

## GIWA Cross-Connection and Backflow Prevention Plan Summary

- Requires at a minimum that all residential connections have an inline dual check valve for protection.
- Dual check valves are not testable; therefore, must be replaced every five years.
- Dual check valves are allowed for residential connections with an auxiliary water supply for irrigation (well) provided the auxiliary plumbing is not interconnected with the home plumbing. If interconnected, at a minimum a testable double check valve assembly is required. If cisterns are used with the irrigation system, a reduced pressure backflow assembly is required.
- Requires all non-residential connections to at a minimum have a testable double check valve assembly.
- Backflow preventers for non-residential and high hazard connections require testing annually, and residential connections every two years.
- **With the exception of fire suppression systems, GIWA will continue to conduct annual testing free of charge, but member will be responsible for providing satisfactory test results for new installations and after repairs.**
- GIWA will maintain a list of approved “Certified Backflow Preventer Testers”.

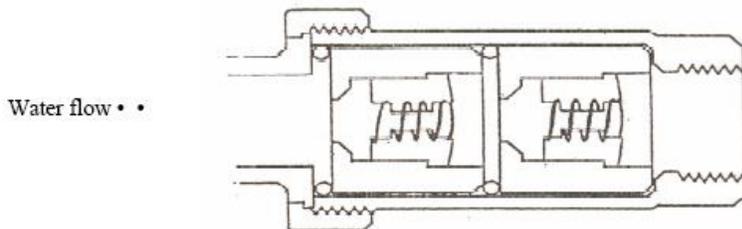
**Residential Service Connection** shall mean any service connection, including any dedicated irrigation or fire service connection, that is two inches or less in diameter and that supplies water to a building, or premises, containing only dwelling units.

### ACCEPTABLE BACKFLOW PREVENTION METHODS

Acceptable backflow prevention methods listed in an increasing level of protection include the following:

- **Dual Check, Residential (DuC)**

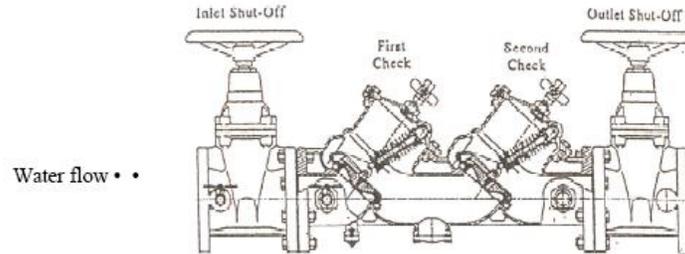
A DuC is similar to a DC in that it is a mechanical backflow preventer consisting of two independently acting, spring-loaded check valves. It usually does not include shutoff valves, may or may not be equipped with test cocks or ports, and is generally less reliable than a DC.



During normal operation, both DuC check valves remain closed until there is a demand for water. In the event of backflow, both checks close to prevent the reversal of flow. A DuC is effective against backpressure backflow and back-siphonage, but should be used to isolate only non-health hazards and is intended for use only in water service connections to single-family homes.

- **Double Check Valve Backflow Assemblies (DC)**

A DC is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves. It includes shutoff valves at each end of the assembly and is equipped with test cocks. During normal operation, both check valves remain closed until there is a demand for water. In the event of backflow, both check valves close preventing reversal of flow. A DC is effective against backpressure backflow and back-siphonage but should be used to isolate only non-health hazards.



- **Double Check Detector Assembly (DCDA )**

A DCDA shall consist of a main-line DC with a bypass (detector) arrangement around the main-line DC that shall contain a bypass water meter and a bypass DC. The DCDA shall be installed as an assembly as designed and constructed by the manufacturer. This assembly shall only be used on fire lines to protect against non-health hazards.

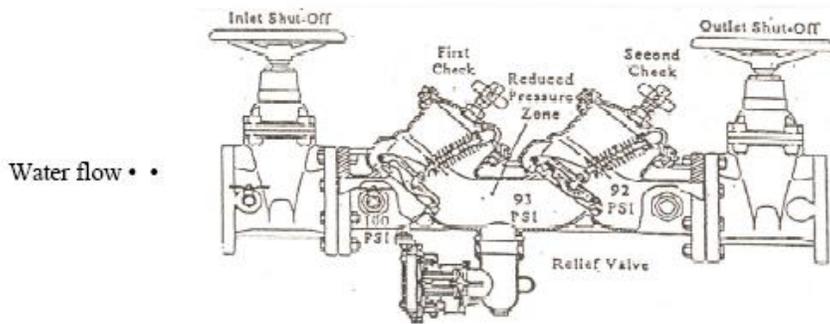
- **Reduced-Pressure Backflow Assemblies (RP)**

An RP is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves with a hydraulically operating, mechanically independent, spring-loaded pressure differential relief valve between the check valves and below the first check valve. It includes shutoff valves at each end of the assembly and is equipped with test cocks. An RP is effective against backpressure backflow and back-siphonage. An RP may be used to isolate health or non-health hazards.

This assembly will indicate leakage through one or both check valves or the relief valve by the discharge of water from the relief valve port. During normal operation, both check valves remain closed until there is a demand for water. The differential relief valve remains closed because the inlet pressure is higher than the pressure in the intermediate zone.

During a backpressure condition, pressure increases downstream of the assembly and both check valves close to prevent backflow. If the second check valve is prevented from closing tightly, leakage back into the zone between the check valves will increase the pressure in the zone and cause the relief valve to open. Water in the zone will then be discharged.

During back-siphonage, the supply pressure drops and the relief valve opens automatically and drains enough water from the zone to maintain pressure in the zone lower than the supply pressure. The second check valve closes to prevent downstream water from draining through the relief valve.

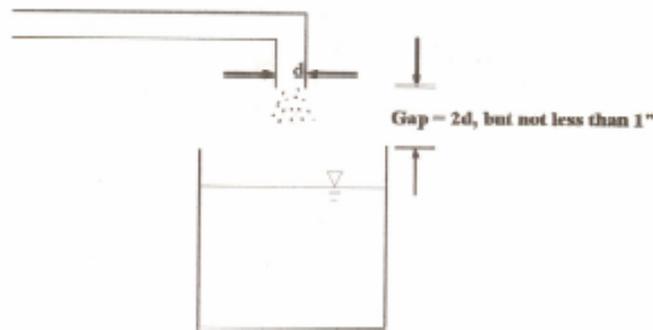


- **Reduced-pressure Detector Assembly (RPDA)**

A RPDA shall consist of a main-line RP with a bypass (detector) arrangement around the main-line RP that shall contain a bypass water meter and a bypass RP. The RPDA shall be installed as an assembly as designed and constructed by the manufacturer. This assembly shall be used on fire lines to protect against health and hazards.

### Air Gap

An air gap is a vertical, physical separation between the end of a water supply outlet and the flood-level rim of a receiving vessel. This separation must be at least twice the diameter of the water supply outlet and never less than one inch. An air gap is considered the maximum protection available against backpressure backflow or back-siphonage but is not always practical and can easily be bypassed.



**BACKFLOW PREVENTION REQUIRED AT SERVICE CONNECTION**

**Minimum Backflow Protection Required at or for the Service Connection from the GIWA to the Member**

| <p style="text-align: center;"><b>Category of Customer</b></p>  | <p style="text-align: center;"><b>Minimum Backflow Protection to Be Provided at or for the Service Connection from the GIWA to the Member</b></p>  |
|---|--|
| <p><b>Residential Connections</b></p>   | <p>At a minimum all residential connections shall be protected with a DuC.</p>   |
|   |  |
| <p><b>Premises where there is an auxiliary or reclaimed water system....</b></p>  |  |
| <p>Auxiliary water system” means a pressurized system of piping and appurtenances using auxiliary water, which is water other than the potable water being supplied by GIWA and which includes water from any natural source such as a well, pond, lake, spring, stream, river, etc., includes reclaimed water, and includes other used water or industrial fluids described in AWWA Manual M14 as incorporated in paragraph 62-555.360(1)(a), F.A.C., and subsection 62-555.360(2), F.A.C.; however, “auxiliary water system” specifically excludes any water recirculation or treatment system for a swimming pool, hot tub, or spa.</p> <p>Reclaimed water is a specific type of auxiliary water and a reclaimed water system is a specific type of auxiliary water system.</p> <p>Upon discovery of any cross-connection between the plumbing system and any reclaimed water system on the customer’s premises, GIWA shall ensure that the cross-connection is eliminated.</p> <p>A DuC may be provided at residential service connections only if there is no known cross-connection between the plumbing system and the auxiliary or reclaimed water system on the customer’s premises. Upon discovery of any cross-connection between the plumbing system and any reclaimed water system on the customer’s premises, GIWA shall ensure that the cross-connection is eliminated. Upon discovery of any cross-connection between the plumbing system and any auxiliary water system other than a reclaimed water system on the customer’s premises, GIWA shall ensure that the cross-connection is eliminated or shall ensure that the backflow protection provided at or for the service connection is equal to that required at or for a non-residential service connection.</p> <p>Reclaimed water regulated under Part III of Chapter 62-610, F.A.C., is a low hazard unless it is stored with surface water in a pond that is part of a stormwater management system, in which case it is a high hazard; well water is a low hazard unless determined otherwise by GIWA; industrial fluids and used water other than reclaimed water are high hazards unless determined otherwise by GIWA; reclaimed water not regulated under Part III of Chapter 62-610, F.A.C., and surface water are high hazards.</p> <p>When the auxiliary supply is a rainwater cistern, it shall be classified as high hazard, and a reduced pressure back-flow assembly shall be required for residential and non-residential service connections.</p> | <p><b>A.</b> At or for a residential service connection where there is no known connection between the plumbing system and the auxiliary or reclaimed water system on the member’s premises: DuC; or RP if the auxiliary water system utilizes cisterns.</p> <p><b>B.</b> At or for a non-residential service connection: DC if the auxiliary or reclaimed water is a low hazard; or RP if the auxiliary or reclaimed water is a high hazard</p> |

|   |  |
|---|--|
| <p><b>Premises where there is an irrigation system using potable water and that...</b></p>  |  |
| <p><b>A.</b> Is connected directly to GIWA’s distribution system via a dedicated irrigation service connection</p> <p><b>B.</b> Is connected internally to the customer’s plumbing system</p>   | <p><b>A.</b> RP if backpressure could develop in the downstream piping, however, a DC may be provided if both of the following conditions are met:</p> <ul style="list-style-type: none"> <li>• The dedicated irrigation service connection initially was constructed before 5-5-14.</li> <li>• No chemicals are fed into the irrigation system</li> </ul> <p><b>B.</b> DuC</p>  |
| <p><b>Premises where there is a wet-pipe sprinkler, or wet standpipe, fire protection system that is using potable water and that...</b></p>  |  |
| <p><b>I.</b> Is connected directly to the GIWA’s distribution system via a dedicated fire service connection</p> <p>Upon discovery of any cross-connection between the fire protection system and any reclaimed water system on the customer’s premises, GIWA shall ensure that the cross-connection is eliminated.</p> <p><b>II.</b> Is connected internally to the customer’s plumbing system</p> | <p><b>I.A.</b> At or for a residential dedicated fire service connection: DuC if the fire protection system contains no chemical additives and is not connected to an auxiliary water system; or RP or RPDA if the fire protection system contains chemical additives or is connected to an auxiliary water system</p> <p><b>I.B.</b> At or for a non-residential dedicated fire service connection: DC or DCDA if the fire protection system contains no chemical additives and is not connected to an auxiliary water system; or RP or RPDA if the fire protection system contains chemical additives or is connected to an auxiliary water system</p> <p><b>II.</b> DuC</p> |

|   |  |
|---|--|
| <b>Commercial, Industrial &amp; Other Connections</b>   |  |
| Commercial, Industrial & Other Connections  | All non-residential service connections shall be at a minimum protected with a DC.   |
| Beverage processing plant, including any brewery  | DC if the plant presents a low hazard; or RP if the plant presents a high hazard   |
| Cannery, packing house, rendering plant, or any facility where fruit, vegetable, or animal matter is processed, excluding any premises where there is only restaurant or food service facility  | RP   |
| Car wash  | RP   |
| Chemical plant or facility using water in the manufacturing, processing, compounding, or treatment of chemicals, including any facility where a chemical that does not meet the requirements in paragraph 62-555.320(3)(a), F.A.C., is used as an additive to the water | RP   |
| Dairy, creamery, ice cream plant, cold-storage plant, or ice manufacturing plant  | RP<br>A DC may be provided if it was installed before 5-5-14; and if such a DC is replaced on or after 5-5-14, it may be replaced with another DC.   |
| Dye plant   | RP   |
| Film laboratory or processing facility or film manufacturing plant, excluding any small, noncommercial darkroom facility  | RP   |
| Hospital; medical research center; sanitarium; autopsy facility; medical, dental, or veterinary clinic where surgery is performed; or plasma center   | RP   |
| Laboratory, excluding any laboratory at an elementary, middle, or high school   | RP   |
| Laundry (commercial), excluding any self-service laundry or Laundromat  | RP   |
| Marine repair facility, marine cargo handling facility, or boat moorage   | RP   |
| Metal manufacturing, cleaning, processing, or fabricating facility using water in any of its operations or processes, including any aircraft or automotive manufacturing plant  | DC if the facility presents a low hazard; or RP if the facility presents a high hazard   |
| Mortuary  | RP   |
| Premises where oil or gas is produced, developed, processed, blended, stored, refined, or transmitted in a pipeline or where oil or gas tanks are repaired or tested, excluding any premises where there is only a fuel dispensing facility                             | RP   |
| Premises where there is a cooling tower   | RP   |
| Radioactive material processing or handling facility or nuclear reactor   | RP   |
| Paper products plant using a wet process  | RP   |
| Plating facility, including any aircraft or automotive manufacturing plant  | RP   |
| Restricted-access facility  | RP   |
| Steam boiler plant  | RP   |
| Tall building - a building with five or more floors at or above ground level  | DC if the customer has no potable water distribution lines connected to the suction side of a booster pump; or RP if the customer has one or more potable water distribution lines connected to the suction side of a booster pump |
| Wastewater treatment plant or wastewater pumping station  | RP   |
| Member supplied with potable water via a temporary service connection from a hydrant  | Hydrant meters are required; GIWA supplies RP with meter   |