



Division of Drinking and Ground Waters Response to Comments

Draft Amendments to Backflow Prevention Rules

NOTE: Rule 3745-9-05, Well construction, was removed from this package after the first Interested Party Review and moved to the Well Standards rules package.

3745-91-12, Certification by political subdivisions and investor-owned public utilities

3745-95-02, Backflow prevention and cross-connection control

3745-95-03, Surveys and investigations

3745-95-06, Backflow prevention devices

3745-96-01, Applicability and definitions

3745-96-04, Report delivery and recordkeeping

Ohio EPA Manual on Backflow Prevention and Cross Connection Control

Agency Contact for this Package

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Ohio EPA issued public notice and requested interested party comments on draft rules in Chapters 3745-91, 3745-95 and 3745-96 of the Ohio Administrative Code (OAC) and for revisions to the Manual that clarifies rule for the period of March 15, 2013 to April 26, 2013. This document summarizes the comments and questions received during the interested party public comment period.

Ohio EPA reviewed and considered all comments received during the interested party comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

General Comments

Comment 1: “To protect our water system, BCWS’ current backflow regulations require a reduced pressure (1013) assembly for industrial and commercial connections and a dual check device for residential connections. Older commercial or industrial connections that are found to not meet the required backflow prevention devices are brought up to current code based on

the degree of hazard. Generally, these older locations already have some type of backflow prevention in the meter pit, although it may be a non-testable device. Residential customers with lawn sprinklers and other isolation assemblies/devices within our service area are monitored by the Butler County Board of Health under the jurisdiction of the Ohio Department of Commerce.

As outlined above, BCWS does have an effective Backflow Program in place however significant staffing cuts in recent years have limited the time BCWS has available to manage this program. It is important to BCWS that any changes to the backflow regulations allow flexibility so that we may continue to implement an effective backflow program with existing staff levels.” (Julie Frazier, Butler County Water and Sewer Department or BCWSD)

Response 1: Ohio EPA considered staffing limitations and attempted to limit additional burden in the revisions to the draft rules while still achieving program objectives by adding alternatives to conducting investigations at all premises.

Comment 2: “The OAC has included, by reference, a revision of the backflow prevention manual in 3745-95-02(C) to clarify many important terms and factors associated with backflow prevention and cross connections. While I understand this can then be updated more frequently without first amending the OAC, I think it is important to first revise the OAC to the point that makes it a more comprehensive and clear document that also agrees with the manual. This revision really does not accomplish this by relying so heavily on the manual.

For example: the revised OAC does not differentiate between or provide a definition for the terms “device” and “assembly” although these are used frequently and apparently incorrectly when looking up the terms in the manual; the OAC makes no attempt to clarify the difference between “containment” backflow assemblies or “isolation” backflow assemblies or the difference in responsibility for these backflow assemblies and devices that are in different locations, with different purposes and different responsible authorities.

While the rule in 3745-95-04 does state that the device is installed on “each service line”, it never uses the common terms “containment” or “isolation” and relies heavily on the use of the manual to clarify these many important terms and conditions associated with backflow prevention and cross connections.

The term “supplier of water” is defined in 3745-95-01 as the “owner or operator” of a public water supply. The OAC does not clarify anywhere in 3745-95 who the individual in charge of the backflow and cross connection program is. The manual, however, states that “The individual in charge of a backflow prevention program at a public water system should either be the “operator of record” or under the authority of the “operator of record”. As the “operator of record” for my city’s distribution system, I have been told by the OEPA that I am responsible for the backflow prevention program, but according to my city’s current organization have no authority for the program or the person presently managing the program. Neither the OAC nor the manual clarify this requirement for our organization while OAC 3745-7 states that the “operator of record” is the individual identified as being responsible for the technical operation of a public water system. 3745-7 seems to make it “mandatory” for the OR to be responsible for the technical operation of the system, including backflow prevention, service lines and anything connected to the public water supply, while 3745-95 is vague and the manual uses the permissive term, “should”. This puts an “operator of record” in the difficult position of being told they are responsible while, at least in my case, not having any authority. The rules do not agree to a degree of clarifying this for a city’s organization and our city continues to allow a person with no certification to be responsible for and have authority over backflow prevention and service lines without supervision from the “operator of record”. This has been an ongoing problem with my employer for several years now.” (Judy Scott, City of Mount Vernon)

Response 2: Ohio EPA has taken these comments into consideration and revised “backflow prevention device” to “backflow preventer” in OAC rule 3745-95-01, as well as added a definition for “containment principle backflow preventer” to address the inconsistencies mentioned. In addition, to ensure consistency with duties of the operator of record discovered between the rules in Chapter 3745-7 of the OAC, this provision in the Backflow Prevention and Cross-Connection Control manual has been changed from “should” to a “must”.

Comment 3: “On March 15, 2013 the Ohio EPA published a Public Notice for Request for Comment on Draft Rules which included proposed revisions to Chapter 3745-95 rules. These revisions include incorporating the frequency for periodic re-survey and investigation of water use practices; and adding a rule-by-reference to the Ohio EPA Backflow Prevention and Cross-Connection Control manual.

Portions of Ohio EPA's draft rule changes to 3745-95-02, 3745-95-03 and 3745-95-06 expands existing regulations on public water systems (PWS) suppliers of water in regard to backflow prevention and cross-connection control.

The federal Safe Drinking Water Act (SDWA) does not require public water systems to establish and maintain backflow prevention or a cross-connection control program. However, Ohio EPA's draft rules will mandate that Ohio's public water systems develop, maintain and operate a cross backflow prevention and cross-connection control program - at a level not required by federal law.

These draft rules will significantly increase costs to water consumers (including residential and commercial and industrial businesses), and publicly and privately owned public water system operators in Ohio.

The CSI Business Impact Analysis acknowledges that the proposed rules do not specifically implement a federal requirement. In fact, the draft rules exceed the US EPA's published Cross-Connection Control Manual suggestions for addressing Cross-Connection Control issues.

Aqua Ohio has serious concerns with the practical implementation of the rules as drafted, the cost of implementation of the draft rules, and the benefit to public water system water consumers." (Thomas Schwing, Aqua Ohio)

Response 3: Ohio EPA has regulatory authority through both the Ohio Revised Code (ORC) 6109 and the safe drinking water act to protect the integrity of the drinking water supply and institute such rules to ensure these program requirements are met. Backflow prevention and cross-connection control has universally been accepted to be a necessary component of this effort.

The intent of the rule changes was not to expand existing regulations on public water systems (PWS) in regard to backflow prevention and cross-connection control, but to provide clarification for the existing regulations as to expectations and program objectives and measures because compliance with the existing regulations as written is found at varying degrees across the State. In an attempt to provide a consistent program measurement, these rule changes were incorporated. In addition the manual, which further clarifies program needs, has been updated.

Ohio EPA has taken into account USEPA's document and has assigned program measurements, which are in line with the recommendations made in the USEPA manual. Additionally, the cost benefit analysis was considered during the rule making process. The most recent revisions made to the draft survey and investigations rule (OAC 3745-95-03) should address some of the concerns you have outlined regarding cost, practical implementation and benefit by providing alternative methods for collecting information from all premises, thereby reducing the number of investigations performed.

3745-95-02

Comment 4: "In the note at the bottom of the rule, the date for the fourth edition of the Backflow and Cross Connection Control manual should be updated to 2013 in order to match the revision in 3745-95-02(C)." (Julie Frazier, BCWS)

Response 4: The proposed reference in rule to the manual has been removed for this rule filing.

Comment 5: "Draft rule 3745-95-02 (C) mandates the development and implementation of an adequate backflow prevention and cross-connection control program for all Ohio public water systems. The draft rule also adopts Ohio EPA's manual by rule.

Requiring a public water system backflow prevention and cross connection control program is an acceptable goal. However dictating means and methods for developing, operating and maintaining the program removes the flexibility and ability of the public water system to develop a program which addresses its specific needs. Dictating means and methods is also inconsistent with the American Water Works Association's policy statement on cross connections.

This draft rule as proposed will place a significant cost on public water systems which will ultimately be borne by water consumers and businesses. The draft rule requirement specifies means and methods of performance rather than allowing a performance outcome program.

The adoption of Ohio EPA's manual removes flexibility and ignores the numerous resources that exist as guidance documents to address backflow flow and cross-connection control. In fact, USEPA has published a Cross-Connection Control Manual (EPA816-R-03-002; February 2003) to help systems identify scenarios that are susceptible to contamination.

The manual also outlines several backflow prevention techniques.

The adjective "adequate" does not have defined criteria for evaluation and is subject to agency's the subjective interpretation.

Aqua Ohio recommends that the draft rules be rewritten as follows:

1) Draft rule 3745-95-02 (C) - If other draft rules are changed as recommended, then modify as follows:

"A public water system shall develop and implement a backflow prevention and cross-connection control program meeting the requirements of this chapter"

2) Ohio EPA's manual entitled "Backflow Prevention and Cross-Connection Control (2013)" *not* be adopted by rule. It should be made available by the agency as a technical reference document but not as a rule requiring compliance with its narrative." (Thomas Schwing, Aqua Ohio)

Response 5: Ohio EPA took the AWWA document into account, as well as various other documents, which have been included in the bibliography of the manual. Program measurements to account for the recommendations made in this literature have been assigned in order to measure progress or achievement made in a PWSs backflow program. Ohio EPA has attempted to assign these measurements in the rules and manual, though the manual is no longer proposed to be incorporated by reference. Adequacy is measured through these program goals. Compliance with program measures is not flexible since these are requirements in rule. However, a significant portion of how the water purveyor implements its program and achieves these measurements has been revised in the draft rule, allowing the flexibility to remain and reducing the burden to the PWS.

Comment 6: In order to eliminate duplicate enforcement efforts and conflicting rules, its recommend that your rules for the suppliers and your manual focus only on containment. In turn, the rules of the Ohio Department of Commerce, Board of Building Standards will be amended to focus on isolation. (Deborah D. Ohler, P.E., Staff Engineer Ohio Board of Building Standards or Ohio BBS)

Response 6: Ohio EPA believes a comprehensive document on backflow prevention and cross-connection control is important. The

requirements outlined in the backflow prevention and cross-connection control manual only refer to those in which Ohio EPA and the supplier of water have jurisdiction over by rule. However, in order to address ongoing concerns, Ohio EPA has removed from rule the manual as incorporation by reference. The manual continues to serve as guidance in applying the regulatory requirements and implementing an effective backflow prevention program.

3745-95-03

Comment 7: “The City of Columbus Department of Public Utilities submits the following comments on Ohio EPA's draft backflow prevention rules. Columbus' comments address the survey and investigation requirements of Draft OAC 3745-95-03. In Columbus' view these requirements are unduly burdensome and costly and will yield information of questionable accuracy and value.” (Robert E. Ashton, City of Columbus)

Response 7: Ohio EPA has taken into consideration concerns regarding staffing limitations and budgetary constraints, and revised the rule in attempt to limit additional burden while still achieving program objectives. Surveys and investigations have been an integral component of the backflow prevention rules since first established. Additional costs that arise because the purveyor of water will now be complying with the rule intent is not a new cost, but one more clearly defined since this rule change now sets measures for these requirements. Surveys of residential customers was identified as an area which necessitated a more feasible solution, therefore, the rule was revised to include an exception regarding residential customers. This exception will not require inspections of residential premises as long as the purveyor of water has an ongoing educational campaign on backflow hazards.

See draft changes to OAC rule 3745-95-03, revised in cooperation with a stakeholder group which formed following the end of the first interested party review period to address comments to the drafted rules. For additional information on this stakeholder group, see end of comments.

Comment 8: “BCWS agrees that the proposed changes in 3745-95-03(A) would provide for a detailed program that may be easily implemented by some water systems, however the proposed rule changes as written would be cost prohibitive and administratively burdensome for some systems such as ours.” (Julie Frazier, BCWS)

Response 8: See Response # 7.

Comment 9: “The City of Westerville Water Division submits the following comments on Ohio EPA’s draft backflow prevention rules, OAC 3745-95-03, for your consideration. We believe the intent of these proposed changes is to further define the frequencies of surveys and investigation, however, as proposed they will unduly overload our water utility’s resources, which will contribute to increased water rates without adding any significant protection to our water quality.” (Richard Lorenz, City of Westerville)

Response 9: See Response # 7.

Comment 10: “Draft rule 3745-95-03(A)(2) requires the supplier of water to conduct a survey 'consisting of a paper questionnaire' and 'a physical onsite investigation of the premises by the supplier of water. This requirement is an increased cost to consumers.

Assuming a 45 minute time requirement per survey and on site investigation (includes setting up appointments, missed appointments, travel, paperwork, time on site, report generation, and data filing) this proposed rule will cost the individual water consumer approximately \$42 (hour pay rate of \$30 plus 40% indirect labor cost and overhead) every five years.

More significant is the cost to the supplier of water who will be required to provide staffing, filing and administrative support for the operation of the proposed requirement. Assuming a water supplier has 100,000 water customers, this mandate represents an additional 15,000 hours of work per year required to comply with this new mandate (20,000 customer surveys per year over 5 years at .75 hrs/survey). Assuming a direct, indirect and overhead labor cost of \$42/hour, this additional 15,000 hours required to comply with this new Ohio EPA mandate represents an annual cost of \$630,000.” (Thomas Schwing, Aqua Ohio)

Response 10: See Response # 7.

Comment 11: [OAC 3745-95-03(A)(1)(a)] “The definition of "major plumbing modification" is overly broad and could require Columbus to survey and investigate over 10,000 residential properties each year. Accordingly, Columbus requests that "service line replacement or repair" and "water meter replacement or repair" be stricken from the definition of major plumbing modification in Draft OAC 3745-95-03(1)(a). Columbus does not have the

staff resources to conduct surveys and investigations of "major plumbing modifications" as currently defined in the draft rule. Significant additional staffing would be required to meet the requirements in the draft rule.

Propose the following change:

(A)(1)(a) A major plumbing modification. Major plumbing modifications include, but are not limited to, ~~service line replacement or repair~~, the installation of a new or additional service line, ~~meter replacement or repair~~, and significant interior plumbing changes that could affect the backflow prevention device required." (Robert E. Ashton, City of Columbus)

Response 11: The trigger to conduct a survey or investigation based on a significant plumbing modification was removed from the proposed rule revisions. Instead, language which addresses triggers that inform of such changes provided from notification by local plumbing authorities and other licensing agencies is used. Cooperation with local plumbing and licensing agencies is highly encouraged so that plumbing modifications that may result in changes in water use practices and hazards are satisfactorily addressed for the water purveyor. Ohio EPA is aware that enforcement of residential building code regarding plumbing is not found at the local level in some areas of the State. However, it is our understanding that lack of enforcement does not relieve the owner of the residential plumbing from having to comply with the State plumbing code. If lack of oversight exists, this may be even more reason for the purveyor of water to conduct periodic surveys or investigations to ensure the PWS is protected from hazards.

The water purveyor must be able to assess the degree of hazard at the service connection. To achieve this objective, it's necessary to have access to plumbing in order to determine water use practices that represent hazards. This effort does not mean that the purveyor of water is responsible for ensuring the consumer's internal plumbing system is safe from backflow hazards, but that the PWS is protected. For this reason, internal plumbing inspection is still necessary to ensure isolation backflow prevention is in place to protect the consumer from cross-connection and backflow risks within the consumer's plumbing system. Ohio EPA, in joint effort with the Ohio Department of Commerce, Board of Building Standards, attempted to delineate the roles and jurisdiction in regard to responsibility of the water purveyor and the plumbing authorities.

In result of this effort, changes to OAC rule 3745-95-01 to include a definition for 'containment principle backflow preventer' and its use in subsequent sections of OAC Chapter 3745-95, as well as discussion of roles and responsibilities in the manual, were made. The water purveyor does in limited circumstances have purview over backflow preventers installed at a location other than immediately after the meter, as outlined in rule 3745-95-05 and as described in the manual.

The trigger to conduct an investigation when there is a request for an additional meter or a larger meter, remains in the rule as this is within the realm of the water purveyor's jurisdiction. This type of request usually means a change in water use practice has occurred. A replacement meter of like-kind replacement does not necessarily warrant an investigation. However, this type of work may provide an opportunity to fulfill the periodic survey or investigation requirement of this rule.

Comment 12: [3745-95-03(A)(1)(a) and (b)] "BCWS currently reviews the backflow devices required when we are made aware of any potential new backflow or cross-connection situations or changes such as a new or additional service line in an existing commercial or industrial facility site. BCWS is opposed to the proposed language in 3745-95-03(A)(1)(a) requiring a survey and or an on-site investigation for existing connections each time there are service line and water meter repairs or replacements.

Using service line or water meter work done on an existing connection as a trigger for a survey as proposed in the draft rule changes would necessitate additional administrative and or onsite work that would provide little extra benefit to our system under our current program. BCWS' backflow regulations require the backflow device to be located on the customer's side of the meter. Since BCWS' service line and meter replacements or repair work is done prior to any backflow assemblies/devices, this should not affect the type of backflow device required for the existing building. Plumbing modifications to the service line after the meter (customer's side) would still be covered under the applicable backflow assembly or device requirements in accordance with BCWS and/or the Butler County Board of Health current backflow regulations. Any service line that has repairs done and is found to not meet our current regulations is brought up to our code at the time of the repair depending on degree of hazard. BCWS performed 694 service line replacements last year and we normally perform between 50 and 100 meter replacements

or repairs per year. BCWS does not have enough staff to do a duplicative backflow survey/inspection at each of these sites for work that will not affect the type of backflow device already required by our regulations and the plumbing codes.

The proposed rule changes in 3745-95-03(A)(1)(a) list "significant interior plumbing changes" as a trigger for a survey. Requirements for any significant interior plumbing modifications, including any backflow devices needed, are under the jurisdiction of the Ohio Department of Commerce. In Butler County, this program is delegated to the Butler County Board of Health who oversees the plumbing permit process. Although BCWS works with the Butler County Board of Health in reviewing backflow requirements for specific projects in our service area, we believe that jurisdiction and responsibility for internal plumbing changes should remain under the purview of the Ohio Department of Commerce and it should not be necessary for water systems to do a duplicative survey of the internal plumbing requirements for backflow under Ohio EPA rules." (Julie Frazier, BCWS)

Response 12: See Response # 11.

Comment 13: [Re: a major plumbing modification] "The proposed rule suggests that a replacement (in kind) of an existing meter; or the replacement or repair of an (in kind) service line is a "major plumbing modification". In this example, there is no real "modification" of any part of the plumbing. There appears to be no reasonable cause for conducting or causing to be conducted a survey and investigation in this scenario. In addition, this implies it is required for every service connection when this occurs; it does not differentiate between connections that are currently protected with backflow assemblies or connections that have been surveyed (with paper questionnaires) and determined not to need them. If it's been determined an assembly is not needed and/or the replacement is "in kind" the survey and investigation seems unnecessary.

A "new service line, an additional service line or change in the size of the service line or meter", however, **may** be an indicator of "major plumbing modification" or "significant interior plumbing changes". Neither the City of Mount Vernon nor Knox County has a building or plumbing code. The City would likely have knowledge when a meter size is changed or a service line is upsized or added and a new (paper questionnaire or) survey could be done. If these items were **not** being changed by the home owner or business, however, the city would have neither

knowledge of potential “significant interior plumbing changes”, nor any authority over such interior changes.

In addition, it is not clear to the reader what constitutes a “significant interior plumbing charge” as opposed to an “insignificant interior plumbing change”, and what therefore triggers the survey and investigation. If one is to rely on the previous sentence that a simple in kind service line or meter replacement is “major”, then potentially every interior plumbing change is also “significant”. Please clarify. Should there be a definition for “major” and “significant”?

Since there is no plumbing code here, there is no requirement to submit plans for interior plumbing changes, no one to review said plans, and no standard of approval for significant or insignificant changes, for such changes for residential homes or multi-unit residences of up to three units. The home owner would need to be advised (per state law, not local code) of what constitutes a “significant plumbing change”; when a (physical) survey is required; when it isn’t; and bear the cost of paying a plumber (authorized representative) certified in conducting cross connection surveys to conduct a physical survey and investigation and submit the survey to the municipality. Not all local plumbers are certified in back flow and those plumbers would be subject to a loss of business in these cases. It is important, therefore, to differentiate between what is significant and what isn’t, not only for the city, but for the local plumbers.

In addition, the rules don’t differentiate between what is the responsibility of the municipality and what is the responsibility of the Ohio Department of Commerce, while the manual and cross connection courses emphasize these differences. It is my understanding that for commercial and industrial applications, as well as four or more multi-unit residential complexes, the Ohio Department of Commerce and the plumbing industry has authority over the review of interior plumbing installations, and presumably “significant interior plumbing changes”, as well as isolation assemblies and devices within these buildings. The survey and investigation conducted or caused by the municipality only has the goal of determining “whether there are actual or potential cross connections in the consumer’s water system through which contaminants or pollutants could backflow into a public water system” {3745-94-03 (A)}. The DOC manual indicates that plumbing inspection authorities have the responsibility of inspecting a consumer’s distribution system. Is there agreement between the OEPA and the DOC of what constitutes a “significant interior plumbing change” and what

therefore requires an additional physical survey and investigation between annual surveys and tests? A municipality should not have to try to determine what the OEPA means by “significant” and police or educate the plumbing community and cannot overstep the boundaries set by the state DOC. Since the city has no jurisdiction in these facilities, except to cause a survey annually to determine the degree of hazard and to require the test of containment assemblies, the certified plumber would need to know to review the interior plumbing changes and submit a copy of the survey to the City just as with annual surveys and tests.

In addition, while it is never clearly stated anywhere, the DOC has jurisdiction over internal plumbing and isolation devices in certain types of buildings. OEPA and municipalities have no jurisdiction over these devices or assemblies, yet this is not mentioned in these rules, while as mentioned above, the supplier of water is now being made responsible for determining when ‘significant interior plumbing changes’ have occurred.”
(Judy Stott, Mt. Vernon)

Response 13: See Response # 11.

Comment 14: “Specifically, in (A) (1) (a) the requirement for surveys when service lines are replaced or repaired adds burden when there is no reason this would increase the threat for backflow to occur. In most cases, service line repairs are made in response to a leak due to age or improper installation. This event has nothing to do with a change in use and should not trigger an inspection unless the service line size is being increased. The same holds true for a meter repair or replacement, particularly in residential properties.” (Richard Lorenz, Westerville)

Response 14: See Response # 11.

Comment 15: [Re: conducting surveys and investigations] “Practical implementation questions include:
1) How does the supplier of water know when ‘significant’ interior plumbing changes have occurred?
2) What are ‘significant’ plumbing changes? Is the replacement of a simple laundry tub faucet set a ‘significant’ plumbing change?
4) What if water meters not owned by the supplier of water are changed or repaired? Does this trigger a survey and investigation? How is the PWS to know about these events?
5) How does the supplier of water changing and/or repairing their water meter create a potential cross connection that

justifies the expenditure of resources to conduct a survey and investigation? ” (Thomas Schwinn, Aqua Ohio)

Response 15: See Response # 11.

Comment 16: [Re: 3745-95-03(A)(1)(a)] “When interior plumbing modifications occur, the owner is required to obtain an approval in accordance with the Ohio Plumbing Code adopted by the Ohio Board of Building Standards. As a result, either the local building department, the local health department or the Ohio Department of Commerce, Division of Industrial Compliance, Plumbing Section would be required to perform a plan review and inspection to ensure that cross connections are not created. For nonresidential buildings this seems like a duplication of enforcement. For residential buildings, either the local building department or the local health department enforces the Ohio Plumbing Code adopted by the OBBS. There are, however, areas of the state where local governments opt to not create a building department and there may not be a local health department to enforce the plumbing code.”

As discussed in stakeholder’s meetings, “in order to eliminate duplicate enforcement efforts and conflicting rules, we recommend that your rules for the suppliers focus only on containment. In turn, the rules of the BBS will be amended to focus on isolation.” (Deborah Ohler, Ohio BBS)

Response 16: See Response # 11.

Comment 17: “Columbus proposes striking paragraph OAC 3745-95-03(A)(1)(b) in the draft rule. Columbus cannot readily identify a change ownership or a change in the type of business in every case. A change in ownership may in some instances be identified in a billing change, but not in every case. A change in business type can only be identified by an on-site inspection. Again, compliance with the draft rule will be unduly burdensome and costly.” (Robert E. Ashton, City of Columbus)

Response 17: Ohio EPA has removed the triggers referring to change in ownership. A collaborative effort with local licensing authorities is encouraged, such that the PWS is notified of potential changes in water use practices that will likely impact containment at the service connection.

Comment 18: “It is difficult to see how a ‘change in ownership’ of a business (commercial or industrial) should require an additional survey and investigation if there are no changes to the actual water use

practices. It is reasonable, however, to cause to be conducted an additional survey and investigation when there is a change in the actual "business type at commercial and industrial establishments", if the business type also changes any "water use practices". If there is no change in the actual business or water use practices, it would seem appropriate to rely on the annual survey required by said establishment when they have backflow assemblies or devices. Yet as in the above paragraph a City may have authority to enter the building to determine the need for a "containment assembly" but has no authority over internal plumbing changes or isolation devices and assemblies. The city would likely have to enforce the need for a survey and inspection by a certified plumber. Yet the code has no penalty for failure to complete a survey." (Judy Stott, Mt. Vernon)

Response 18: See Response # 17.

Comment 19: "In section (A) (1) (b) we do not see the benefit of surveys at change of ownership particularly in residential properties. We do see the benefit when there is a change of use, but only if the service is not currently protected or is a high hazard business or industrial." (Richard Lorenz, City of Westerville)

Response 19: See Response # 17.

Comment 20: [Re: conducting surveys and investigations] "...practical implementation questions include:
3) How does a water supplier know when property ownership has occurred? There may or may not be an occupancy change at the property." (Thomas Schwing, Aqua Ohio)

Response 20: See Response # 17.

Comment 21: [Re: 3745-95-0(A)(1)(b)] "When change of occupancy occur, the owner is required to obtain an approval in accordance with the Ohio Building Code adopted by the Ohio Board of Building Standards. As a result, either the local building department, the local health department or the Ohio Department of Commerce, Division of Industrial Compliance, Plumbing Section would be required to perform a plumbing plan review and inspection to ensure that cross connections are not created as a result of the change. Again, this seems like a duplication of enforcement.

As discussed in our meeting, in order to eliminate duplicate enforcement efforts and conflicting rules, we recommend that your rules for the suppliers focus only on containment. In turn,

the rules of the BBS will be amended to focus on isolation.”
(Deborah D. Ohler, Ohio BBS)

Response 21: See Response # 17.

Comment 22: [Re: OAC 3745-95-03(A)(2)] “The five-year survey and investigation requirement contained in the draft rule is extremely burdensome and is unlikely to yield accurate data. A significant number of residential users will not complete the survey or will not provide accurate information. Conducting a survey and investigation of over 250,000 accounts every five years will be costly, burdensome, and not possible with Columbus' current staffing levels. Significant additional staffing and other resources will be required to meet this requirement. Any survey and investigation requirement should be limited to commercial, industrial, and institutional users or suppliers of water where more reliable survey responses may be obtained and where backflow prevention is of critical importance.

Proposed Changes to Draft OAC 3745-95-03(A)(2)

Surveys and investigations shall be conducted for all service connections, every five years. At a minimum, a survey consisting of a paper questionnaire completed by a **commercial, industrial or institutional** consumer or supplier of water must be conducted to determine water use practices and level of backflow protection provided as outlined in paragraph (C) of this rule. A physical onsite investigation of the premises by the **commercial, industrial or institutional** supplier of water, in accordance with paragraph (B) of this rule, is warranted whenever a change in water use practices may result in applying a higher level of backflow protection.”
(Robert E. Ashton, City of Columbus)

Response 22: Ohio EPA recognizes the likely cost burden to complete such requirements, and has attempted to address these concerns by offering an alternative to re-surveys or investigations for residential service connections and instead, implementing an educational campaign with the conditions outlined in the draft rule revisions. Paper questionnaires are no longer a minimum requirement to complete surveys.

Ohio EPA's guidance, 'Method to Accomplishing Periodic Surveys and Investigations of Existing Service Connections' that is included in Appendix VI of the Backflow Prevention and Cross-Connection Control Manual 4th edition has been modified to reflect the new rule language. (This manual is no longer incorporated as rule by reference. The manual continues

to serve as guidance in applying the regulatory requirements and implementing an effective backflow prevention program.)

Comment 23: “If BCWS were to be required to individually survey our more than 38,000 water service connections every 5 years, it would mean we would have to accomplish 150 surveys per week which is impossible given our current staffing levels. Using the estimates of a minimum of twenty minutes per survey at a cost of \$30.00 per hour as listed in OEPA's Common Sense Initiative Business Impact Analysis, an additional 12,667 hours of administrative work plus an unknown amount of time for onsite follow-up surveys would be required at a total cost of at least \$380,010 per 5 year cycle (\$76,000 per year). This would require us to recall workers who have been laid off or hire new staff to do this work which we cannot afford at this time.

OEPA's guidance Method to Accomplishing Periodic Surveys and Investigations of Existing Service Connections that is included in Appendix VI of the Backflow Prevention and Cross-Connection Control Manual 4th edition (2)(A)-(C) (draft as posted with the rule changes) suggests systems to do a sampling of active service connections by category and conduct surveys on a subset of connections for each type of user. Surveying a subset of active service connections each year may take more than 5 years to get through all of a water system's connections but it is a much more reasonable approach to ensuring compliance and would be more realistic and manageable for systems to accomplish in a cost effective manner instead of surveying every service connection every 5 years. BCWS also recommends that OEPA allow for other means such as reviewing electronic reports or other easily accessible means or combinations of ways to gather information especially for lower hazard sites such as residential connections. Water systems throughout the country are utilizing technology to control costs, improve operations, and reduce staffing levels; OEPA must recognize this reality and allow systems to employ technological tools to accomplish tasks historically completed by more manual means - including system surveys relative to backflow regulations. Alternatively, if OEPA insists on a required paper-only survey being filled out for each service connection, these should be limited in the rule changes to non-residential connections which represent a higher risk. This would save considerable time and cost if systems must fill out a required paper survey if the proposed rule changes go into effect as written.

To incorporate our suggestions for 3745-95-03 above, and in order to leave some flexibility in the rule for water systems to have a workable program that fits their specific situation, BCWS recommends that OEPA provide an option that allows a water system to use alternative methods or a combination of methods to accomplish the intent of the backflow rules. Such backflow program options could be reviewed and approved during the system's sanitary survey. BCWS suggests that OEPA change the proposed language in 3745-95-03(A) to something similar to:

(A) The supplier of water shall conduct or cause to be conducted periodic surveys and investigations of water use practices within a consumer's premises to determine whether there are actual or potential cross-connections to the consumer's water system through which contaminants or pollutants could backflow into the public water system. *This must be done by having a backflow program that is acceptable to OEPA, or in accordance with the following:*

If OEPA allows some flexibility to how surveys are conducted as suggested in our comments above, the draft guidance Method to Accomplishing Periodic Surveys and Investigations of Existing Service Connections should also be updated to reflect other allowable methods.” (Julie Frazier, BCWS)

Response 23: See Response # 22.

Comment 24: “In section (A) (2) we find the every five year, every service connection survey extremely burdensome due to the sheer numbers involved, the return on the effort and the anticipated compliance level with the requests for this information from the customers, based on our current experiences with annual backflow testing compliance. This requirement should be limited to high hazard/industrial customers and not include residential.” (Richard Lorenz, City of Westerville)

Response 24: See Response # 22.

Comment 25: [Re: surveys and investigations] “It would be problematic to expect that a municipality have the staff to conduct an actual physical investigation or survey of every residence in the city. It would also be problematic to expect every home owner to pay a cross connection/backflow certified plumber to conduct such a physical survey and investigation. Providing a paper questionnaire option for the vast majority of typical residential users is appropriate and affordable for both the municipality and

the residential user. One concern would be how to get people to complete and return the paper questionnaire. Many people would be likely to just not complete it or return it. Unless there is some penalty attached or incentive gained, it is unlikely that every service connection would voluntarily complete such a survey every five years. The city could spend much time and effort trying to track down each and every survey. In addition, many people do not own the home they live in or rent an apartment, while owners are often out of the city or out of the state. Renters would be reluctant to fill out a survey for a place they do not own.” (Judy Scott, City of Mount Vernon)

Response 25: See Response # 22.

Comment 26: [3745-95-03(A)(2)] “BCWS agrees that using paper questionnaires every five years is a thorough way to determine if there is a change in water use practices but it should not be limited by OEPA to be the only minimally acceptable method as proposed in the draft rule, especially for larger water systems. Paper questionnaires are expensive to print and mail and would be burdensome to process and maintain. In addition this does not allow for electronic delivery of some or all surveys as a cost savings option. We estimate our printing and mailing costs would be at least \$16,900 to send a paper survey to each of our service connections. Paper questionnaires have not been effective for us in the past when using them for other areas of our business as very few are ever returned by our customers and we do not have the staff and time to fill out individual paper surveys of all our water connections ourselves.” (Julie Frazier, BCWS)

Response 26: See Response # 22.

Comment 27: [Re: 3745-95-03(A)] “Surveys and investigations is used frequently in cross connection/backflow rules and support material. Most often the terms are used together with the word “and” joining them. The definition section does not provide a definition for either term. It is not clear to the reader if these are the same activity with the terms used interchangeably, or if it is intended that these be two separate and distinct types of activities, both of which need to be conducted or cause(d) to be conducted. Please clarify these terms and their intended meanings. Perhaps a definition should be provided for each.” (Judy Scott, City of Mount Vernon)

Response 27: Ohio EPA has attempted to clarify these terms in how they are used in the rule. When a term is not defined in rule, the definition as found in a standard dictionary is applied.

Comment 28: [Re: 3745-95-03, surveys and investigations] "...the rule requires the completion of said paper questionnaire or physical survey and inspection every five years. 3745-95-08 allows a water supplier "to discontinuewater service wherein a backflow deviceis not installed, tested, or maintained...". There does not appear to be any enforcement mechanism for a consumer's failure to complete a 'survey and investigation' whether it is a paper questionnaire or physical.

The City of Mount Vernon also does not have the staff to follow up on physical surveys and investigations that may be triggered as a result of the paper questionnaire, or to do physical surveys if a resident fails to complete a paper survey. In addition, the city cannot afford the risk of paying for a (mandatory physical) survey and expecting the home owner to repay the city for the survey cost. The city would therefore also be responsible for requiring the home owner to conduct the survey at the home owners cost, using an "authorized representative" or certified plumber. Per above, there does not appear to be any enforcement mechanism in 3745-95 to get a home or business to comply." (Judy Scott, City of Mount Vernon)

Response 28: The survey and investigations draft rule now offers an alternative to conducting surveys or investigations for every service connection, likely to have a hazard, every five years. The draft rule states that the written program must have a mechanism in place to identify and address changes in water use practices that represent, actual or potential, new or increased hazards to the public water system. An alternative, such as cooperation with local licensing agencies to make the PWS aware of changes in water use practices which pose an actual or potential new or increased hazard, can be used. In addition, for residential service connections not likely to have a hazard, implementing an educational campaign with the conditions outlined in the draft rule revisions will meet program objectives. Paper questionnaires are no longer a minimum requirement to complete surveys. In regard to enforcement of the program, if the supplier of water cannot assess the degree of hazard the existing backflow prevention rules allow the PWS to require a containment backflow preventer. If the requirement is not met, the enforcement provisions in 3745-95-08 can be applied.

Comment 29: “Draft rule 3745-95-03 (A)(1) - (2) establishes criteria for when and how surveys and investigations are to be conducted. The draft rule assumes that all public water systems have the same risks and access to third party data.

This new requirement mandates expenditure of money without demonstration of benefit or need. It mandates that ‘surveys and investigations shall be conducted’ regardless if a survey was conducted within a reasonable prior time period. The proposed rule does not consider the wide variations in the operation of water utilities.” “...recommend that the draft rules be rewritten as follows:

3) Draft rule 3745-95-03 (A) - maintain the existing rule wording of "of a frequency acceptable to the director" (second line).

4) Draft rule 3745-95-03 (A)(1)(a) - delete in its entirety

5) Draft rule 3745-95-03 (A)(1)(b) - delete in its entirety

6) Draft rule 3745-95-03 (A)(2) - delete in its entirety”
(Thomas Schwing, Aqua Ohio)

Response 29: The rule language does not implicitly state the PWS must ignore a survey or investigation conducted in between the 5 year time frame. If a survey and/or investigation were warranted sooner than 5 years, the next one is not necessary for 5 yrs from that date, provided the PWS is using the rule condition that an investigation be conducted every five years at premises likely to have a hazard. If the PWS establishes a written program using alternate means to identify changes in water use practices, a reasonable time frame and expectations should be established as part of the written program, so the objective of the program, to capture changes in water use practices that pose un-protected or under-protected hazards are addressed.

Ohio EPA is aware that not all PWSs have the same risks or access to third party data. Triggers are in the rule to encourage collaboration with other licensing authorities who can notify the purveyor of water when changes in water use practices occur so that hazards can be addressed. If no such relationship or entity exists the water purveyor must demonstrate alternate means to achieve this objective or would rely on the five year survey and onsite investigation frequency.

Comment 30: “While no changes are being proposed for this section, it may be important to note that this section uses ‘device’ without a definition. It may be appropriate to include a definition of ‘device’ and ‘assembly’ and use both as intended in the guidance manual. The manual states that devices are not designed for field testing and the standards for devices and assemblies differ. This section states that “an approved backflow device shall be installed on each service linewherea health or severe health hazard to the public water system exists.” (Judy Scott, City of Mount Vernon)

Response 30: The terminology regarding “device” and “assembly” has been clarified in the definitions and elsewhere in Chapter 3745-95.

3745-95-06

Comment 31: [Re: 3745-95-06] “These rules start off by stating that any ‘backflow prevention device’ shall be of a model ‘approved’ by the supplier of water, yet paragraphs (2), (3), (4), and (5) all refer to ‘assemblies’. First, it is suggested that the rule clarify the difference between a ‘device’ and an ‘assembly’. There is no definition for either term in the OAC and they are often used interchangeably and probably erroneously, as devices and assemblies are distinctly different per the manual. Finally, a water supplier has no real authority of ‘approval’ over these devices or assemblies; a water supplier may only ‘adopt the use’ of those models already ‘approved by’ other authorities including ANSI and ASSE.

[Re: 3745-95-06 (C)(6)] “This section again uses the term ‘device’. Is it intended to apply only for ‘assemblies’ ‘installed on each service line’ per 3745-95-04?” (Judy Scott, City of Mount Vernon)

Response 31: The terms for ‘device’ and ‘assembly’ have been clarified in the definitions rule and in references within the rules currently undergoing revision in Chapter 3745-95.

Although the type of backflow preventer recognized by the rule is limited to those which are certified according to acceptable standards, the supplier of water has authority to ‘approve’ what backflow preventers can be used in order to satisfy the containment backflow preventer requirement.

Comment 32: [Re: modifying 3754-95-06(A)] “Any containment¹ backflow prevention device required by rules 3745-95-04 and 3745-95-05 of the Administrative Code shall be of a model or construction

approved by the supplier of water and conform to ~~at least one of the following standards~~ the specific edition of the following standards as referenced in rule 4101:3-13-01 of the Administrative Code (Chapter 13 of the Ohio Plumbing Code)².

Footnotes:

¹ As discussed in our meeting, in order to eliminate duplicate enforcement efforts and conflicting rules, we recommend that your rules for the suppliers focus only on containment. In turn, the rules of the BBS will be amended to focus on isolation.

² We recommend that you refer to Chapter 13 of the OPC where we have more up-to-date standards for the backflow prevention devices and assemblies. By eliminating the date of the standards (or the entire standard) from your rules and simply referring to our rules for the date of or the entire standards, we avoid possible conflicts between our rules.” (Deborah D. Ohler, Ohio BBS)

Response 32: Ohio EPA has considered this comment and has specified containment in this rule. We have changed wording to refer to plumbing code standards for the current edition when applicable, and have included additional acceptable standards not referenced in plumbing code.

Comment 33: [Re: 3745-95-06 (C)(2)] “In this section, the language now specifies ‘tests and inspections’ rather than the combined ‘survey and investigation’ terminology; how is the inspection different? Should a third definition be added? 3745-95-08 does allow a supplier to disconnect water service when a ‘device’ (assembly?) is not tested. This section states that it is the duty of the water supplier “to see that the tests and inspections ...are made...”

[Re: 3745-95-06 (C)(3)] “This section now refers to thorough ‘inspections and operational tests’. Previously the terms ‘survey and investigations’ have been used. How is the “inspection” different from the ‘survey’ or the ‘investigation’? Should a definition be created for all three terms? Also, the manual indicates that “devices” cannot be tested, only ‘assemblies’. This section goes on to state that, ‘these inspections and tests shall be at the expense of the water consumer and shall be performed by the supplier of water or a person approved by the supplier’. The previous section (C) (2) only states that the supplier of water is required to ‘see that the tests.....are made’.

This section now states that the ‘tests.....shall be performed by the supplier of water’.” (Judy Scott, City of Mount Vernon)

Response 33: The rule language referenced here has not been changed. “Tests and inspections” terminology refer to the ‘every 12 months’ requirement for containment principle backflow preventers which have been installed to mitigate a hazard to the PWS. Containment backflow preventers, from air gaps and interchangeable connections which must be inspected that they are in place and not overcome, to testing of mechanical backflow preventers, including double check valve assemblies and reduced pressure principle backflow prevention assembly for proper operation, must all undergo such tests and inspections every 12 months. The ‘survey and investigations’ terminology refers to periodically assessing the water use practices at a service connection to ensure new or increased hazards, which are not properly protected, are addressed. While the PWS must enforce this provision of the program, the costs are the consumer’s responsibility. The supplier of water can determine who is qualified to conduct these tests or inspections to fulfill this requirement, opting either to use a trained in-house certified operator and bill the consumer, or contract with an outside qualified contractor. The language in OAC 3745-95-08 dealing with violations, gives the water purveyor the authority to discontinue water service if the requirements of this Chapter 3745-95 are not met.

Comment 34: [Re: 3745-95-03 (C)(3)] “...is the supplier of water qualified to test backflow prevention assemblies? Can a water supplier test a ‘containment assembly’ in any building? Can they test an ‘isolation device/assembly’? It is my understanding that a backflow assembly may only be ‘tested’ by the water supplier if the supplier is certified by the ODC and then only when the assembly is in a city-owned building. This seems to imply that a supplier may be able to test any device or assembly. Next, as mentioned before the supplier of water does not have the authority to ‘approve’ anyone to test backflow assemblies. This authority rests with the ODC; the water supplier may only ‘adopt a list of plumbers approved as certified by the state’. Does the state require approval in each county the plumber works in or can a plumber be certified state wide?” (Judy Scott, City of Mount Vernon)

Response 34: The supplier of water has the authority to determine who is qualified to test containment backflow preventers within their water system. OAC 3745-95-06(C)(3) gives the PWS discretionary control over containment device testers. Ohio

Department of Commerce (ODOC) laws/rules exclude containment from their requirement for testing certification requirement. The Ohio EPA manual recommends that the tester for containment backflow preventers be one that is certified by ODOC or has completed similar training qualifications and experience. ODOC has the authority to determine who is qualified to test isolation backflow preventers and these requirements are outlined in their rules. Ohio EPA recommends this licensure, but it is not required.

Comment 35: [Re: 3745-95-06 (C)(6)] Suggested to “modify as follows:
‘For devices required by rules 3745-95-04 and 3745-95-05 of the Administrative Code, the supplier of water shall maintain a paper or electronic record of inventory of surveys and inspections of backflow prevention device installations. Records of inspections, tests repairs and overhauls shall be maintained by the supplier of water for a minimum of five (5) years.’

[Re: 3745-95-06 (D)] Suggested to “modify as follows:
‘Paper or electronic inspection records shall be maintained by the supplier of water for a minimum of five (5) years.’ (Thomas Schwing, Aqua Ohio)

Response 35: Ohio EPA considered these suggestions and has incorporated them in rule. Electronic or paper records are both acceptable.

Comment 36: [Re: 3745-95-06(D)] “This section refers to the inspection of ‘an approved connection ...between an auxiliary water system and the public water system or a consumer’s water system’. 3745-95-02 (B) indicates that this kind of connection cannot exist without the approval by the ‘director’ and the supplier of water. As this is required to be approved by the director, does the OEPA maintain and share this list of ‘approved connections’ with the water supplier? This is the list the water supplier would need to have in order to ‘maintain an inventory’ of all such installations and inspection records.” (Judy Scott, City of Mount Vernon)

Response 36: Both the supplier of water and the Ohio EPA would have to approve the use of dual water supplies as outlined in rule. The supplier of water would know about such a case at the onset and approval would not be granted by Ohio EPA without first being granted by the PWS. A list is not readily available, as information is not collected in this manner. Plans approved by the Director of Ohio EPA are retained as part of records retention of the Agency, but cannot be queried specifically for these types of installations.

3745-95-07

During IPR for the rule package, Ohio EPA received comments relating to OAC Rule 3745-95-07, Booster pumps, which was not part of the original package. As a result of these comments, and to resolve conflicts between agency rules, Ohio EPA decided to revise this rule and include it in the second round of IPR. The comments received are outlined below, along with OEPA's response.

Comment 37: "...petition the EPA's State of Ohio office to accept an alternative technology to a written standard. Chapter 3745-95, Backflow Prevention and Cross-Connection Control, sub chapter 3745-95-07 Booster Pumps, paragraph's C, D, and E state as follows:

"(A) No person shall install or maintain a water service connection to any one, two or three family dwelling where a booster pump has been installed, unless an air gap separation is provided to ensure that the booster pump cannot exert suction on the service line.

(B) For booster pumps not intended to be used for fire suppression, no person shall install or maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the service line to or within such premises, unless such booster pump is equipped with a low pressure cut-off designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to ten pounds per square inch gauge or less.

(C) For booster pumps used for fire suppression installed after the effective date of this rule, no person shall install or maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the service line to or within such premises, unless the pump is equipped with a minimum pressure sustaining valve on the booster pump discharge, which throttles the discharge of the pump when necessary so that suction pressure will not be reduced below ten pounds per square inch gauge while the pump is operating.

(D) For booster pumps used for fire suppression installed prior to the effective date of this rule, no person shall maintain a water service connection to any premises not included in paragraph (A) of this rule where a booster pump has been installed on the

service line to or within such premises, unless the pump is equipped with either a low pressure cut-off designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to ten pounds per square inch gauge or less, or a minimum pressure sustaining valve on the booster pump discharge, which throttles the discharge of the pump when necessary so that suction pressure will not be reduced below ten pounds per square inch gauge while the pump is operating.

(E) It shall be the duty of the water consumer to maintain the low pressure cut-off device or minimum pressure sustaining valve in proper working order and to certify to the supplier of water, at least once every twelve months, that the device is operable and maintained in continuous operation.”

Clarke Fire Protection Products (www.clarkefire.com) is a manufacturer of diesel driven fire pump engines. We offer a UL Listed, FM Approved product called the Pressure Limiting Driver (PLD), which essentially duplicates the function outlined above of reducing the engine speed to control system overpressure.

Pressure Limiting Drivers (PLD) will Prevent Sprinkler System Over-Pressure due to: Variable Suction Pressure, High Pump Shut-Off Pressure, Engine Droop.

The Clarke PLD engines have been designed and built in conformance with NFPA and FM Approvals. As highlighted in NFPA, 3.3.55 (2007) “Variable Speed Pressure Limiting Control. A speed control system used to limit the total discharge pressure by reducing the pump driver speed from the rated speed.” FM Approvals standard 1333, Approval Standard for Diesel Engine Fire Pump Drivers, Chapter 3.12.1 states, “Variable Speed Pressure Limiting Control. A speed control system used to limit the total discharge pressure by reducing the pump driver speed from the rated speed.”

I would like the opportunity of meeting with you or the appropriate department/committee members to review the Clarke PLD system and to determine what course of action is required to have sub chapter 3745-95-07 updated to include this technology. I’ve attached additional materials which address our request.” (Mike Mathes, Clarke Fire Protection Products, Inc.)

Response 37: Ohio EPA DDAGW staff and Clarke representatives met and reviewed the proposal and technology. Ohio EPA conversed with ODOC and the Fire Marshal, which both accept this

technology through its approval under National Fire Protection Administration (NFPA) standard 20, referenced in their rules. This provision will be added to rule as an alternate minimum pressure sustaining method for fire pumps. The manual will also reflect this option, associated testing requirements and test methods.

Comment 38: ODOC/BBS/Plumbing per verbal discussion requested OEPA to reconsider prohibition against installation of booster pumps through a direct connection for 1, 2 and 3 family dwellings. The plumbing code does not prohibit it, but Ohio EPA rules do, making it difficult for the plumbing community to enforce. Booster Pumps for domestic use— In OAC Rule 3745-95-07, OEPA prohibits booster pumps on 1, 2, and 3 family dwellings unless supplied through an air gap. OEPA and Commerce discussed how this requirement could be relaxed to allow booster pumps at these settings.

Response 38: Through a verbal discussion and agreement, OEPA has drafted amendments that lift the prohibition provided BBS write instruction in their rules that require plumbing authority to notify the purveyor of water when a booster pump is installed. In addition the plumbing authority will verify that the low pressure cut-off has been installed and tested successfully prior to issuing a certificate of occupancy. As a result, the water purveyor would be informed when a booster pump was going in and annual testing of the low pressure cutoff would occur. The final approval for the low pressure cutoff remains the water purveyor's responsibility. Plumbing rules currently require the owner to test and maintain the low pressure cut-off. (Chapter 3, 3.12.10 in International plumbing code requires testing of low pressure cutoff annually.) The test report for the low pressure cutoff will be sent to the purveyor of water. Testing will be conducted in accordance with OEPA standards. OEPA backflow prevention manual outlines the acceptable test method.

Manual of Backflow Prevention and Cross Connection Control:

Comment 39: (Gary Espenschied, Operator Training Committee of Ohio or OTCO) I have a few comments that I hope you and The Ohio EPA would consider. They are as follows:

(A). I have scanned a backflow incident that was settled in Ohio in (2010) since the last incident that is listed (2008) in the draft manual is now 5 years old.

(B). The statement on page 93 (*now page 97*) of the draft manual recommends the containment assembly tester have a Ohio Department of Commerce Tester Certification. I somewhat agree although, I would recommend it read :The Ohio EPA recommends the containment assembly be tested by a certified Ohio Department of Commerce Tester or a tester having a certificate issued from the Operator Training Committee of Ohio, Inc. stating he or she is competent to test. Please remember that this OTCO certificate was established in accordance with the Ohio Administrative Chapter 3745-95 under the Technical Advisory of The Ohio Environmental Protection Agency in 1996. The information taught in both the DOC class and the OTCO class is the same information. DOC and OTCO students test the assemblies exactly the same way. This has been a joint adventure for many years!

(C). On page 175 (*now page 205*) there is a test form. I have scanned a new test form that both DOC and OTCO now use in the training manuals.

Response 39: Ohio EPA has considered these comments. The manual has been revised to include the updated form. Thank you. However, instead of referring to a specific training provider (i.e., OTCO) for recommended training, the experience and qualifications to sit for the ODOC exam will be included.

Comment 40: (Deborah Ohler, Ohio Board of Building Standards) The following lists comments made throughout the manual and changes can be seen by referencing page number listed.

Response 40: All suggestions considered and most changes made as requested, as noted below. Clarifications and editorial changes suggested were considered. Responses to suggestions are in bold.

Page: 24

The plumbing and health inspection authorities are regulatory agencies. **Clarification noted.**

Page: 25

Non-residential plumbing code enforcement is the responsibility of a local certified building department, a local health department, or the Ohio Department of Commerce. If there is no certified building department to enforce the Ohio Plumbing Code, then the local health district may enforce the Ohio Plumbing Code. If there is no health district to enforce, then the ODOC will perform the inspections. For residential plumbing

code inspections, it's different. Either a local certified building department or a local health department will enforce the residential plumbing code rules. The ODOC does not enforce the residential plumbing code rules adopted by the Board of Building Standards. **Clarification noted.**

Page: 25

This is also the responsibility of the plumbing inspector who works for a certified building department, a local health department or the ODOC. **Clarification noted.**

Page: 27 and 29

In my opinion, this section should be combined with the "Regulatory Agencies" section because plumbing inspection authorities are regulatory agencies. As an alternative, the plumbing authorities could be shown as a subset (indented) under the Regulatory Agencies heading. **Suggested edits incorporated.**

Page: 28

Inserted Text: ...that work for local building departments, health districts, or the state of Ohio review plans and.....and altered non-residential plumbing systems and all new and altered residential plumbing systems where there is a certified local residential building department or local health district that enforces the residential plumbing rules. **Suggested edits incorporated.**

As discussed in our meeting, in order to eliminate duplicate enforcement efforts and conflicting rules, we recommend that your rules focus only on containment. In turn, the rules of the BBS will focus on isolation.

To clarify, as discussed, we suggest adding the attached figure which is currently found on page 6 (labeled Figure 1) in the Ohio Department of Commerce Backflow Prevention Manual. We have modified the figure in the attachment to more accurately depict the enforcement roles in the State of Ohio.

Regarding defining jurisdiction between Ohio EPA/PWS and ODOC/plumbing authorities, the outcome is that a clear definition cannot be made in all cases. For example, Ohio EPA rules require specific cross connection control and backflow prevention within the building when dual water supplies are used (either for fire protection or backup supply) which still require oversight. The diagram provided

was inserted into the manual on page 30, with clarification of these areas which do not fit into the delineation.

Inserted Text: ...for non-residential and residential buildings... are applicable throughout the state and.... **Suggested edits incorporated.**

Inserted Text: The OBBS is also responsible for the certification of building departments that enforce the plumbing code and for the certification of personnel that work in or for the building departments, including plumbing inspectors. **Suggested edits incorporated.**

Inserted Text: in state owned buildings and non-residential buildings where there is no certified local building department or local health district enforcing the plumbing code rules adopted by the OBBS. **Suggested edits incorporated.**

In many ways, the last sentence is not accurate. **Clarification noted.**

Page: 29

Inserted Text: For residential buildings (one-, two-, and three-family dwellings), the OBBS- adopted residential plumbing rules are applicable statewide. However, the rules are only enforced in areas where the local government has chosen to get their building department certified to enforce the residential plumbing rules or where there is a local health district enforcing the residential plumbing rules. **Clarification noted.**

As noted in our June 5th meeting, it is really unclear and not well defined where the plumbing code begins when dealing with water distribution systems. **OEPA has incorporated the diagram and related commentary to address this concern, on page 30.**

Page: 30

Inserted Text: and usually depending upon the location of the meter, ...local building departments, local health districts, or the Division of Industrial Compliance plumbing section...has...for plan review and inspection of plumbing systems. **Clarification noted.**

Page: 31

There is no need for local governments to separately adopt the Ohio Plumbing Code. The rules adopted by the OBBS are considered general laws of the state. For nonresidential

buildings, the OPC is considered the state minimum code and is enforceable throughout the state by local building departments, local health departments, or the Division of Industrial Compliance, Plumbing Section. For residential buildings, the Residential Code of Ohio references the OPC and is enforceable by local building departments that chose to have a building department or by local health departments. **Clarification noted and text inserted on page 31.**

Page: 32

Inserted Text: Ohio Administrative Code Division 4101:3
Ohio Plumbing Code Division 4101:7 Certification Rules
Rule 4101:8-25-01 Residential Code of Ohio, "Plumbing
Systems" chapter. **Suggested edits incorporated.**

Add the Ohio Administrative Code rules adopted by the OBBS
as inserted after "approvals" **Suggested edits incorporated.**

This rule is adopted by the OBBS. **Clarification noted.**

Page: 33

I believe that the Ohio Department of Health no longer has regulatory authority for manufactured home parks (now with the manufactured homes commission) or marinas. **Clarification noted. Reference to the applicable rules were removed from the manual.**

Page: 36

Inserted Text: The plumbing code rules adopted by the Ohio Board of Building Standards prescribe the type of...within buildings. **Suggested edits incorporated.**

Page: 37

This is different than the Ohio Plumbing Code requirements. Why not just mention the OBBS rules. **Suggested edits incorporated and table revised to reflect OBBS rules.**

Page: 45

The editions of these standards are out-of-date and conflict with the Ohio Plumbing Code adopted editions as shown below.

AWWA C511-2007
ASSE 1013 -2009
CSA 64.4.1-2007
ASSE 1047-2009
CSA B64.4.1 -2007

If the assembly is installed as an isolation device within the building, it is required to comply with the rules of the OBBS. Why not reference the Ohio Plumbing Code for the standards? That would ensure that our rules do not conflict when one of us changes the edition of the standards. **The standards referenced by both Ohio EPA and BBS will refer reader to BBS rules to retain consistency. Ohio EPA also recognizes standards not listed by BBS rules and have retained them in rule reference.**

Page: 46

OAC rule 4101:3-3-01 (Section 312.10) also prescribes requirements for testing of backflow prevention assemblies. **Clarification noted and statement added.**

Page: 48

These standards are out of date and conflict the standards adopted by the OBBS as follows:

AWWA C510-2007
ASSE 1015 – 2009
CSA B64.5-2007
ASSE 1048-2009
CSA B64.5.1 -2007

If installed for isolation within a building, the assembly is required to comply with the rules of the OBBS.

The standards referenced by both Ohio EPA and BBS will refer reader to BBS rules to retain consistency. Ohio EPA also recognizes standards not listed by BBS rules and have retained them in rule reference. Text was added to manual for clarification.

Page: 52

OAC rule 4101:3-3-01 (Section 312.10) also prescribes requirements for testing of backflow prevention assemblies. **Clarification noted.**

Page: 55

The rules of the OBBS already cover isolation device requirements. Why have additional requirements that may conflict? **This comment was provided in reference to the pressure vacuum breaker requirements to be used in lieu of a containment assembly at the meter.**

To be used in lieu of a containment assembly, the pressure vacuum breaker, since it is an isolation device that is

testable, must be maintained and verified it is operating, just like a containment assembly would be required to as part of rule requirements. The supplier of water must have access to the pressure vacuum breaker inspection and test reports to consider this option. It will be permitted when a residential irrigation system supplies water only (without chemical additive) and the system is not subject to backpressure, and equipped with a pump or tank or at an elevation which can apply backpressure to the public or consumer's water system. These are the condition in which a pressure vacuum breaker can be accepted in lieu of a containment assembly at the meter regardless if there is any conflict with what the plumbing code requires. OEPA's requirements are more specific in regard to when a PVB should be tested (upon seasonal startup). However, Ohio EPA considers this a necessary clarification rather than a conflict.

Page: 82

This conflicts with the Ohio Plumbing Code. See OPC 606.5.1

Why is the booster pump prohibited for residential and not for non-residential? This is confusing...it seems that booster pumps are prohibited for 1, 2, and 3 dwellings, but yet they are permitted for domestic use? What is meant by a domestic use booster pump? Can I use a booster pump in a dwelling without a tank, but with a low suction pressure cut off device?

Current rule prohibits direct connection to a booster pump off of the public water system service for 1, 2 and 3 family dwellings. The prohibition is due to the overwhelming task of having to track and test/maintain low pressure cut off devices and access issues into these types of residences. In addition, the impact of a multitude of booster pumps on the hydraulics of the public water system is hard to quantify to mitigate the effects, which may be significant. By drawing from a tank supplied through an air gap, these factors are eliminated. The preferred method is for the public water system to address pressure issues within the distribution system rather than the residences installing booster pumps. Booster pumps risk creating a backsiphonage condition if the supply pressure drops and the pump still runs.

Through a verbal discussion and agreement, OEPA has drafted amendments that lift the prohibition provided BBS write instruction in their rules that require plumbing

authority to notify the purveyor of water when a booster pump is installed. In addition the plumbing authority will verify that the low pressure cut-off has been installed and tested successfully prior to issuing a certificate of occupancy. As a result, the water purveyor would be informed when a booster pump was going in and annual testing of the low pressure cutoff would occur. The final approval for the low pressure cutoff remains the water purveyor's responsibility. Plumbing rules currently require the owner to test and maintain the low pressure cut-off. (Chapter 3, 3.12.10 in International plumbing code requires testing of low pressure cutoff annually.) The test report for the low pressure cutoff will be sent to the purveyor of water. Testing will be conducted in accordance with OEPA standards. OEPA backflow prevention manual outlines the acceptable test method.

'Domestic' use is for uses other than for fire suppression. OEPA has removed 'domestic' from terminology to avoid confusion and instead has categorized the use as "uses other than for fire protection".

Page: 84

Inserted Text: local building departments, local health departments, or the Division of Industrial Compliance. **Suggested edits incorporated.**

Page: 86

Water-powered sump pumps are permitted in the Ohio Plumbing Code. See OPC Sections 608.3, 608.12, 608.16.6, and 1113.1.5 (Rules 4101:3-6-01 and 4101:3-11-01 of the Administrative Code)

Ohio EPA manual does not specifically prohibit their installation but provides guidance on ways to mitigate the potential or actual hazard to the public water supply. Ohio EPA is aware plumbing allows such installations and applies the level of protection the plumbing code stipulates.

Page: 87

Inserted Text: For installation in a non-residential building, one of these authorities will approve the plans and inspect the plumbing installation to ensure that proper backflow prevention is provided. For residential buildings, the proposed plumbing installation may be reviewed and inspected where a local certified building department or a local health department is available to enforce the plumbing code. **Suggested edits incorporated.**

Page: 92

The OPC does not currently address gray water recycling systems or rainwater harvesting systems? Where in the OPC do you believe this is prescribed?

Although OPC does not specifically address these systems currently, requirements for nonpotable systems exist. Existing installations have applied these principles. Clarification received from the plumbing enforcement section specifies no physical connection may exist between the potable and nonpotable system. Text was added to manual to incorporate this clarification.

Page: 94

Regarding survey or existing hazards - "I assume that the water supplier will be conducting the survey? If so, this should not say inspector...that could be confusing. The term "inspector" is generally an employee of the building department, the health department or the Division of Industrial Compliance."

The supplier of water or acceptable representative may conduct the survey. Inspector is not meant here to represent solely the employee of the building department, health department or DIC.

Page: 95

Inserted Text: having plumbing inspectors certified by the...or the Division of Industrial Compliance plumbing section.
Suggested edits incorporated.

Page: 96

Plumbing inspectors are regulatory agencies. **Clarification noted.**

Page: 99

Inserted Text: ...to ensure that the installer is certified.....It is also recommended that the water purveyor consult with the local building department to ensure that the pressure loss through the backflow prevention assembly has been accounted for in the design of the suppression system. **Suggested edits incorporated.**

Page: 100

As questioned earlier...Why is a booster pump permitted in non-residential buildings, but not residential buildings? This conflicts with the OPC Section 606.5.1 which allows a booster pump when pressure in the public water main is insufficient to supply the minimum pressures required. **See page 82 response as**

well as Rule 3745-95-07 comments and response section. Edits made to reflect proposed requirement.

General Comment:

Include reference to Plumbing's Backflow Prevention and Cross Connection Control.

In the preface of the manual language was added to reference the plumbing manual. Language states, "The reader, if performing under the purview of the Ohio Department of Commerce, should reference the Ohio Department of Commerce's, Division of Industrial Compliance, Construction Compliance manual, 'Backflow Prevention and Cross Connection Control Manual: For the Education of Ohio Certified Backflow Prevention Technicians' for guidance."

Comment 41: (OCILB - Backflow Advisory board members, collectively) The following lists comments made throughout the manual by referenced page number...:

Response 41: All suggestions considered and most changes made as requested, as noted below. Clarifications and editorial changes suggested were considered. Responses to suggestions are in bold. Refer to listed page number in manual to see the changes incorporated.

Page: 30

Include ODOC manual jurisdiction diagram in Section 3, under responsibility.

Clarify that responsibility for PWS at the point of delivery, or backside of containment device.

This diagram was included in Section 3, with clarifications suggested as well as those limited conditions that do not fit into this delineation, per rule.

Various small editorial comments.

Page: 74

Does OEPA really mean to require that the physical separation for auxiliary water system be visually observed and verified every 12 months?

Yes. Ohio EPA rule requires that the physical separation between an auxiliary water system and consumer's system supplied by the public water system be verified every 12

months. This is a reflection of the mechanical backflow preventers that must be maintained and tested every 12 mos. The conditions are the same and the integrity of the backflow preventer in place must be verified.

Page: 84

Clarify condition for domestic use booster pump by adding “for four family or larger”. **This clarification was resolved through the rule language changes.**

Page: 87

Regarding guidance provided for water operated sump pumps, should an RP be required based on narrative? Item 2 appears to contradict Item 1? **These units do pose a potential risk and each installation’s risk must be determined and mitigated. As a result, a specific backflow preventer is not identified. This section provides guidance on mitigating the hazard.**

Page: 93

In regard to gray water systems or rain water harvesting system, no physical connection applies. See section 608 of the plumbing code. **Narrative will be clarified to reflect this requirement that no physical connection between these systems and a consumer’s potable water system may exist.**

Page: 99

Qualification suggestion for backflow tester, include OTCO standard which is a minimum of Class 1 water or water distribution license and five years’ experience in water distribution system. Also add this to question 4. Who tests assemblies on pg. 96. **Ohio EPA considered these suggestions and incorporated them into the qualification suggestion.**

Page: 115

Add Definition of Containment backflow prevention device to rule. See commerce definition (pg. 14 of ODOC manual). **A definition has been incorporated into rule and the manual.**

Page: 137 - 148

For Ohio Building Code listing, remove narrative and just reference the code instead as it changes every three years. Numbers will be overhauled in 2015. **Ohio EPA has removed the narrative and the manual only makes reference to the code citation.**

Page: 167

Add statement that vertical installation... “upon approval of the water purveyor”.

Page: 168, Fig A-2

Vertical installation diagram. The drain has to be below first check valve.

Include a statement that device be installed above flooding hazard.

All these recommendations have been incorporated into the manual.

The following is a summary of comments and changes made to the backflow prevention and cross-connection control rules and backflow manual as part of a short-term stakeholder committee formed after the interested party review period.

The stakeholder committee was made up of representatives from the Ohio Department of Commerce- Board of Building Standards and Building Code Compliance, Plumbing; City of Columbus; Ohio Rural Water Association; Ottawa County Regional Water; City of Newark; Avon Lake Water; Ohio AWWA.

Comments were also solicited from representative of State Fire Marshal regarding changes made to 95-07 to address comments received.

Summary paragraph(s) of concerns and summary of changes:

The intent of the stakeholders group was two-fold. The first was to find consensus on methodology for surveys and investigations found under 3745-95-03 to ensure continued, adequate backflow protection is provided with changes in water use practices. Secondly, clarification was sought regarding jurisdiction of regulatory agencies overseeing cross connection control and backflow prevention.

The stakeholder group discussed different aspects related to re-survey and investigation requirements in the rule and what was initially proposed. The necessary effort to re-survey all service connections every five years was stated to be overly burdensome to most water systems due to number and perceived rate of compliance expected. The importance of addressing changes in water use practices that can represent new or increased hazards to the public water system supply was stressed. Taking both of the factors into account, the group decided on a compromise that can be found in the current proposed rule 3745-95-03.

The proposed changes can be summarized as follows:

The supplier of water shall conduct or cause to be conducted an initial assessment as well as periodic surveys or investigations of water use practices within a consumer's premises to determine whether there is a hazard. This means every consumer (industrial, institutional, commercial and residential) requires an initial assessment. An onsite investigation must be initiated every five years for all service connection likely to have a hazard. An exception is provided for residential service connections which meet specific criteria.

In lieu of conducting an onsite investigation every 5 years, the PWS may develop and implement an on-going, written process to identify changes in water use practices at consumer's premises so new or increased hazards are identified and mitigated. The process must include an on-site investigation of all premises likely to have a hazard. The PWS can use information obtained through survey questionnaires as well as information from other licensing agencies and requests for additional service lines and/or larger meters as triggers to when an investigation should be conducted.

The exception for residential customers is found in the "in lieu of" portion of the rule. This exception allows the PWS, for those residential consumers without a likely hazard, to forgo the requirement for subsequent surveys or investigations so long as the PWS has an education campaign on backflow hazards.

This commentary is also reflected in the narrative of the backflow prevention manual.

The stakeholder group also discussed jurisdictional delineations among regulatory agencies. Revisions in the rule and manual are an attempt to clarify these roles and jurisdiction. These revisions are presented within the response to comments in the previous section.

End of Response to Comments