BENSON BACKFLOW ORDINANCE

BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL CODE
(Amended by Ordinance No. 475)

Section 13-4-10(A). APPLICATION

This Code shall be applicable to all water service connections, including those which existed prior to
the effective date
of this amendment, in accordance with the compliance schedule hereinafter set
forth.

Section 13-4-10(B). PURPOSE

1. To protect the City of Benson's drinking water quality and to ensure that the
City supplies safe drinking water in compliance with the provisions of Arizona law and the rules adopted by the Arizona Department of Environmental Quality, the City of Benson shall require the installation of a backflow prevention assembly under those circumstances hereinafter defined.
2. To protect the public water supply of the City of Benson from the possibility of contamination or pollution from the backflow of contaminants and pollutants into the public potable water supply system.
3. To promote the elimination or control of existing cross-connections, actual or potential, with a customer's internal potable water system, plumbing fixtures and industrial piping systems.
4. To provide for a continuing program to monitor, control, and prevent cross-connection contamination or pollution of the public potable water supply system.

Section 13-4-10(C). DEFINITIONS

1. Benson Water as used in this Code means the municipal water department for the City of Benson and/or the Benson City Building Inspector.
2. Department as used in this Code means the municipal water department for the City of Benson.
3. UPC as used in this Code means the Uniform Plumbing Code as adopted by Ordinance No. 344 on March 2, 1992.

Section 13-4-10(D). BACKFLOW PREVENTION REQUIRED

1. An approved backflow prevention method shall be utilized or installed at every service connection when it is determined by the City of Benson that the public potable water system may be subject to contamination, pollution or deterioration of its sanitary quality or condition.
2. The backflow prevention method to be utilized or installed shall be determined by Benson Water. The method of backflow prevention which an applicant will be required to use shall be of a nature sufficient to protect the public potable water supply against potential hazards from contamination or pollution.

Section 13-4-10(E). HAZARD POTENTIAL

1. The degree of hazard potential to the public potable water supply and system from a customer's water supply system shall be determined using the following hazard factors:

Contamination: Any condition, device or practice which, in the judgment of Benson Water, may create a danger to the health and well-being of the potable water customers.

Cross-connection: An actual or potential plumbing connection that is not properly protected by an approved backflow prevention method.

Hazard: An actual or potential threat of backflow which may cause severe damage to the physical facilities of the public potable water supply system or which may have a protracted effect on the quality of the potable water in the system.

Pollution: An actual or potential threat to the physical facilities or the public potable water supply system or to the public potable water supply which would constitute a nuisance or cause objectionable odor, taste, or discolor or could cause damage to the system or its appurtenances.

B. A public water system customer shall ensure that a backflow-prevention assembly is installed whenever any of the following occur:

1. A substance harmful to human health is handled in a manner that could permit its entry into the public water system. These substances include chemicals, chemical or biological process waters, water from public water supplies that has deteriorated in sanitary quality, and water that have entered a fire sprinkler system. A Class 1 or Class 2 fire sprinkler system is exempt from the requirements of this Section.

2. A source of water supply exists on the user's premises that is not accepted as an additional source by the public water system or is not approved by the Department.

3. An unprotected cross-connection exists or a cross-connection problem has previously occurred within a user's premises; or

4. There is a significant possibility that a cross-connection problem will occur and entry to the premises is restricted to the extent that cross-connection inspections cannot be made with sufficient frequency or on sufficiently short notice to assure that unprotected cross-connections do not exist.

C. Unless a cross-connection problem is specifically identified, or as otherwise provided in this Section, the requirements of this Section shall not apply to single-family residences used solely for residential purposes.

D. A backflow-prevention assembly required by this Section shall comply with Section 13-4-10(F).

Section 13-4-10(F). APPROVED BACKFLOW PREVENTION METHODS

The minimum level of backflow protection that is provided to protect a public water system shall be the level recommended in Section 7.2 of the Manual of Cross-Connection Control, Ninth Edition, USC-FCCCHR, KAP-200 University Park MC-2531, Los Angeles, California, 90089-2531, December 1993, (and any future editions or amendments), incorporated by reference and on file with the Department and the Office of the Secretary of State. The types of backflow prevention that may be required, listed in decreasing order according to the level of protection they provide, include: an air-gap separation (AG), a reduced pressure principle backflow prevention (RP) assembly, a pressure vacuum breaker (PVB) assembly, and a double check valve (DC) assembly. Nothing contained in this Section shall prevent the public water system from requiring the use of a higher level of protection than that required by this subsection. A backflow prevention method shall be any assembly or other means designed to prevent backflow. The following are the recognized backflow prevention methods which Benson Water may require to be installed or in place as a condition of water service:

a. Air Gap: The unobstructed vertical distance between the opening of the pipe or faucet supplying potable water to a tank, plumbing fixture or other device. An approved air gap shall be at least double the diameter or the supply pipe or faucet and in no case less than one (1) inch.

b. Reduced Pressure Principle Assembly (hereinafter "RPA"): An assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves, and at the same time below the first check valve. The assembly shall include properly located test cocks and tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

c. Double Check Valve Assembly (hereinafter "DCVA"): An assembly composed of two independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

d. Pressure Vacuum Breaker Assembly (hereinafter "PVB"): An assembly containing an independently operating, loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. The assembly shall be equipped with properly located test cocks and tightly closing shut-off valves located at each end of the assembly.

2. A backflow-prevention assembly required by this Section shall comply with the following:

a. If equipped with test cocks, it shall have been issued a certificate of approval by:
i. The University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR), or;
ii. A third-party certifying entity that is unrelated to the product's manufacturer or vendor, and is approved by the Department.

b. If not equipped with test cocks, it shall be approved by a third-party certifying entity that is unrelated to the product's manufacturer or vendor and is approved by the Department.

C. Benson Water shall maintain a list of approved backflow prevention assemblies by type and manufacturer. The list shall be available to any customer required to install a backflow prevention assembly.

D. A backflow prevention method may be approved by Benson Water if it has received the approval of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California and, for assemblies, has a local manufacturer's parts and service center.

Section 13-4-10(G). BACKFLOW PREVENTION METHODS REQUIRED

Whenever the following items exist or activities are conducted on premises served by the public potable water system, a potential hazard to the public potable water supply shall be presumed, and a backflow prevention method of the type specified herein for that item or activity must be utilized or installed at each service connection for that premise. The type and size of the assembly shall be determined by Benson Water.

1. Cooling Tower, boiler, condenser, chiller, and other cooling systems utilizing potable water: RPA
2. Tank, vessel, receptacle, and all other water connections including mobile units without approved air gap (except emergency vehicles and private swimming pools): RPA
3. Ice Maker (other than a residential service): RPA
4. Water cooled equipment, boosters, pumps or autoclaves: RPA

5. Water treatment facilities and all water processing equipment (other than residential water softeners): RPA
6. Bottle washer, bedpan washer, garbage can washer: RPA
7. Pesticide, herbicide, fertilizer, and chemical applicators (other than typical in-home use): RPA
8. Aspirator: RPA
9. Commercial Dishwashers, food processing and/or preparation equipment, carbonation equipment, or other food service processes utilizing potable water. RPA
10. Decorative fountain, baptismal, or any location water is exposed to atmosphere: RPA
11. X-ray equipment, plating equipment, or any other photographic processing equipment utilizing potable water: RPA
12. Auxiliary water supply and/or connections to unapproved water supply systems: RPA
13. Reclaimed water customers: RPA
14. Recreational vehicle dump stations (sewer), or any other location where potable water may be exposed to bacteria, virus, or gas: RPA
15. Any premises on which chemicals, oils, solvents, pesticides, disinfectants, cleaning agents, acids or other pollutants and/or contaminants are handled in a manner by which they may come in direct contact with potable water, or there is evidence of the potential to contact potable water (other than typical, infrequent in-home applications): RPA
16. Materials and piping systems unapproved by the Uniform Plumbing Code (UPC) or Environmental Protection Agency for potable water usage Contaminant: RPA-Pollutant: DCVA
17. Separately metered or unprotected irrigation systems, and construction water services: RPA or PVB as allowed.
18. Any premises where a cross-connection is maintained or where internal backflow protection is required pursuant to the Uniform Plumbing Code: RPA
19. Multi-metered properties with more than one meter connected to another or any building three stories or greater than 34 feet in height from service level: DCVA

B. When two or more of the activities listed above are conducted on the same premises and served by the same service connection or multiple service connections, the most restrictive backflow prevention method required for any of the activities conducted on the premises shall be required to be utilized or installed at each service connection. The order of most restrictive to least restrictive backflow prevention methods shall be as follows:

1. Air Gap (most restrictive)
2. Reduced Pressure Principle Assembly (RPA)
3. Double Check Valve Assembly (DCVA)
4. Pressure Vacuum Breaker Assembly (PVB) (least restrictive)

Section 13-4-10(H). BACKFLOW ASSEMBLY INSTALLATION REQUIREMENTS

A. Backflow prevention assemblies shall be installed by the customer, at the customer's expense and in compliance with the standards and specifications adopted by the City of Benson, at each service connection. The assembly shall have a diameter at least equal to the diameter of the service connection.

B. The assembly shall be in an accessible location approved by Benson Water. The reduced pressure principle assembly, pressure vacuum breaker assembly, and the double check valve assembly shall be installed above ground.

C. When a customer desires a continuous water supply, two backflow prevention assemblies shall be installed parallel to one another at the service connection to allow a continuous water supply during testing of the backflow prevention assemblies. When backflow prevention assemblies are installed parallel to one another, the sum of the cross sectional areas of the assemblies shall be at least equal to the cross sectional area of the service connection.

D. No person shall alter, modify, bypass or remove a backflow prevention method without the approval of Benson Water.

Section 13-4-10(I).INSTALLATION OF BACKFLOW PREVENTION ASSEMBLIES FOR FIRE SYSTEMS

All regulation of this section shall apply, with the exception of Class 1 and Class 2 sprinkler system which are exempt.

Section 13-4-10(J).INSPECTION TESTING

A. Customer's water system shall be available at all times during business operations for premises inspection by Benson Water. The inspection shall be conducted to determine whether any cross connection or other hazard potentials exist and to determine compliance with this chapter andmodifications, if any, pursuant to this Section.

B. Each backflow-prevention assembly required by this Section shall be tested at least annually or more frequently if directed by the public water system or the Department. Each assembly shall also be tested after installation, relocation, or repair. An assembly shall not be placed in service unless it has been tested and is functioning as designed.

C. Testing shall be in accordance with procedures described in Section 9 of the Manual of Cross-Connection Control. The public water system shall notify the water user when testing of backflow-prevention assemblies is needed. The notice shall specify the date by which the testing must be completed and the results forwarded to the public water system.

D. Testing shall be performed by a person who is currently certified as a "general" tester by the California-Nevada Section of the American Water Works Association (CA-NV Section, AWWA), the Arizona State Environmental Technical Training (ASETT) Center, or other certifying authority approved by the Department.

E. When a backflow-prevention assembly is tested and found to be defective, it shall be repaired or replaced in accordance with the provisions of this Section.

Section 13-4-10(K). PERMIT REQUIRED

A. Notification-It shall be the duty of the person doing the work authorized by the permit to notify Benson Water, orally or in writing, that said work is ready for inspection. Such notification shall be given not less than twenty-four (24) hours before the work is to be inspected and shall be given only if there is reason to believe that the work done will meet Uniform Plumbing Code and University of Southern California standards, as are referenced in the backflow prevention Manual.

B. Stop Orders-Whenever any work is being done contrary to the provisions of the UPC or this Code, Benson Water or an authorized representative may order the work stopped by notice in writing served on any persons engaged in the doing or causing such work to be done, and any such person shall forthwith stop such work until authorized by Benson Water to proceed with the work.

C. Suspension or Revocation-The City of Benson or any authorized employee may, in writing, suspend or revoke a permit issued under provisions of this Code, whenever the permit is issued in error or on the basis of incorrect information supplied, or in violation of any ordinance or regulation of any provision of the UPC or this Code.

Section 13-4-10(L). MAINTENANCE AND RECORDS

A. A public water system customer shall maintain records of backflow-prevention assembly installations and tests performed on backflow-prevention assemblies in its service area. Records shall be retained by the public water system customer for at least three years and shall be made available for review by the Department upon request. These records shall include an inventory of backflow-prevention assemblies required by this Section and, for each assembly, all of the following information:

1. Assembly identification number and description;
2. Location;
3. Date of tests;
4. Description of repairs and recommendations for repairs made by the tester; and,
5. The tester's name and certificate number.

B. A public water system shall submit a written cross-connection incident report to the Department and the local health authority within five business days after a cross-connection problem occurs that results in contamination of the public water system. The report shall address all of the following:
1. Date and time of discovery of the unprotected cross-connection;
2.Nature of the cross-connection problem;
3. Affected area;
4. Cause of the cross-connection problem;
5. Public health impact;
6. Date and text of any public health advisory issued;
7. Each corrective action taken; and,
8. Date of completion of each corrective action.

C. An individual with direct responsibility for implementing a backflow prevention program for a water system serving more than 50,000 persons, or if the Department has determined that such a need exists, shall be licensed as a "cross-connection control program specialist" by the CA-NV Section, AWWA, the ASETT Center, or other certifying authority approved by the Department.

D. The customer shall maintain records, on forms approved by Benson Water, of the results of all tests and all servicing, repairs, overhauls or replacements of the backflow prevention assembly. A copy of the records shall be promptly submitted to Benson Water after completion of the activity for which the record is made.

E. Fire systems shall not be out of service for more than eight (8) consecutive hours due to testing, maintenance, or repairs. The Fire Chief shall be notified immediately of any testing, maintenance, or repairs that place a fire system out of service.

Section 13-4-10(M). MODIFICATION OF BACKFLOW PREVENTION REQUIREMENTS

A. If Benson Water determines, after inspection of the customer's system, that a backflow prevention method less restrictive than that required in Section 13-4-10(F) will provide adequate protection of the public potable water supply from the degree of hazard potential by the customer's water system, the customer may appeal to the Backflow and Cross Connection Hearing Committee for relief

Section 13-4-10(N).DISCONTINUANCE OF WATER SERVICE UTILITIES

A. If Benson Water discovers that a customer's required backflow prevention method has been improperly tested or maintained, the water service to that service connection shall be

disconnected if the situation is not remedied within the time specified in the notice sent to the customer as required by this Section. The service shall not be restored until the condition is remedied.
B. Water service to a fire sprinkler system shall be subject to disconnection under this Section. If a situation, which will result in discontinuance of water service in subsection (A) above, is not remedied within the time provided in the notice sent to the customer, multiple violations will accrue.

C. Prior to disconnecting any water service because a condition set forth in subsection (A) above exists, Benson Water shall issue a notice to the customer describing the condition and notifying the customer that the condition must be remedied within fifteen (15) days from the initial inspection date. If there is no immediate action on the part of the customer, a second notice by certified mail shall be sent ten (10) days after the initial inspection date stating that water service will be disconnected within five (5) days of the second notice. If there is still no action, a turn off notice shall be sent to the customer stating that service will be disconnected on a date certain (approximately two (2) days from the date of the turn off notice) (For retrofit notification procedures, see section 13-4-10(Q).

D. Benson Water may disconnect, without notice, water service to any customer when Benson Water discovers that a direct, contaminated cross connection exists in the customer's water system or that a backflow prevention method has been bypassed or removed.

Section 13-4-10(O).ADMINISTRATIVE APPEAL

A. An Administrative appeal may be requested whenever a violation or dispute of any of the requirements of this Code is determined, whether during construction or at the plan review stage, and the applicant wishes to appeal the decision of the staff because of code interpretation, unreasonable hardship or other acceptable reasons. The appeal may be made to the Backflow and Cross Connection Hearing Committee as follows:

1. The applicant shall file a written appeal on the forms provided by the Benson Water Department.
2. The appeal will be heard by the Hearing Committee within seven (7) days, at regular specified time.
3. The Hearing Committee shall consist of the Utilities Manager, the City of Benson Building Inspector, and the City Manager. Additional Inspectors or other technical persons may be added for a particular appeal, at the discretion of the Utilities Manager.
4. Adequate information shall be provided by the applicant in order to fully describe the conditions in question.
5. The applicant may, but is not required to, personally attend the Hearing Committee meeting.
6. If an appeal is denied by the Hearing Committee, the applicant shall comply or appeal to the Benson City Council within ten (10) days of a denial by the Hearing Committee.

Section 13-4-10(P).VIOLATION A CIVIL INFRACTION

A. It shall be a civil infraction punishable pursuant to the Code of the City of Benson for any person, enterprise, or corporation to violate any of the requirement of this Code.

Section 13-4-10(Q).RETROACTIVE APPLICATION

A. The provisions of this Code shall apply to all new water customers or users and all water customers or users existing prior to the enactment date of this Code. Notwithstanding the foregoing, for multiple-metered premises presenting only a pollution hazard as defined in Section 13-4-10(E) existing as of the effective date of this Chapter, only one new or additional backflow prevention assembly shall be required to be installed within eighteen (18) months from the initial inspection notice and thereafter only one additional backflow assembly installation

shall be required during any twelve (12) month period. Noncompliance may result in discontinuance of water service without further notice.

B. Backflow prevention assemblies installed prior to enactment of this article, and which do not comply with the requirements set forth herein, shall be replaced with assemblies which comply with the standards set forth herein, within eighteen (18) months from initial inspection notice.

C. The initial backflow assembly installation permit fee required by Section 13-4-10(R) shall be waived by Benson Water for retrofit backflow prevention assemblies only.

D. Meters documented as running backwards or contamination conditions as defined in Section 13-4-10(E) shall be immediately addressed under the provisions of Section 13-4-10(J), subparagraph (D).

Section 13-4-10(R).FEES

A. The fee for any permit required pursuant to the terms of this article may be established by resolution of the city council