



Washington Suburban Sanitary Commission

14501 Sweitzer Lane • Laurel, Maryland 20707-5902

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September 9, 2009

Re: WSSC Cross-Connection Control Program (CCP) Enhancements

Dear Valued Stakeholder:
(or specific contact/coordinators for various agency/organizations)

The Washington Suburban Sanitary Commission (WSSC) is seeking your agency/organization's valued input into the enhancement of our Cross-Connection Control and Backflow Prevention Program. Please consider the following program highlights along with the attached Standard Procedure as the framework of the proposed changes to this federal and state mandated program.

WSSC takes pride in our diligent efforts to provide safe drinking water to our 1.8 million customers in Montgomery and Prince George's Counties. An important action related to this effort is our proactive approach towards the review of plumbing plans and subsequent plumbing inspections during the initial building/plumbing construction phases and also during tenant fit-outs and retrofits. One paramount objective of the review and inspection process is to ensure that backflow prevention assemblies are installed commensurate to the level of hazard. These backflow assemblies are critical to protection of the water supply and are constructed to prevent an undesirable reversal of contaminants from back flowing into the potable water system.

At this time, the WSSC has decided to expand its Cross Connection Program to include follow-up inspections of on-property plumbing systems and backflow prevention assemblies. These inspections will enable WSSC to:

1. Determine if existing backflow assemblies have been properly maintained and tested
2. Identify if water use has changed
3. Determine if plumbing modifications have altered the degree of hazard, or worse, created un-protected hazards

In addition, the WSSC intends to enhance the backflow records management program. This includes utilization of additional records management agents along with a computerized database to:

1. Track approximately 300,000 backflow prevention assembly records
2. Send reminder letters and Notices of Violations
3. Conduct a "self-survey" program; and

4. Manage program outreach material

The objective of the self-survey program and additional outreach is to encourage the property owners to become self-compliant prior to the arrival of a WSSC Cross-Connection Inspector at their facility.

The attached new [draft] Standard Procedure (SP) provides a program framework for the proposed WSSC CCP modifications. A detailed Cross-Connection Program Manual is under development and will coincide with Plumbing Code Changes in 2010. The manual is expected to surpass typical code and SP language by providing step by step guidance to the customers; engineers/designers; plumbers; backflow technicians; and the WSSC staff for day-to-day decision making and program execution.

The proposed fee of \$10 for each backflow assembly test report enables WSSC to fund the growth and sustainability of the Cross-Connection Control's inspection and records management programs. The WSSC staff believes that a user-based fee is the overall fairest approach and is much preferred over a rate increase that impacts the entire customer base. Because it takes several years to establish an effective fee collection program, the growth of the enforcement program is planned to be on a step-by-step process over the next four (4) years. In order to simplify the fee collection process, the current proposal is to collect the fee similar to the purchase of Short Form permits on-line.

Please provide your comments on the attached Standard Procedure, the proposed fee, and the overall Cross-Connection Program framework, no later than Friday, October 16, 2009. For questions or comments, please contact:

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Thank you!
Sincerely,

Original Signed

Tom Buckley
WSSC Chief Plumbing Inspector

DRAFT

STANDARD PROCEDURE OF THE WASHINGTON SUBURBAN SANITARY COMMISSION

ORIGINATOR & POSITION	SP NUMBER	APPROVED BY/DATE	EFFECTIVE DATE	PAGE	1
Tom Buckley, WSSC's Chief Plumbing Inspector	SUPERSEDES N/A			OF	8

SUBJECT: Cross-Connection Control Program (CCP)

PURPOSE: This document will provide the framework of the WSSC's CCP and clarify roles and responsibilities of the WSSC and the regulated community.

I. Definitions

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

Backflow Preventer: An assembly, device, or method that prohibits the backflow of water 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."

Code Official: All WSSC employees charged with enforcement of [WSSC Plumbing and Fuel Gas Code](#) (and therefore of WSSC's CCP Manual) shall be known individually and collectively as Code Officials.

Contamination: Impairment of the quality of the water which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, waste, etc.

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.

Customer: A residential, commercial, industrial, or governmental property owner.

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.

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

Test Report: A demonstration of a successful backflow assembly analysis performed and submitted by a registered backflow technician to WSSC to fulfill requisite testing and reporting requirements set forth by Code and the CCP Manual.

Test Report Submittal Fee: A fee that is determined by the WSSC for management of the records associated with each backflow assembly.

II. Authority and Responsibilities

A. WSSC's Authority and Responsibilities:

- WSSC, established by Code of Maryland Regulations (COMAR) Article 29, has certain rule-making authority.
- WSSC is required by Federal Safe Drinking Water Act and COMAR to provide and maintain a viable Cross-Connection Control program.
- WSSC is responsible for protection of the public potable water distribution system from contamination or pollution due to backflow caused by either backpressure or backsiphonage.
- WSSC will inspect commercial, industrial, as well as government facilities and residential properties as necessary.
- WSSC Code Officials have the authority to enter a building or premises at all reasonable times to perform an inspection.
- WSSC will keep records of test reports, field investigations and subsequent corrective actions.
- WSSC will keep on file a list of private contractors who are certified backflow technicians, and will make the list available to customers.
- In the event of discovering backflow of contaminants into the public water system, WSSC shall promptly take corrective actions to confine and minimize the impact.
- For a nominal fee, WSSC will make CCP Manual available to customers and backflow testers. WSSC reserves the right to grant modifications to the CCP Manual for individual cases, provided that such modification does not compromise health, life or fire safety or cause damage to WSSC's systems.

B. Customer's responsibilities:

- The customer is responsible for the elimination of, or protection against cross-connections on his/her premises.
- The customer shall immediately notify WSSC if there is reason to believe that backflow has or may have occurred from a private water system, equipment, fixture, or other source to the public water system.
- The customer, at his/her own expense, shall purchase, install, operate, test and maintain approved backflow-prevention assemblies as directed by WSSC.
- The customer shall provide and maintain a high hazard backflow assembly for large hydrant meters that are rented from WSSC.
- The customer shall be responsible for hiring a certified backflow technician to perform the installation, testing and maintenance on his/her backflow-prevention assemblies.

- The customer shall immediately correct any malfunction of a backflow preventer revealed by periodic testing or observation.
- The customer shall be responsible for maintaining all necessary records on backflow-prevention assemblies and/or devices installed on his/her premises.
- The customer shall immediately contact WSSC when the use of his/her property changes. WSSC shall then re-assess the hazard classification of the property and determine when an inspection is warranted.
- The customer shall notify WSSC in writing of any backflow preventers that have been taken out of service.

C. Backflow technician's responsibilities:

- Backflow technicians shall be held responsible for the violation of any part of WSSC's CCP Manual and Plumbing Codes whether the violation is committed by themselves or by their employees or agents.
- Backflow technicians shall be responsible for performing accurate field tests and for repairing, overhauling or replacing backflow preventers.
- 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.
- The backflow technician is responsible for submitting the records of their satisfactory testing (using [WSSC's standardized test forms](#)) to WSSC. The backflow technician is also responsible for paying for test report submittal fees.
- 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.
- It shall be the backflow technician's responsibility not to change the design, material or operational characteristics of an assembly or a device during repair or maintenance without prior approval of WSSC.
- Backflow technicians shall conduct testing upon assurance that all safety procedures have been observed and that all personnel involved have been appropriately notified.
- 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.

III. Procedure

A. Backflow Prevention Selection Requirements:

New facilities

- All new facilities (residential and commercial), 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 shall have the option to separate distribution mains for fire and domestic use, with a WSSC-approved backflow-prevention assembly on each branch.

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 (for assemblies) or repaired or replaced every five years (for internal-protection devices).
- Facilities built before May 1, 2007 without containment or internal-protection backflow preventers (i.e., mainly low-hazard facilities) shall generally not need to be retrofitted, unless WSSC determines that retrofitting is warranted. WSSC shall require retrofitting if WSSC identifies high-hazard facilities without containment assemblies or if WSSC identifies high-hazard-facilities with a type of containment assemblies that is not commensurate with the degree of hazard.

Listings and Standards

- Backflow preventers shall conform to American Society of Sanitary Engineers (ASSE) standards as listed in WSSC's CCP Manual.
- Application of backflow preventers as listed in WSSC's CCP Manual shall be subject to field verification of hazards and conditions by WSSC.

B. Administration:***Testing notification for existing facilities***

- WSSC intends to send notification of testing requirements, using a standardized informational letter, which outlines the requirements and a specific period of time to for the customer to comply. If WSSC does not receive a response in the specified time period, WSSC shall send a notice of violation (NOV). Regardless of this step by WSSC, all customers are responsible to conduct their regular testing of their backflow assemblies and send the reports to WSSC.

WSSC's inspections of existing facilities

- Existing backflow-prevention assemblies may 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 will be inspected to determine possible changes to the initial plumbing configuration and potentially unprotected parts of the system.
- WSSC will prioritize its inspections and perform such inspections as often as staffing level allows.
- WSSC shall generally do no inspection of residential backflow-prevention assemblies or devices, except on a case-by-case basis such as residences having an auxiliary water supply.

Plan review and inspection of new and design-retrofit construction

- 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 WSSC's CCP Manual and the WSSC Plumbing and Fuel Gas Code.
- Final plans and specifications for cross-connection control shall be reviewed and approved by WSSC prior to construction.

Enforcement actions

- a. Notice of Violation:
 1. A Code Official shall serve a Notice of Violation (NOV) or a directive to the person responsible for the erection, installation, alteration, extension, repair, removal or demolition of work; or for the existence of an un-protected or improperly protected cross-connection, in violation of the provisions of WSSC's CCP Manual and Plumbing Codes.
 2. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation within a specified timeframe:
- b. Stop-Work Order:
 1. Upon notice from the Code Official, work that is performed contrary to the provisions of WSSC's CCP Manual or in a dangerous or unsafe manner shall immediately cease.
- c. Civil Citations
 1. Pursuant to the Code of Maryland, a Code Official shall be authorized to issue civil citations to any

- person violating any provision of WSSC's CCP Manual and/or the Plumbing and Fuel Gas Code.
2. A person committing any of the following violations of WSSC's CCP Manual shall be subject to immediate delivery of a WSSC civil citation, with or without first being issued a NOV:
- Work Without License
 - Work Without Permit
 - Health and Safety Violation
 - Negligence, Incompetence, or Misconduct
 - NOV Non-Compliance
- d. Authority to condemn equipment
1. Whenever a Code Official determines that any installation, or portion thereof, regulated by WSSC's CCP 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.

Public relations and education

- WSSC will make backflow-education material available to customers through recurring water-bill inserts. Backflow-education material should also be made available with applications for new service and with notifications to existing customers.

Record keeping

- WSSC intends to use an automated facilities management and work-order system (i.e., computer software) to track its customers' backflow prevention assemblies and devices.
- WSSC intends to 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 will include the location, type, serial number, and history of all inspections, tests, rebuilds, etc.
- WSSC intends to make it possible for test reports to be directly included into the computer database upon online submission by the backflow technician or the customer. There is a nominal fee associated with test submittals (both electronic and hard copy). WSSC intends to have additional quality-control functionality to implement a validation process to ensure that data for import does not contain errors.
- WSSC intends to keep records of the investigation and subsequent corrective action taken for backflow incidents.

Installation of backflow preventers

- Backflow preventers shall be installed, relocated or replaced in accordance with the "Installation of backflow preventers" Chapter of WSSC's CCP Manual. Such work shall be performed by a WSSC registered, licensed and cross connection certified master plumber or journeyman level designee of the firm supervised by a master.

C. Testing and maintenance of backflow preventers

Group R-3 (one- and two-family residences), ***Occupancies***

- In Group R-3 occupancies, the building owner shall have the non- testable backflow devices replaced or rebuilt every 5 years.
- Building owners shall have their testable backflow assemblies tested by a WSSC certified backflow technician under these circumstances:
 - ✓ On installation

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

All Other Occupancies

- 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. In addition, the building owners shall have their testable backflow containment assemblies, as well as testable backflow assemblies used for internal-protection (isolation), tested by a WSSC certified backflow technician under these circumstances:
 - ✓ On installation
 - ✓ At least annually
 - ✓ After repairs
 - ✓ After relocation or replacement
 - ✓ On responding to a reported backflow incident

Permits

- Rebuilding and testing of testable backflow assemblies shall be exempt of a required permit but shall only be performed by a certified backflow technician. Requisite test reports shall be submitted.
- Rebuilding or replacing non-testable backflow preventers shall be exempt of a required permit but shall be performed only by a certified backflow technician. Notification tag must be hung on or near the device.
- A long-form permit shall be required for a new, or the relocation of a, backflow assembly or a non-testable backflow preventer, residential or commercial.
- A short form permit may be used for the direct replacement of testable backflow assemblies provided the existing location and application are consistent with the provisions of WSSC's CCP Manual and the manufacturer's installation instructions.

Field-test procedures

- The testing procedure for backflow-prevention assemblies shall be performed in accordance with the applicable American Society of Sanitary Engineers procedures. Specific guidelines can be found in the WSSC's Cross Connection Manual and Plumbing Codes.

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.

Test reports

- Testing of backflow-prevention 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.

- 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>) or alternately by regular mail.
- 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.
- Certified Backflow Technicians shall be required to provide their license number on test reports.
- Incomplete test reports will be rejected.

E.-Certified backflow technicians program

Licenses and registration

- 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.
- 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.
- Only individuals licensed with WSSC as a backflow technician shall be authorized to repair, rebuild, or test backflow assemblies, and to provide certification of any of these activities.
- A backflow technician license shall be valid for a period of 3-years. Individuals shall be required to complete a State-approved 8-hour recertification program in order to keep their certification.
- Individuals who allow their certification to lapse shall be required to complete a State-approved 32-hour Cross-Connection/Backflow Prevention training program after a six-month grace period.

Trade qualifications and exam

- As a prerequisite for taking the Journeyman Plumbing or Master Plumbing exam, applicants shall have passed a 32-hour 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.

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