Testing and Maintenance of Backflow Preventers. Backflow Technicians shall be responsible for performing accurate field tests and for repairing, overhauling or replacing backflow preventers. It shall be the Backflow Technician's responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of WSSC.

303.3 Generation of Data. Backflow Technicians shall be responsible for the accurate generation of data, a correct assessment of the workings of each assembly tested, and proper dissemination of the data to WSSC and to the customer.

303.4 Test Reports. Any work completed by a Backflow Technician to achieve satisfactory test results for a customer shall be documented on [WSSC's standardized test reports](#). *Effective July 1st 2010, all test reports must be purchased from WSSC either on-line or at the permit counter. All test reports shall be submitted to WSSC on-line and must have an assigned test report number.*

303.5 Replacement Parts. Backflow Technicians shall be responsible for ensuring that original-manufacturer replacement parts are used in the repair of or replacement of parts in a backflow-prevention assembly.

303.6 Safety Procedures. Backflow Technicians shall conduct testing upon assurance that all safety procedures have been observed and that all personnel involved have been appropriately notified.

303.7 Backflow Technician's Certification. A Backflow Technician's certification shall be kept current by completing recertification on or before the date the current certification expires. Any lapses in certification or discontinuance of certification shall be reported to WSSC.

CHAPTER 4 ADMINISTRATION

SECTION 401 TESTING NOTIFICATION FOR EXISTING FACILITIES

401.1 Testing Notification. The testing notification shall be a standardized informational letter sent annually, which outlines the requirements and a specific period of time to comply (40 days). If no response is received in a specified time period, WSSC shall send a Notice of Violation (NOV).

SECTION 402 WSSC'S INSPECTIONS OF EXISTING FACILITIES

402.1 Purpose of the Inspections. Existing backflow-prevention assemblies shall be inspected to determine if the assembly has been altered, bypassed, removed or made otherwise ineffective. During the inspection, the rest of the plumbing system shall be inspected to determine possible changes to the initial plumbing configuration and potentially unprotected parts of the system.

402.2 Inspections of High- and Moderate-Hazard Facilities. For high- and moderate-hazard facilities, WSSC shall strive to inspect existing containment assemblies and/or internal-protection assemblies and devices as often as staffing level allows. Regardless of staffing level, WSSC shall strive to inspect high-hazard facilities before inspecting moderate-hazard facilities. For high- and moderate-hazard facilities having multiple backflow preventers, WSSC shall issue advisory letters of pending inspection, followed by random inspections of up to 20-25% of the backflow preventers. WSSC shall decide whether or not to take further enforcement actions based on the results of the inspections.

402.3 Inspections of Low-Hazard Facilities. Low-hazard facilities shall only be considered for inspection on a prioritized basis:

- ✓ If there is a failure to comply with the testing notification.
- ✓ If the latest test report included a remark from the Backflow Technician that the plumbing system is not compliant with WSSC's backflow-prevention requirements.

402.4 Inspections of Residential Customers. WSSC generally will not inspect residential backflow-prevention assemblies or devices, except on a case-by-case basis, (example) residences having auxiliary water. However annual test reports for testable backflow prevention assemblies shall be submitted to the Commission.

402.5 Change of Use. The customer shall immediately contact WSSC when the use of their property changes. WSSC shall then reassess the hazard classification of the property and determine if an inspection is warranted.

SECTION 403 PLAN REVIEW AND INSPECTION OF NEW AND DESIGN-RETROFIT CONSTRUCTION

403.1 Plan Review. All plans and specifications for new and design-retrofit commercial and industrial construction shall be reviewed by WSSC to determine the degree of possible cross-connection hazard. WSSC shall decide backflow-prevention requirements in accordance with this Manual and the Plumbing Codes.

403.1.1 Exception. The Code Official shall have the authority to waive the submission of construction documents, calculations or other data if the nature of the work applied for shall be such that reviewing of construction documents shall not be necessary to determine compliance with this Manual.

403.2 Final Plans and Specifications. Final plans and specifications for cross-connection control shall be reviewed and approved by WSSC prior to construction.

403.3 Second Water Service. Hospitals require two water services and each shall be connected to separate mains and located on separate streets where possible.

403.4 Redundant Assemblies Required. Where necessary to maintain *continuous* water supply pressures and flows to critical facilities such as hospitals, nursing homes, laboratories and morgues, redundant (parallel) backflow preventers shall be provided and each shall be sized based on peak *critical* demand.

SECTION 404 ENFORCEMENT ACTIONS

404.1 Unlawful Acts. No person shall erect, construct, alter, repair, remove, demolish or utilize any plumbing or site-utility system in conflict with or in violation of any of the provisions of this Manual.

404.2 Notice of Violation. A Code Official shall serve a Notice of Violation (NOV) or order to the person responsible for the erection, installation, alteration, extension, repair, removal or demolition of work in violation of the provisions of this Manual or in violation of a directive or the approved construction documents there under, or in violation of a permit or certificate issued under the provisions of this Manual. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation within a specified timeframe as follows:

404.2.1 First NOV. The Code Official shall allow 30 days for compliance of the first NOV provided there is no immediate threat to public health or safety.

404.2.2 Second NOV. The second NOV shall give a 15-day period to comply. Also, the customer shall be notified that water service will be terminated if no response is received after the specified period of time and that the local Public Health agency will be notified.

404.2.3 Final NOV. The Code Official shall mail the final NOV 15 days after the second NOV. The final (or termination) NOV shall give the customer another 10 days to comply and shall set the date that service will be terminated.

404.3 Failure to Comply. Failure to comply with an NOV or other enforcement action shall be a further violation of this Manual. This may result in the issuance of a WSSC Civil Citation, a Stop-Work Order at the premises where the improper work occurred, termination of services, or additional enforcement measures.

404.4 Abatement of Violation. The imposition of the penalties herein prescribed shall not preclude WSSC from instituting appropriate action to prevent unlawful construction or to restrain, correct or abate a violation, or to prevent illegal occupancy of a building, structure or premises, or to stop an illegal act, conduct, business or utilization of the plumbing or site-utility systems on or about any premises.

404.5 Stop-Work Order. Upon notice from a Code Official, work that is performed contrary to the provisions of this Manual or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be posted at the jobsite; given to the owner of the property, to the owner's agent, or to the person performing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the Code Official shall not be required to give a written notice prior to stopping the work. Any person who shall continue any work in or about the structure after being served with a Stop-Work Order, except work that the person is directed to perform to remove a violation or unsafe condition, shall be subject to license action if licensed, and/or civil citation(s).

404.6 Civil Citations. Pursuant to Section 18-104.2, Article 29, Annotated Code of Maryland, a Code Official shall be authorized to issue civil citations to any person violating any provision of this Manual. A person committing any of the following violations of this Manual shall be subject to immediate delivery of a WSSC civil citation at the discretion of the Code Official, with or without first being issued an NOV:

404.6.1 Work Without a License. Performing plumbing without a valid license where such license is required by this Manual.

404.6.2 Work Without a Permit. Performing work without a valid permit where such permit is required by this Manual.

404.6.3 Health and Safety Violation. Violating any provision of this Manual where such violation presents an imminent threat to the public health, welfare, or safety or to the public water distribution systems.

404.6.4 Negligence, Incompetence or Misconduct. Committing acts constituting gross negligence, incompetence or misconduct while providing plumbing or site-utility, or while assisting in providing these services.

404.6.5 NOV Non-Compliance. Failing to comply with a NOV within the prescribed deadlines.

404.7 Denials, Reprimands, Suspensions and Revocations. If WSSC determines that a Master Plumber applicant or licensee willfully or deliberately violated any provision of this Manual, WSSC may deny a license to an applicant, reprimand a licensee, or suspend or revoke a license as detailed in [WSSC Plumbing and Fuel Gas Code](#), latest version.

404.8 Hazardous Conditions. Any installation regulated by this Manual that is unsafe, or that constitutes a fire or health hazard, unsanitary condition, or is otherwise dangerous to human life shall hereby be declared unsafe. Any use of an installation regulated by this Manual constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage or abandonment shall hereby be declared an unsafe use. Unsafe equipment shall hereby be declared a public nuisance and shall be abated by repair, rehabilitation, demolition or removal.

404.9 Authority to Condemn Equipment. Whenever a Code Official determines that any installation, or portion thereof, regulated by this Manual has become hazardous to life, health or property or has become unsanitary, the Code Official shall order in writing that such installation either be removed or restored to a safe or sanitary condition. A time limit for compliance with such order shall be specified in the written NOV. Using or maintaining such defective installations after receiving a NOV shall be prohibited. When such an installation is to be disconnected, written notice as prescribed in the "Notice of Violation" paragraph shall be given. In cases of immediate danger to life or property, the order to disconnect shall be effective immediately without such notice.

404.10 Authority to Disconnect Service Utilities. A Code Official shall have the authority to authorize disconnection of utility service to any building, structure or system regulated by this Manual to eliminate an immediate danger to life, property, environment or the public water distribution systems. Where possible, the owner and/or occupant of the building, structure or service system shall be notified of the decision to disconnect utility service prior to taking such action. If not notified prior to disconnection, the owner or occupant of the building, structure or service systems shall be notified in writing, as soon as practical thereafter.

404.11 Re-Connection after Order to Disconnect. Any connection regulated by this Manual that has been disconnected or that has been ordered to be disconnected, or the use of which has been ordered to be discontinued, shall not be re-established until a Code Official authorizes the reconnection and use of such system or equipment. When any installation is maintained in violation of this Manual, and in violation of any notice issued pursuant to the provisions of this Section, a Code Official may institute any appropriate action to prevent, restrain, correct or abate the violation.

SECTION 405 RECORD-KEEPING

405.1 Data Management. WSSC shall use an automated facilities management and work-order system (i.e., computer software) to track its customers' backflow-prevention assemblies and devices.

405.2 Inventory Record of Backflow Preventers. WSSC shall maintain an inventory record for each facility served that uses a backflow-prevention assembly(ies) and/or device(s). An inventory record for each backflow-prevention assembly and device shall include the location, type, serial number, and history of all inspections, tests, rebuilds, etc.

405.3 Backflow Incidents. WSSC shall keep detailed records of the investigation and subsequent corrective action taken for reported backflow incidents.

CHAPTER 5

SELECTION OF BACKFLOW PREVENTERS

SECTION 501

GENERAL

501.1 Approved Standards. Backflow preventers shall conform to ASSE standards as listed in this Manual, or shall be equivalent to:

- ✓ ANSI/AWWA Standards
- ✓ USC Standards
- ✓ CAN/CSA Standards

501.2 Other Standards. Backflow preventers manufactured to other standards may also be installed, provided written approval is first obtained from WSSC. *All equipment connected to the potable water supply system used to retract human or animal body fluids shall be protected by an air gap or a reduced pressure principle backflow assembly.*

501.3 Application of Backflow Preventers. Application of backflow preventers as listed in Table 5.1 shall be subject to field verification of hazards and conditions by WSSC.

Table 5.1 Application of backflow preventers

Standard Number	Backflow Preventer or Method	Type of Protection BS=back-siphonage BP=back-pressure	Degree of Hazard	Installation Dimensions and Position	Pressure Condition I=Intermittent C=Continuous	Comments	Use
ANSI A112.2.1	Air Gap	BS & BP	High	Twice effective opening—not less than 1 inch above flood level	C	See by-pass arrangements	Lavatory, Sink, or Bathtub Spouts. Pot Fillers Residential Dishwasher (ASSE 1006) and Clothes Washer (ASSE 1007) Refrigerator Ice maker (ASSE xxxx)
ASSE 1001	Pipe Applied Vacuum Breaker	BS	Low	6 inches above highest outlet Vertical position only	I		Goosenecks and appliances not subject to back pressure or continuous pressure
ASSE 1011	Hose Connection Vacuum Breaker	BS	Low	Locked on hose bib threads Minimum 6 inches above grade	I	Yard hydrant supply requires auxiliary or additional protection	Hose Bib, Wall Hydrant and Sill cock
ASSE 1012	Dual Check Valve with Atmospheric Vent	BS & BP	Low to Moderate	Any readily accessible position Drain piped to floor or by air gap over a receptor	C	Drain/vent outlet shall be between 3 & 9 o'clock *See footnote	Residential Boiler, Spas, Hot tub and Swimming Pool Supply (hard piped) Residential Water Treatment System Residential Yard Hydrant
ASSE 1013	Reduced Pressure Principle Backflow Preventer	BS & BP	High	Inside building-18 inches to 48 inches (centerline to floor) Outside building-18 inches to 24 inches (centerline to grade) Horizontal or Vertical Drain piped to air gap over a receptor Area Shall Be Suitable for Un-controlled Discharge Residential - Outdoors Only	C	- Valves per section 603 **See footnote Recommend floor drainage system capable of handling a catastrophic failure of the BFP	Chemical or Biological Systems Chilled Water / Cooling Tower Commercial Boiler / Heat Exchanger Commercial Swimming Pool, Spas, etc Food Injection Equipment Hospital Equipment Lawn Irrigation Dental / Medical Vacuum Systems Interconnection w/a Non-potable System Water and Wastewater Treatment Plants Fire Sprinkler with Chemical Additives Exhaust Hood / Degreaser Commercial Water Treatment System Commercial/Industrial Laundry Vehicle or Train Wash System Hose Bib(s) in Hazardous Area

Table 5.1: Application of backflow preventers (continued)

Standard Number	Backflow Preventer or Method	Type of Protection BS=back-siphonage BP=back-pressure	Degree of Hazard	Installation Dimensions and Position	Pressure Condition (I=Intermittent) (C=Continuous)	Comments	Use
ASSE 1015	Double Check Valve Assembly	BS & BP	Low	Inside building-18 inches to 48 inches (centerline to floor) Outside building-18 inches to 24 inches (centerline to floor) 60 inches required above assembly for testing	C	-Valves per section 603 **See footnote	Fire Sprinkler w/o Chemical Additive Wash Down Rack Culinary Pressure Cooker & Industrial Food Steamer Commercial Domestic Water - Low and Moderate Containment
ASSE 1019	Vacuum Breaker Wall Hydrants	BS	Low	Minimum 6 inches above grade	I		Wall Hydrant
ASSE 1020	Pressure Type Vacuum Breaker	BS	High	Minimum of 12 inches above highest outlet; Vertical only Max. 60 inches to floor/grade Area Shall Be Suitable for Un-controlled Discharge Residential - Outdoors Only	C	-Valves per section 603 **See footnote	Residential Lawn Irrigation System
ASSE 1022	Backflow Preventer for Carbonated Beverage Machine	BS & BP	Low to Moderate	Vertical or horizontal No copper pipe downstream of backflow preventer	I/C	*See footnote	Carbonated Beverage System or Equipment Tea/Coffee Makers/Dispenser Juice Dispenser Frozen Beverage/Makers/Dispenser

Table 5.1: Application of backflow preventers (continued)

Standard Number	Backflow Preventer or Method	Type of Protection BS=back-siphonage BP=back-pressure	Degree of Hazard	Installation Dimensions and Position	Pressure Condition (I=Intermittent) (C=Continuous)	Comments	Use
ASSE 1024	Dual Check Valve	BS & BP	Low to Moderate	Any readily accessible position	C	*See footnote	Residential Domestic Water Containment Residential Fire Sprinkler System -Outside Drinking Fountain Commercial Ice Maker Dental Operative Unit Non-carbonated Beverage Dispenser Water Filter Cartridge Humidifier Hand Held Shower Tub Spout Below Flood Rim Shower Steamer Food Steamer; Wok Range; Proofer;
ASSE 1035	Atmospheric Vacuum Breaker	BS	Low	Six (6) inches above downstream piping Area suitable for discharge	I		-Chemical faucets Hose sprays on faucets not meeting standards Miscellaneous faucet applications
ASSE 1047	Reduced Pressure Detector Assembly	BS & BP	High Moderate Low	Inside building -18 to 48 inches (center line to floor) Horizontal or Vertical Drain pipe to floor Area Shall Be Suitable for Un-controlled Discharge	C	**See footnote Recommend floor drainage system capable of handling a catastrophic failure of the BFP	Fire Sprinkler with Chemical Additive and where Detector Meter is needed.
ASSE 1048	Double Check Detector Assembly	BS & BP	Low	Inside building -18 to 48 Inches (centerline to floor) Horizontal or Vertical Drain pipe to floor	C	** See footnote	Fire Sprinkler w/o Chemical Additive and where Detector Meter is needed.
ASSE 1052	Dual Check Vacuum Breakers	BS & BP	High Moderate Low	Hose bib Dual Check Vacuum Breaker	C		-Miscellaneous hose bibb connections

ASSE 1055	Air Gap	BS	High	Minimum of 12 inches above outlet and stored concentrate	I		Janitorial Product Dispensing
ASSE 1056	Spill-resistant vacuum breaker	BS	High Moderate Low	Minimum of 12 inches above highest outlet; Vertical only Max. 60 inches to floor/grade	C	-Valves per section 603	-Soap dispensers -Specialty sinks -Cleaning equipment

*A dated test tag shall be affixed to all ASSE 1012, ASSE 1022 and ASSE 1024 devices indicating:

- Installation date.
- The following statement: "FOR OPTIMUM PERFORMANCE AND SAFETY, WSSC CODE REQUIRES THAT THIS DEVICE SHALL BE REPLACED OR REBUILT EVERY FIVE (5) YEARS.

**A dated test tag shall be affixed to all ASSE 1013, ASSE 1015, ASSE 1020 ASSE 1047 and ASSE 1048 assemblies.

SECTION 502

BACKFLOW PREVENTION FOR SPECIFIC FACILITIES

502.1 Auxiliary Water Systems. An approved backflow-prevention assembly shall be installed at the service connection to any premises where there is an auxiliary water supply or system as follows:

502.1.1 Connections to Potable Water Systems. For connections to potable water systems, an air-gap separation or a reduced-pressure principle backflow-prevention assembly shall be installed at the interconnection when the auxiliary water supply is or may be contaminated to a degree that it would constitute a high hazard. A double check valve assembly shall be installed at the interconnection when the auxiliary water supply is verified as municipal grade potable water treatment under a Maryland Department of the Environment permit .

502.1.2 Private Water Supplies and Secondary Sources of Water. For private water supplies and secondary sources of water, an air-gap separation or a reduced-pressure principle backflow-prevention assembly shall be installed at the interconnection because the private water supply and/or secondary source of water are un-regulated and may be contaminated to a unknown degree.

502.1.3 Used Waters and Industrial Fluids. For used waters and industrial fluids, an air-gap separation or a reduced-pressure principle backflow-prevention assembly shall be installed where there is a high hazard.

502.2 Fire Hydrant Meters and Backflow Preventers for Temporary or Seasonal Use.

502.3.1 General. WSSC may authorize use of a fire hydrant water meter to applicants requiring water for temporary use as follows:

502.2.1.1 Small Hydrant Meter. A WSSC small hydrant meter (3/4inches) shall include an integral hose-connected vacuum breaker (ASSE 1011).

502.2.1.2 Large Hydrant Meter. For a WSSC large hydrant meter (3 inches), the applicant shall provide a reduced pressure principle backflow assembly (ASSE 1013) suitable for high-hazard applications. The assembly must carry a satisfactory test tag current within six months. The BFP shall be located within 20 feet of the Hydrant Meter, ahead of any water take-offs, and the inlet piping/or hose shall not be concealed.

502.2.1.3 Fire Hydrant's Use Restrictions. Fire hydrant use shall be restricted to temporary or seasonal applications such as, but not limited to: Tank-truck filling, temporary water for construction sites, special events (e.g., charity

walks, fairgrounds), and seasonal uses (e.g., irrigation). Fire hydrants shall not be used to circumvent the need to obtain service connections to supply water to full-time businesses, nurseries with retail and maintenance buildings, and similar applications. Such applications shall require a permanent service connection.

502.3 Parallel Systems. In commercial applications and in R-3 occupancies where a 13R fire sprinkler system is specified, multiple water systems may be established in parallel as follows:

502.4.1 Fire Sprinkler Systems shall be the first supply branch; this branch may be ahead of an inside domestic meter providing a detector type BFP is used; see 502.2.2 and 5.2.2.4 above.

502.4.2 Irrigation – branch shall be downstream of an inside meter; ahead of pressure reducing station, if applicable; backflow commiserate with hazard.

502.4.3 Domestic – branch shall be downstream of an inside meter; containment backflow commiserate with hazard.

504.4.4 Non-potable system – branch shall be downstream of an inside meter; containment backflow shall be an ASSE 1013 RP

502.4 Automatic Residential Fire Sprinkler Systems. On residential buildings equipped with an NFPA 13D residential fire sprinkler system, the tee feeding the residential fire sprinkler system shall be located on the *outlet side* of the meter. Potable water systems shall be protected against backflow from automatic fire sprinkler systems by a minimum of a dual check valve, ASSE 1024, CSA B64.6. Chemical additives shall be *prohibited* in residential fire sprinkler systems. *No valve* shall be installed on the tee branch supplying the fire sprinkler system.

502.5 Automatic Commercial Fire Sprinkler Systems. Where potable water is used to serve or supplement a fire sprinkler system, backflow prevention shall be as follows;

502.2.1 ASSE 1015 DCVA – Metered water; no chemical additives.

502.2.2 ASSE 1048 DCDA – Un-metered water; no chemical additives.

502.2.3 ASSE 1013 RPZA – Metered water; with chemical additive.

502.2.4 ASSE 1047 RPDA – Un-metered water; with chemical additive.

502.6 Retrofits and Existing Commercial Fire Sprinkler Systems. Existing Commercial Fire Sprinkler Systems shall be required to update/upgrade the backflow prevention as follows:

502.6.1 Ten Head Rule. Where more than ten sprinkler heads are added or relocated in conjunction with interior building renovations, a testable backflow assembly corresponding to 502.5 shall be installed.

502.6.2 Single Check Valves. Older systems (untouched or retrofitting up to ten heads), utilizing a single check valve for backflow prevention are not required to upgrade to a testable assembly provided each of the following conditions are met:

502.6.1 No chemical additives are present or have ever been utilized.

502.6.2 Single check valves shall be replaced every five years. New check valves shall be tagged with the installation date; the expiration date; and a notice identifying the requirement to replace by the expiration date.

502.6.3 Where possible, a testable backflow assembly per 502.5 shall be installed.

502.6.3 Unprotected Systems. Unprotected systems shall be required to have a testable backflow assembly installed per 502.5.

502.6.4 Hydraulic Consideration. Where backflow protection is added or upgraded, the owner/applicant, their design team, and/or their installing contractor shall be required to coordinate these changes with the appropriate county or local fire officials.

CHAPTER 6

INSTALLATION OF BACKFLOW PREVENTERS

SECTION 601

GENERAL

601.1 Installation Dimensions. Installation dimensions shall conform to Table 5.1. Double check detector assemblies (ASSE 1048) and reduced-pressure detector assemblies (ASSE 1047) shall be installed in accordance with [WSSC's Standard Details for Construction](#).

601.2 Accessibility.

601.2.1 General. Backflow preventers shall be readily accessible for maintenance, replacement and testing. Backflow preventers shall not be installed where platforms, ladders or lifts are required for access. Backflow preventers shall be installed inside buildings in an area capable of maintaining a minimum temperature of 50 degrees Fahrenheit, except those approved for seasonal removal or replacement.

601.2.2 Backflow Preventers Above Grade. If a new backflow preventer must be installed higher than 5 feet above finished floor/grade, the building owner shall install an OSHA-approved permanent platform at the backflow preventer to provide access for workers. For existing backflow preventers installed higher than 5 feet above finished floor/grade, the building owner shall provide an OSHA-approved platform or scaffold for maintenance and testing; or the owner shall contract a WSSC registered Master Plumber to relocate the assembly to an approvable location.

SECTION 602

DESIGNATED AREA

602.1 General. Backflow preventers shall be installed in an area exclusively reserved for such assemblies or devices. Related appurtenances including valves, water meters, and fire sprinkler standpipes shall be permitted to share the same area, provided respective dimensional requirements can be maintained. Adequate sized floor drains shall be required for assemblies and devices with relief opening installed inside buildings. The relief drain opening shall be installed with a manufacture's air gap and piped to a floor drain

602.2 Space Requirements. A minimum of 30 inches of unobstructed space shall be provided in front of backflow assemblies or devices for maintenance and testing. A minimum of 12 inches of unobstructed space shall also be provided behind 3-inch and larger backflow assemblies or devices. A minimum of 6” of unobstructed space shall be provided behind 2-inch and smaller assemblies or devices. A minimum of 6 feet of headroom shall be provided.

SECTION 603 VALVES

603.1 Shut-off Valves. Shut-off valves shall be required on the inlet and outlet of reduced-pressure assemblies (ASSE 1013 and 1047), double check assemblies (ASSE 1015 and 1048) and pressure-type vacuum breaker assemblies (ASSE 1020 and 1056), and on the inlet to atmosphere-type vacuum breaker (ASSE 1001) assemblies. Valves shall be factory affixed directly to the backflow assembly body.

603.2 Requirements for ASSE 1013; 1015; 1047; and 1048 Assemblies. A fine-mesh y-strainer with drain valve may be installed per manufacture’s specifications ahead of the inlet shut-off valve on ASSE 1013 assemblies. ASSE 1013 and 1047 assemblies shall not be installed in a vertical position unless approved by the manufacturer. ASSE 1015; 1047; and 1048 assemblies for fire sprinkler systems shall be installed with FM-UL rated valves or with rising stem gate valves; valves shall be indicator type and strainers shall not be installed.

603.3 Full-Flow Characteristic Valves. Full-flow characteristic valves; either ball type or resilient seated gate type shall be installed on all assemblies.

SECTION 604 OTHER REQUIREMENTS

604.1 Bypass Arrangements. Bypass arrangements shall be permitted around backflow preventers provided equivalent protection is installed on the bypass line.

604.2 Backflow Preventers Installed Outside. Backflow preventers shall be installed inside the building unless otherwise approved by WSSC. When installed outside the building, the building owner shall provide an above grade structure for the backflow preventers which shall be both heated to prevent freezing and properly secured to prevent damage. Heat shall not be required if the assembly or device is removed during the winter months. Assemblies for seasonal application shall be installed with unions.

604.3 Prohibited Locations. Backflow preventers designed to vent to atmosphere shall not be installed in pits, vaults or similar submerged areas and shall not be installed in chemical or fume hoods. BFPs’ shall also be protected from freezing.

604.4 Common Service. For new construction wherein a common service splits into separate fire and domestic lines inside the property, backflow-prevention assemblies or devices shall be located after the split with no assembly or device required on the common service.

CHAPTER 7 TESTING AND MAINTENANCE OF BACKFLOW PREVENTERS

SECTION 701 GROUP R-3 OCCUPANCIES

701.1 Containment Backflow Devices. In Group R-3 occupancies (one- and two-family residences), the building owner shall have the non-testable backflow containment devices replaced or rebuilt every 5 years.

701.2 Backflow Assemblies. Building owners shall have their backflow assemblies tested by a certified Backflow Technician under these circumstances:

- ✓ On installation
- ✓ At least annually
- ✓ After repairs
- ✓ After relocation or replacement
- ✓ On responding to a reported backflow incident

SECTION 702 ALL OTHER OCCUPANCIES

702.1 Internal-Protection Backflow Devices. In all other occupancy-Group classifications, the building owner shall have non-testable backflow-prevention devices used for internal protection replaced or rebuilt every 5 years.

702.2 Backflow Assemblies. In all other occupancy-Group classifications, building owners shall have their backflow containment assemblies, as well as internal-protection assemblies, tested by a certified Backflow Technician under these circumstances:

- ✓ On installation
- ✓ At least annually
- ✓ After repairs
- ✓ After relocation or replacement
- ✓ On responding to a reported backflow incident

SECTION 703 PERMITS

703.1 Rebuilding and Testing of Backflow Preventers. Rebuilding and testing of backflow assemblies shall be exempt of a required permit but shall only be performed by a certified Backflow Technician. Replacing or rebuilding non-testable backflow preventers shall be exempt of a required permit and may be performed by a homeowner (residential only) or a certified backflow technician. A notification tag must be hung on or near the device.

703.2 Long-Form Permit. A long-form permit shall be required for a new installation, or to relocate an existing, backflow assembly or a non-testable backflow device, residential or commercial.

703.3 Short-Form Permit. A short-form permit may be used for the direct replacement of backflow-prevention assemblies provided the existing location and application are consistent with the provisions of this Manual and the manufacturer's installation instructions.

703.4 Special Exception, Federal Facilities. Permitting and inspection requirements for federal facilities shall be as provided in applicable law and/or pursuant to agreement with the appropriate federal agency. Such facilities may be required to install an outside water meter setting, and to contain the property with backflow protection, at the same general location as the meter. This installation shall be above ground and must be protected from freezing.

SECTION 704 FIELD-TEST PROCEDURES AND EQUIPMENT

704.1 Field-Test Procedures. The testing procedure for backflow-prevention assemblies shall be performed in accordance with one of the following standards: ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CAN/CSA B64.10.

704.2 Field-Test Equipment. To ensure the ability of the test equipment to provide accurate data, the field-test equipment shall be calibrated annually and the calibration date shall be entered on the test report. There shall be a dated calibration sticker affixed to the test equipment. Only test equipment meeting minimum standards of the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research shall be accepted.

SECTION 705 TEST REPORTS

705.1 General. Testing of backflow assemblies requires the submission of a completed [WSSC backflow preventer test report](#) showing a passing test result. Replaced or rebuilt non-testable backflow preventers do not require submission of a form but a notification tag must be hung on or near the device.

705.2 Submission of Test Reports. Test reports shall be completed by certified Backflow Technicians and shall be submitted preferably on WSSC's website. (<https://eservices.wsscwater.com/wps/portal/backflow>). As of July 1st 2010 test report number for each test report must be entered when test reports are submitted on-line. These numbers will be purchased by the Master Plumber before submitting reports.

705.3 Test reports showing a failing test result shall not be acceptable. In the event of a failed test, the backflow technician shall repair, rebuild or replace the backflow assembly until a passing test result is obtained. If property owners do not authorize repairs, water service should not be restored until the protection of the potable water supply system is reestablished.

705.4 License Number. Certified Backflow Technicians shall be required to provide their license number on all test reports. Submission of a test report online will not be possible without providing a license number. Journeyman plumbers must also provide the master plumbers license number they are working under

CHAPTER 8

CERTIFIED BACKFLOW TECHNICIANS PROGRAM

SECTION 801

LICENSES AND REGISTRATION

801.1 Eligible Persons. Only a WSSC-licensed Master Plumber, Master Plumber/Gasfitter, Journeyman Plumber or Journeyman Plumber/Gasfitter shall be eligible for licensing as a WSSC Backflow Technician.

801.2 Training. All Backflow Technician applicants shall pass [a State-approved 32-hour Cross-Connection/Backflow Prevention training program](#), or pass a 32-hour Cross-Connection/Backflow Prevention training program from another jurisdiction or state that is acceptable to WSSC.

801.3 Certified Backflow Technician. Only individuals licensed with WSSC as a Backflow Technician shall be authorized to repair, rebuild, install or test backflow assemblies, and to provide certification of any of these activities. This individual shall also be employed by a registered and insured plumbing firm.

801.4 Re-Certification Limit. A Backflow Technician license shall be valid for a period of 3-years. Individuals shall be required to complete a **Maryland** State-approved 8-hour recertification program in order to keep their certification.

801.5 Minimum Coverage. The minimum insurance requirement shall meet section 12-501 of the State of Maryland division of occupational and professional licensing for a Commercial General Liability policy.

801.6 Registration. Applicants shall register at the WSSC after trade and examination qualifications are satisfied per section 802, as applicable.

801.7 Lapse of Registration. Lapse of registration shall render a WSSC license invalid after a 6-month grace period. No work regulated by this Manual shall proceed until registration is current. Individuals who allow their certification to lapse shall be required to complete a **Maryland** State-approved 32-hour Cross-Connection/Backflow Prevention training program after a 6-month grace period.

SECTION 802 TRADE QUALIFICATIONS AND EXAM

802.1 Journeyman Plumber. In order to qualify for the Journeyman Plumber exam, applicants shall meet the following requirements:

802.1.1 Work Experience. Applicants shall furnish satisfactory proof of work experience in the plumbing trade as an apprentice under the direction and control of a WSSC-licensed Master Plumber or Master Plumber/Gasfitter for a minimum of 7,500-hours and 4-years of work experience in the trades.

802.1.2 Formal Training. Apprentices in the plumbing trade who graduate from approved plumbing training courses, conducted under the auspices of an approved trade association, utility, or educational institution, shall gain additional credit toward the working hour's requirement. Up to 750-hours spent by the applicant in attending such courses shall count as double when applied toward the total required hours.

802.1.3 Backflow Certification. As a prerequisite for taking the Journeyman Plumbing exam, applicants shall have passed a 32-hour **Maryland** State-approved Backflow Prevention Certification Program, or passed a Backflow Prevention Certification Program from another jurisdiction or state that is acceptable to WSSC, within 3-years prior to application.

802.2 Master Plumber. In order to qualify for the Master Plumber exam, applicants shall meet the following requirements:

802.2.1 Work Experience. Applicants shall furnish satisfactory proof of work experience in the plumbing trade as a registered Journeyman Plumber under the direction and control of a WSSC-licensed Master Plumber or Master Plumber/Gasfitter for a minimum of 3,750-hours and 2-years of work experience in the trades.

802.2.2 Backflow Certification. As a prerequisite for taking the Master Plumbing exam, applicants shall have passed a 32-hour **Maryland** State-approved Backflow Prevention Certification Program, or passed a Backflow Prevention Certification Program from another jurisdiction or state that is acceptable to the WSSC, within 3-years prior to application.

CHAPTER 9 AMENDMENTS TO THE INTERNATIONAL PLUMBING CODE

IPC Section 312.9.2, Testing, is hereby **AMENDED** by **ADDING** the requirement for tagging testable backflow preventers after testing, as follows:
(IPC as amended)

312.9.2. Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assemblies, hose connection backflow preventers, and spill-proof vacuum breakers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. The testing procedure shall be performed in accordance with one of the following standards:

ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CAN/CSA B64.10

Tests shall be performed by a certified Backflow Prevention Mechanic. A ***dated test tag*** indicating test results shall be attached to each testable backflow prevention assembly. ASSE 1012, ASSE 1022 and ASSE 1024 devices shall be tagged and shall include: Installation date, and the words, "FOR OPTIMAL PERFORMANCE AND SAFETY THIS DEVICE SHALL BE REPLACED OR REBUILT EVERY 5 YEARS." [Test tags available from WSSC]

IPC Section 608.1, Protection of Potable Water Supply, General, is hereby **AMENDED** by **ADDING** new Sections 608.1.1 and 608.1.2, to require containment for all new and design-retrofit buildings, as required by WSSC under provisions of the Safe Drinking Water Act. (IPC as amended)

608.1.1 Containment. On all new and design-retrofit water service connections, cross-connection control shall be by containment of the premises and by isolation for individual outlet protection. Containment protection shall be accomplished through installation of a backflow protection assembly, consistent with the degree of hazard posed by the premises.

608.1.2 Installation. In buildings with an ***outside*** water meter, the assembly shall be installed ***between*** the building service valve and the first plumbing outlet or plumbing branch connection. In buildings with an ***inside*** water meter the assembly shall be installed immediately on the outlet side of the meter ***before*** the first plumbing outlet or plumbing branch connection. Also see Section 607.3.2, Thermal Expansion.

CHAPTER 10 AMENDMENTS TO THE INTERNATIONAL RESIDENTIAL CODE

IRC Section P2503.7.2, Testing, is hereby **AMENDED** by **ADDING** the requirement for tagging testable backflow preventers after testing, all to read as follows:
(IRC as amended)

P2503.7.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, pressure vacuum breaker assemblies, double-detector check valve assemblies, and pressure vacuum breaker assemblies shall be tested at the time of installation, immediately after repairs or relocation and at least annually. Tests shall be performed by a certified Backflow Prevention Mechanic. A dated *test tag* indicating test results shall be *attached* to each testable backflow prevention assembly. ASSE 1012 and ASSE 1024 devices shall be tagged and shall include: Installation date, and the words, "FOR OPTIMAL PERFORMANCE AND SAFETY THIS DEVICE SHALL BE REPLACED OR REBUILT EVERY 5 YEARS." [Test tags available from WSSC]

IRC Section 2901.1, Potable Water required, is hereby **AMENDED** by **ADDING** new Sections 2901.2 and 2901.2.1, to require containment and method of installation for all new and design-retrofit Group R-3 residential occupancies, as required by WSSC under provisions of the Safe Drinking Water Act.
(IRC as amended)

P2901.2 Containment. On all new and design-retrofit water service connections, cross-connection control shall be by *containment* of the premises and by individual outlet protection. The containment protection shall be an ASSE 1024 dual check valve device.

P2901.2.1 Installation. In buildings with an *outside* water meter, the device shall be installed between the building service valve and the first plumbing outlet or plumbing branch connection. In buildings with an *inside* water meter the device shall be installed immediately on the outlet side of the meter *before* the first plumbing outlet or plumbing branch connection. Where a residential fire sprinkler system is installed, the device shall be installed immediately *after* the fire sprinkler system connection tee. Also see Section 2903.4, Thermal Expansion.

IRC Section P2902.5.4, Connections to Automatic Fire Sprinkler Systems, is hereby **AMENDED** to allow a non-testable backflow preventer of equal protection in lieu of a testable backflow preventer typically specified in commercial applications.
(IRC as amended)

P2902.5.4. Connections to automatic fire sprinkler systems. The potable water supply to automatic fire sprinkler systems shall be protected against backflow by minimum of a dual check valve, ASSE 1024, CSA B64.6. Chemical additives are prohibited in residential fire sprinkler systems.