Date of Council Work Session: March 11, 2013

TOWN OF LEESBURG
TOWN COUNCIL WORK SESSION

Subject: Cross Connection Control Program Audit Report

Staff Contact: Amy Wyks, Director of Utilities

Recommendation: The audit indicates the program is thorough and detailed. The audit recommends minor editing and updating of the plan to ensure all current requirements are addressed.

Issue: Review of final report by an independent auditor on the Cross Connection Control Program, and discussion of related fines for non-compliance.

Fiscal Analysis: The cost of the third party audit of the Cross Connection and Backflow Program was $2,400. The estimated cost to enforce the existing program is $78,000 which is covered in the current budget. There is no revenue generated from this state mandated program. The cost to implement the audit recommendations is approximately $10,000 -$15,000 and can be covered with existing funding with no additional appropriations needed.

Background: Listed below is specific information on the attached independent audit of the Cross Connection and Backflow Prevention Control Program that was recently conducted. In addition, there is follow up information to Town Council questions from the November 26, 2012 Work Session regarding the respective program.

The purpose of the Cross Connection and Backflow Prevention Control Program, adopted by Ordinance 2009-O-012 (Town Code Section 34-39), is to abate or control actual or potential cross connections and protect the public health. The Town's program provides for establishment and enforcement of cross connection control and backflow prevention in accordance with the Commonwealth of Virginia, State Board of Health, *Waterworks Regulations 1995.*

Testing of each device is required on an annual basis and the customer is responsible to contact a certified tester. Customers are given 30 days to comply and provide test results. In the event, a customer does not comply with the testing requirement, their water service is disconnected and a reconnection fee is charged when water service is restored after complying.

The Program does not grant a waiver for irrigation systems turned off for a season. Instead, the customer is required to either have the device installed and tested or cut and permanently capped. The independent third party audit confirms this policy and emphasizes the importance of not granting waivers as stated below:

> "If a lawn sprinkler system is no longer going to be used and the system has a backflow prevention assembly connected, one of two things should be required. Test the backflow prevention assembly annually as required or remove backflow prevention assembly from service and cut and permanently cap water line piping. The owner of the system should sign a memorandum of understanding stating that if the lawn sprinkling system is to return to service, the owner must notify the Town of Leesburg and test the backflow prevention assembly immediately or risk a noncompliance penalty.

The independent third party audit also states that the Program should add a section on fines for non-compliance as follows:

> "In some instances, it may be impractical to discontinue service. In this case, a fee structure for failure to comply with program requirements may be more appropriate…"

Audit of Cross Connection and Backflow Prevention Control Program

The Utilities Department contracted with Hydro Designs, Inc. to perform an independent audit of the Town's Cross Connection and Backflow Prevention Control Program. The audit included a systematic inspection of the program to determine:

- If the Town's procedures are being recorded accurately;
- If the Town's program is in accordance with the State of Virginia Department of Health requirements; and
- If the Town's program is in accordance with generally accepted best management practices.

The key results of the audit are as follows:

- The existing Cross Connection and Backflow Prevention Control Program is thorough and detailed. Hydro Designs, Inc. recommends minor editing and updating of the plan to ensure all current requirements are met.
- Recommends adding a section to charge fines for non-compliance as in some instances it may be impractical to discontinue water service
- Recommends hosting an annual meeting with testers and require participation in order to be named on the Town's approved testers list.
- Recommends mailing seasonal testing notices (lawn irrigation system) by April 30th. The audit also addresses the concern for noncompliance for lawn sprinkler system that will no longer be used.
- Recommends training of staff for ASSE certification including courses on administration, testing, repairs and survey.
- Mr. Barry Walters will be presenting his final audit report and discussion of our program at the May 14, 2013 Council Meeting.

Cross Connection and Backflow Prevention Control Program
Follow Up Information
November 26, 2012 Town Council Work Session Questions

1) Request: Set expectation in first letter explaining what the customer needs to do, what the process is, and the consequence for non-compliance. Include an educational brochure.
   a) Response: Letters have been reviewed and revised to clarify importance, steps to remain compliant, result for non-compliance, and a link to Town webpage for more information. Educational brochure has been drafted and is ready for print to be included with Spring season first letters.

2) Request: Confirm that annual testing is best practice
   a) Response: According to the Virginia Maintenance Code which is Part III of the Virginia Uniform Statewide Building Code, Chapter 5, Section 505.5.2 regarding testing states "…shall be tested at the time of installation, immediately after repairs or relocation and at least **annually**…"

3) Request: Confirm best practice and recommendation for system that is not in use
   a) Response: Consultant has completed an audit and review of the Town's Backflow Prevention and Cross Connection program regarding best practices for systems not in use. Key findings support current practices and are included in this memorandum.

4) Request: Provide information on public outreach and education
   a) Response: Staff has reviewed the information provided on the Town's web page. Beginning Spring 2013, staff will include a brochure with the annual testing letter. Staff also plans to inquire with the Loudoun County Public schools regarding the possibility of a backpack brochure or flyer.

Attachment (1) Hydro Designs Inc. Audit Report

Corporate Headquarters.
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Troy, MI 48098
248.250.5000 phone
248.786.1789 fax
www.hydrodesignsinc.com
248.786.1789 fax

Mid Atlantic Office
P.O. Box 491
Chester, MD 21619
800.690.6651, ext. 5003

February 1st, 2013

Aref Etemadi
Deputy Director of Utilities
Town of Leesburg
Department of Utilities
1385 Market Street
Leesburg, Virginia 20176

Dear Mr. Etemadi,

This audit report is the first step in maintenance requirements of an ongoing and successful cross connection control program. The suggested action plan and cross connection control program recommendations addressed by this audit report and will assist in protecting the Town of Leesburg Water Distribution System and its water users. All issues in this report should be addressed as soon as possible.

CERTIFICATION STATEMENT

We certify that the data contained herein is factual. Any Requirements made are based upon our experience with cross connection control and our interpretation of the following as they apply to the individual circumstances:

- Virginia Plumbing Code 2009, Chapter 6 – Water Supply and Distribution, Section 608 Protection of the Potable Water Supply
- The Town of Leesburg Cross Connection and Backflow Prevention Control Program – *July 2009, Ordinance No: 2009-O-012*
- Ordinance No. 93-013, An Ordinance amending Chapter 19, Article IV of the Town of Leesburg Code regarding Cross Connection and backflow Prevention Control
- AWWA Manual M-14 - Recommended Practice for Backflow Prevention and Cross Connection Control
- ANSI Specifications

Hydro Designs, Inc. wishes to thank and acknowledge both Lisa Smith and Aref Etemadi for all their assistance during the audit process.

If you have any questions please feel free to contact me at 248.762.0706 or via email at ***bwalter@hydrodesignsinc.com***. We look forward to working with the Town of Leesburg, Department of Public Utilities again in the future.

Sincerely,

Barry Walter
Hydro Designs, Inc.

CROSS CONNECTION CONTROL PROGRAM AUDIT REPORT

Leesburg
the hometown of the 21st century

February 1st, 2013

Aref Etemadi
Deputy Director of Utilities
Town of Leesburg
Department of Utilities
1385 East Market Street
Leesburg, Virginia 20176

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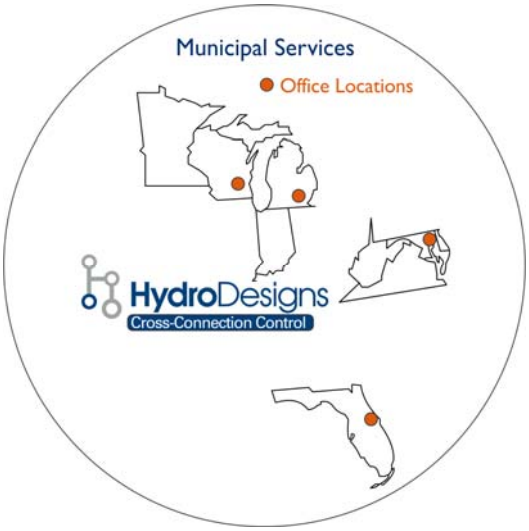
We Keep Drinking Water Safe…..”



Hydro Designs, Inc. (HDI) is a consulting firm that has developed a unique niche in the maintenance of drinking water quality and protection from backflow which is the core of our business.

Over the past 25 years our employees have established highly efficient procedures for inspecting, reporting, and maintaining water and other distribution systems.

Our corporate mission is:

“We keep drinking water safe. We make people aware of the inherent risks and associated compliance issues related to water and other distribution systems.

“Our goal is cost effective compliance.”

Specific Qualifications & Experience

Hydro Designs, Inc. is a professional service organization that specializes in Cross Connection Control Programs. Cross Connection Control Program Management & Training is the main core and focus of our business. We are passionate about providing water utilities and local communities with a cost effective and professionally managed cross connection control program in order to assist in protecting the public water supply.

- HDI conducts over 20,000 Cross Connection Control Inspections ***annually***.

- HDI tracks and manages over 27,000+ backflow prevention assemblies for our Municipal client base.

- Our highly trained staff works in an efficient manner in order to achieve maximum productivity and keep program costs affordable. We have a detailed **system** and **process** that each of our field inspectors follow in order to meet productivity and quality assurance goals.

- Our municipal inspection team is committed to providing outstanding customer service to the water users in each of the communities we serve. We teach and train customer service skills in addition to the technical skills since our team members act as representatives of the community that we service.

- Our municipal inspection team has attended training classes and received certification from the following recognized Cross Connection Control Programs: UF TREEO, UW-Madison, and USC – Foundation for Cross Connection Control and Hydraulic Research, American Backflow Prevention Association (ABPA), American Society for Sanitary Engineering (ASSE). HDI recognizes the importance of Professional Development and Learning. We invest heavily in internal and external training with our team members to ensure that each Field Service and Administrative team member has the skills and abilities to meet the needs of our clients.

- We have a trained administrative staff to handle client needs, water user questions and answer telephone calls in a professional, timely and courtesy manner. Our administrative staff can answer most technical calls related to the cross connection control program and have attended basic cross connection control training classes.

- HDI currently serves over 200 communities in Michigan, Wisconsin, Florida, Maryland, Delaware & Virginia. We still have our first customer!

- HDI staff and company are active members in many water industry associations including: National Rural Water Association, State Rural Water Associations, National AWWA, State AWWA Groups, HDI is committed to assisting these organizations by providing training classes, seminars and assistance in the area of Cross Connection Control.

- Several Fortune 500 companies have relied on HDI to provide Cross Connection Control Surveys, Program Management & Reporting to assist in meeting state/local regulations as well as internal company guidelines.

Professional Associations & Organizations

At Hydro Designs, we are citizens of our industry. HDI Associates are active members of the following professional organizations:

- American Backflow Prevention Association (ABPA)
  www.abpa.org
- American Public Works Association (APWA)
  www.apwa.net
- American Society of Sanitary Engineers (ASSE)
  www.asse-plumbing.org
- American Water Works Association (AWWA)
  www.awwa.org
- International Association of Plumbing & Mechanical Officials (IAPMO)
  www.iapmo.org
- Virginia Section of American Water Works (VA-AWWA)
  www.vaawwa@vaawwa.org
- Virginia Rural Water Association (VRWA)
  www.vrwa.org (Associate Member)
- Chesapeake Section of American Water Works (MD-AWWA)
  www.csawwa.org
- National Rural Water Association (NRWA)
  www.nrwa.org (Corporate Member)
- University of Southern California Center for Cross Connection Control & Hydraulic Research (USCCFCCC&HR)
  www.usc.edu/dept/fcchr

Barry Walter, Vice President - Business Development

Mr. Walter has over thirty years' experience with municipal water and wastewater treatment facilities and systems. Mr. Walter has over twenty years' experience in developing and implementation of cross-connection control programs for municipal and industrial clients. Prior to HDI Mr. Walter was with the Maryland Rural Water Association, Worcester County Sanitary Commission and was the Director of Public Works in Snow Hill, MD. In addition to this extensive experience Mr. Walter has the following certifications and training experience:

Education

- *Bridgewater College –Liberal Arts*
- *Wor-Wic Community College – Industry, Trades and Manufacturing*
- *University of Florida TREEO Center – Cross Connection Control Management*
- *University of Southern California Foundation for Cross Connection Control & Hydraulic Research*

Professional Experience

- *Over thirty, (30) years in the Water Utility Industry*
- *Director of Public Works – Snow Hill, Maryland*
- *Water Distribution Ocean Pines Service Area- Worcester County Sanitary Commission*
- *Water System Circuit Rider – Maryland Rural Water Association*
- *Program Manager EPA Training & Technical Assistance – Maryland Rural Water Association*
- *Hydro Designs, Inc. – Development of Cross Connection Control Programs - Industrial & Municipal*

Industry Certifications

- *University of Southern California – Foundation for Cross Connection Control and Hydraulic Research* - ***Cross Connection Control Program Specialist***
- *University of Florida TREEO Center –* ***Cross-Connection Control Management***
- *University of Florida TREEO Center –* ***Cross-Connection Control Ordinance & Organization***
- *University of Florida TREEO Center –* ***Cross-Connection Control Surveyor***
- *University of Florida TREEO Center –* ***Backflow Prevention Assembly Testing***
- *University of Florida – TREEO Center* ***– Train the Trainer***
- *American Society of Sanitation Engineers –* ***Backflow Prevention Assembly Testing***

- *American Society of Sanitation Engineers – **Cross Connection Control Surveyor***

Teaching & Training Experience

- *Maryland Plumbing & Mechanical Inspectors Association*
- *States of Florida, Michigan, Ohio, Illinois, Wisconsin, Maryland, Delaware, Virginia, Pennsylvania, & West Virginia Regulatory/Primacy Agencies*
- *AWWA National Cross Connection Control Programs*
- *ASSE National Cross Connection Control Programs*
- *National Rural Water Association*
- *Florida, Michigan, Wisconsin, Ohio, Illinois, Delaware, Maryland, Pennsylvania, Virginia & West Virginia Rural Water Associations*
- *University of Florida TREEO Center*
- *United States Environmental Protection Agency*

Technical Writings

- ***State of Michigan Cross Connection Control Rules Manual**, Fourth Edition, October 2008*
- ***IPAMO DW & BF – Drinking Water & Backflow**, Volume 29, Number 4 – April 2012*

  Confused About Backflow Jurisdiction?
- ***ASSE Plumbing Standards** – April – June 2007, Cross Connection Control –*

  Understanding the Safe Drinking Water Act
- ***AWWA M14 Manual, Recommended Practices for Backflow Prevention and Cross-Connection Control**, Currently the Chair of the National AWWA Sub-Committee that is rewriting/reviewing the M-14 Manual*

Active member of the following Organizations

- *Maryland Plumbing & Mechanical Inspectors Association (MPMIA)*
- *Maryland Rural Water Association (MRWA)*
- *Chesapeake Section (AWWA)*
- *Water & Wastewater Operators Association (WWOA) - **State of Maryland Trustee***
- *Delaware Rural Water Association (DRWA)*
- *Virginia Section (AWWA)*
- *Virginia Rural Water Association (VRWA)*
- *American Water Works Association (AWWA)-**Vice Chair National Committee for Cross Connection Control***
- *National Rural Water Association (NRWA)*
- *American Backflow Prevention Association (ABPA)*

- *American Society of Sanitary Engineers – (ASSE)*

Honors & Awards

- *First recipient of State of Maryland Environmental Excellence Award*
- *Testified before Untied States Congress about key drinking water issues on two separate occasions.*
- *Recipient of the National ASSE Wylie W. Mitchell Award for the most outstanding presentation at the ASSE National Edward J. Zimmer Technical Conference - 2006*
- *WWOA – 2010 Distinguished Service Award in Water Distribution*
- *WWOA – 2012 Stanley Kappe Training Award*
- *Maryland Rural Water Association Trainer of the Year – 2011*

Paul Patterson
Municipal Division Operations

Mr. Patterson has been with HDI since 2004 and is responsible for overseeing operations of over 90 Cross Connection Control Programs in Delaware, Florida, Maryland, Michigan and Virginia. He also conducts training in Backflow Prevention and Cross Connection Control for the Michigan Department of Environmental Quality, Michigan Rural Water Association and Delaware Rural Water Association. Prior to HDI, Mr. Patterson was a member of the United States Air Force where he assisted in the implementation of a Cross Connection Control Program at a stateside installation and was involved in numerous construction projects worldwide. Mr. Patterson has over 18 years' experience in plumbing, water distribution, cross connection control and backflow prevention. In addition to his extensive experience Mr. Patterson has also held the following certifications through his career:

State of Nevada

- Water Distribution Operator
- Journeyman Plumbers License – Clark County
- CAL/NV AWWA Backflow Prevention Assembly Tester

University of Florida – TREEO Center

- Cross-connection Control Program Manager
- Cross-connection Control Ordinance & Organization
- Cross-connection Control Survey & Inspection
- Cross-connection Control Backflow Prevention Testing

American Society of Sanitary Engineering

- Cross-Connection Control Backflow Prevention Testing
- Cross-Connection Control Backflow Prevention Assembly Repair
- Backflow Prevention Program Administrator
- Instructor/Proctor – Backflow Prevention Assembly Tester Course
- Instructor/Proctor – Cross Connection Control Surveyor Course
- Instructor/Proctor – Backflow Prevention Program Administrator Course

State of Virginia

- Commercial Plumbing Inspector
- Backflow Prevention Device Worker

International Code Council

- Commercial Plumbing Inspector

Mark Kneibel
Director Municipal Division

Mr. Kneibel joined HDI in July 2011 after working with the City of Wyoming, MI for over 25 years. He holds many licenses and certifications in the water industry and is very active in the Plumbing and Backflow Prevention association communities. Mr. Kneibel has over twenty five years' experience with municipal water and wastewater treatment facilities and developing and implementation of cross-connection control programs for municipalities. Mr. Kneibel has the following certifications, training and experience:

State of Michigan Industry Certifications

S-1 Waterworks System Operator, I.D. #5344
Journeyman Plumber, License #8214718
Plumbing Inspector, Registration #004035
Backflow Prevention Assembly Tester, Certification #95-221
Class D - Wastewater License

Professional Experience

Journeyman Plumber - 30 years
Utility Wastewater Maintenance - 7 years
Cross Connection Inspector - 20 years
Certified Backflow Assembly Tester - 22years
Water Meter Shop Foreman - 10 years
Distribution Operator/Water Quality Investigator - 18 years

Active Member of following Organizations

American Water Works Association (AWWA) - M 14 Manual Committee
American Society of Sanitation Engineering ASSE)
Michigan Rural Water Association (MRWA)
Michigan Plumbing Inspectors Form

Honors

Past President, Michigan Plumbing Inspectors Forum

Technical Writings

State of Michigan Cross Connection Control Rules Manual, Fourth Edition, October 2008

Town of Leesburg Cross Connection Control Program Audit

Town of Leesburg -Audit Job Number # 6998

Executive Summary

The Town of Leesburg formally adopted Resolution No. 77-208 on November 23rd, 1977. Resolution No. 77-208 authorized an agreement with the County of Loudoun to provide a cross connection control program to include inspection services and testing of backflow prevention assemblies. Ordinance No. 86-0-6 was adopted on February 12th, 1986 Amending Chapter 19, Article IV of the Town Code regarding Cross Connection Control and Backflow Prevention.

The Town of Leesburg Cross Connection Control (CCC) Program Audit began in December, 2012. Since that time, Hydro Designs (HDI) staff has reviewed the Town of Leesburg written CCC Plan and Ordinance. It does appear as though both "isolation" and "containment" hazards have been addressed by this program. "Containment" is the installation of a backflow prevention device or assembly between the facility and public water distribution system. Containment assures there is no chance for water of questionable quality to leave the facility and enter the public water distribution system. "Isolation" refers to point of use protection within a facility that is necessary to ensure the facility's internal potable water distribution system is protected against backflow.

In order to maintain the integrity of the Town of Leesburg's public water supply the established formal program should be maintained by the Town of Leesburg and should consist of on-going surveys, backflow prevention assembly testing, backflow prevention device replacement, documentation of all program data, public education and training.

After reviewing all documents provided by the Town of Leesburg, HDI is making the following program recommendations:

Cross Connection Control Ordinance NO: 2009-O-012 July 2009:

1. **Section 19-55 –** Remove reference to BOCA Plumbing Code.
2. **Section 19-55** - Insert the proper language and current code references
3. **Section 19-58 (a)** – Insert ASSE numbers as reference after double check valve (ASSE 1015) and dual check (ASSE 1024).
4. **Section 19-58(b) –** Replace reduced pressure zone with Reduced Pressure Backflow Prevention Assembly and insert ASSE number as reference (1013).
5. **Add Section for fine for non-compliance –** In some instances it may be impractical to discontinue service. In this case a fee structure for failure to comply with program requirements may be more appropriate. For instance; "That any person or customer found guilty of violating any of the provisions of this ordinance or any written order of the (name of inspection agency or name of water utility), in pursuance thereof, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ($) nor more than ($) for each violation. Each day upon which a violation of the provisions of this act shall occur shall be deemed a separate and additional violation for the purpose of this ordinance".

Town of Leesburg – Cross Connection Control and Backflow Prevention Program:

1. **Section V (3)** – This item deals with consumer responsibilities and may be more appropriate in Section VI of the written plan.
2. **Section V (4) and Section XIV (1)** – Both of these sections refer to annual assessments (surveys). HDI recommends all connections deemed high hazard should be assessed (surveyed) annually. All low hazard connections could be re-assessed less frequently. Our recommendation for re-assessment of low hazard connections would be every three (3) to five (5) years or if the connection changes use/occupancy, in which case it should be re-assessed immediately. Commercial facilities that have Dual Checks (ASSE 1024) installed as containment should be re-assessed at a minimum every three (3) years.
3. **Section V (9)** – Insert ASSE #1015 in reference to double check valve assembly.
4. **Section VI** – Recommend language requiring all dual checks (ASSE 1024) installed as containment be overhauled or replaced no less than once every three (3) to five (5) years.
5. **Section VII (2)** – Annual calibration of test kits is referenced. Change "calibration" to "checked for accuracy". Only if the test kit does not meet the requirements of the annual check would it need to be calibrated. The test kit must be sent back to the manufacture for calibration**.**
6. **Section IX (2) –** Delete Fire Service Systems. Fire Service Systems should be inspected and protection devices should be determined based on degree of hazard of each individual system and in accordance with the Virginia Statewide Building Code (Plumbing).
7. **Section XI (1) –** Pressure Vacuum Breakers are typically not appropriate for "containment". Insert ASSE numbers as reference for all assemblies in this section.
8. **Section XI (3) –** Include ASSE standards as acceptable assemblies.
9. **Section XII (D) –** Include ASSE testing procedures at a minimum. Recommendation would be to replace reference to USC with ASSE procedures as adopted by the Virginia Uniform Statewide Building Code (Plumbing).
10. **Section XII –** Add requirement for all testers to attend an annual testers meeting and register with the Town of Leesburg in order to be included on the approved testers list.
11. **Section XII (B) –** References only containment assemblies. All backflow prevention assemblies should be tested annually. Re-word recommendation "All backflow prevention assemblies and separations shall be tested and/or inspected immediately upon installation, upon repair or relocation and at least annually. More frequent testing and/or inspection may be required at the discretion of the utilities director.
12. **Section XIV –** Remove all references to "moderate" degree of hazard in definitions and include ASSE numbers as reference for all defined assemblies.
13. **Table 1 (Low Hazard) –** States that low hazard cross connections are not subject to backsiphonage. Delete this statement, many low hazard cross connections are subject to both backpressure and backsiphonage.
14. **Appendix A –** This table needs to be updated to reflect the most current version of the Virginia Uniform Statewide Building Code (Plumbing). It is also recommended to insert the ASSE numbers for each backflow prevention assembly or device listed in the table.
15. **Appendix A, Section 10 –** ASSE 1032 devices are no longer approved by Virginia Uniform Statewide Building Code (Plumbing). Update your information to reflect the use of ASSE 1022.
16. **Appendix B (Water Hauling Truck) –** Require the installation of RPZ on all hydrant meters.
17. **Appendix B (Carbonated Beverage Dispensers) –** There is no need for the installation of an ASSE 1012 on the supply. The ASSE 1022 device on the pump is sufficient and proper protection.
18. **Appendix C (Inspection Form) –** Include the following information: Meter size, meter type, service size, service type, bypass information, hazard level, inspection frequency, and presence of low pressure cut off switch and set point.
19. **Appendix C (Test Report) –** Include information or a line item for low pressure cutoff switches.

20. **General Recommendations:**

a. Throughout the document a reference is made to install RPZ's a minimum of four (4) feet above the floor/ground. The minimum height requirement should be 12" above grade measured from the relief valve opening point. All backflow prevention assemblies and devices should be install per ASSE Standards as referenced Virginia Uniform Statewide Building Code (Plumbing)
b. References to double gated – double check valves should be removed. Reference the current ASSE Standard for double check valve assemblies. This wording is more in line with industry standards.
c. Require ASSE 1015 Double Check Valve Assembly at a minimum for containment of all low hazard commercial facilities.
d. Establish specific written program requirements/certifications/standards for backflow prevention assembly testers. Example: "All testers are to be ASSE Certified".
e. Insert new sections to the plan to incorporate the following information:
    i. **New service and new construction inspections/responsibilities**
    ii. **Develop Survey Protocol and Procedures**
    iii. **Emergency Response/Backflow Incident Response Plan**
    iv. **Develop Re-Surveys Schedule**
    v. **Backflow Prevention Device Replacement Program**
    vi. **Public Education**
    vii. **Budgeting/Funding Plan for CCC Program**
    viii. **Annual Program Report to Council/Mayor**
    ix. **Protocol, Notification and Testing Procedures for low pressure cutoff switches**

Suggested Action Plan and Cross Connection Control Program Recommendations

1. **CCC Plan –** Update ordinance with current standards and information.

2. **CCC Written Program (Plan) –** The current CCC Plan is very thorough and detailed. HDI would recommend updating the plan to ensure it meets all current requirements and implementing the recommendations listed in this report. Furthermore, we recommend that the current CCC Plan be reviewed and reformatted to reflect and include the new current standards and up to date requirements for municipal cross connection control programs. It may be in the Town of Leesburg's best interest to seek professional assistance with updating of the current cross connection control plan and ordinance.

3. **Lawn Sprinkler Systems –** If a lawn sprinkler system is longer going to be used and the system has a backflow prevention assembly connected one of two things should be required. Test the backflow prevention assembly annually as required or remove backflow prevention assembly from service and cut and permanently cap water line piping. The owner of the system should sign a memorandum of understanding stating that if the lawn sprinkling system is returned to service the owner must notify the Town of Leesburg and test the backflow prevention assembly immediately or risk a noncompliance penalty.

4. **Test Notices -** All seasonal testing notices for backflow prevention assemblies should be sent out by April 30th of each year. (i.e. lawn sprinkling systems)

5. **Education/Training –** Continued efforts should be made to educate the Town staff directly involved with the cross connection control program. Employees should participate in professional cross connection control training and educational opportunities provided by organizations specializing in cross connection control training in order to keep up to date with current regulations and industry standards. Get staff members ASSE certified.