

RULE NO.: R161-19.10**NOTICE OF RULE ADOPTION****ADOPTION DATE: May 15, 2019**

By: Greg Meszaros, Director
Austin Water

The Director of the Department of Austin Water has adopted the following rule. Notice of the proposed rule was posted on April 9, 2019. Public comment on the proposed rule was solicited in the April 9, 2019 notice. This notice is issued under Chapter 1-2 of the City Code. The adoption of a rule may be appealed to the City Manager in accordance with Section 1-2-10 of the City Code as explained below.

A copy of the complete text of the adopted rule is available for public inspection and copying at the following locations. Copies may be purchased at the locations at a cost of ten cents per page:

Austin Water, located at 3907 S. Industrial Dr., Ste. 236, Austin, Texas. See Mr. Eric Langhout, P.E.; and

Office of the City Clerk, City Hall, located at 301 West 2nd Street, Austin, Texas.

EFFECTIVE DATE OF ADOPTED RULE

A rule adopted by this notice is effective on May 15, 2019.

TEXT OF ADOPTED RULE

The adopted rule contains no changes from the proposed rule.

R161-19.10: Notice of Adoption to the UCM 2.1, 2.3, and 2.5

UCM 2.1, 2.3, & 2.5

- Section 2.1.0 – This language has been added to describe that any work inside the ROW will be dealt with in the UCM and work in private property will be handled by Plumbing Codes. It was added since 2.3 is being deleted and to let Engineers know where to find guidelines for work in the ROW and private property.
- Section 2.3.0 – This language is not needed in the title.
- Section 2.3.1 – This change is to correct the name of the department and specify inspection duties. Everything is being deleted.
- Section 2.3.2 – This entire section is covered by “The Plumbing Code” for the City of Austin. Chapter 25-12, Article 6, and Chapter 15-1. Everything is being deleted.

- Section 2.3.3 – This entire section is covered by “The Plumbing Code” for the City of Austin. Chapter 25-12, Article 6, and Chapter 15-1. Everything is being deleted.
- Section 2.3.4 – This section is in direct conflict with the plumbing codes. This entire section is covered by “The Plumbing Code” for the City of Austin. Chapter 25-12, Article 6, and Chapter 15-1. Everything is being deleted.
- Section 2.3.5 – This entire section is covered by “The Plumbing Code” for the City of Austin. Chapter 25-12, Article 6, and Chapter 15-1. Everything is being deleted.
- Section 2.5.1.F.11 – All proposed mains and services should have the location, size and material added to the plans as required for the existing mains and services.

The adopted rule contains no changes from the proposed rule. A copy of the complete text of the adopted rule is available for public inspection and copying at the following locations. Copies may be purchased at the locations at a cost of ten cents per page:

Austin Water, located at 3907 S. Industrial Dr., Ste. 236, Austin, Texas. See Mr. Eric Langhout, P.E.; and

Office of the City Clerk, City Hall, located at 301 West 2nd Street, Austin, Texas.

SUMMARY OF COMMENTS

Austin Water did not receive comments regarding the rule adopted in this notice.

AUTHORITY FOR ADOPTION OF RULE

The authority and procedure for adoption of a rule to assist in the implementation, administration, or enforcement of a provision of the City Code is provided in Chapter 1-2 of the City Code. The authority to regulate the installation of water and wastewater facilities is established in the Texas Local Government Code Section 552.001 and Title 15 of the City Code.

APPEAL OF ADOPTED RULE TO CITY MANAGER

A person may appeal the adoption of a rule to the City Manager. **AN APPEAL MUST BE FILED WITH THE CITY CLERK NOT LATER THAN THE 30TH DAY AFTER THE DATE THIS NOTICE OF RULE ADOPTION IS POSTED. THE POSTING DATE IS NOTED ON THE FIRST PAGE OF THIS NOTICE.** If the 30th day is a Saturday, Sunday, or official city holiday, an appeal may be filed on the next day which is not a Saturday, Sunday, or official city holiday.

An adopted rule may be appealed by filing a written statement with the City Clerk. A person who appeals a rule must (1) provide the person's name, mailing address, and telephone number; (2) identify the rule being appealed; and (3) include a statement of specific reasons why the rule should be modified or withdrawn.


Notice that an appeal was filed and will be posted by the city clerk. A copy of the appeal will be provided to the City Council. An adopted rule will not be enforced pending the City Manager's decision. The City Manager may affirm, modify, or withdraw an adopted rule. If the City Manager does not act on an appeal on or before the 60th day after the date the notice of rule adoption is posted, the rule is withdrawn. Notice of the City Manager's decision on an appeal will be posted by the city clerk and provided to the City Council.

On or before the 16th day after the city clerk posts notice of the City Manager's decision, the City Manager may reconsider the decision on an appeal. Not later than the 31st day after giving written notice of an intent to reconsider, the City manager shall make a decision.

CERTIFICATION BY CITY ATTORNEY


By signing this Notice of Rule Adoption R161-19.10, the City Attorney certifies that the City Attorney has reviewed the rule and finds that adoption of the rule is a valid exercise of the Director's administrative authority.

REVIEWED AND APPROVED



Greg Meszaros, Director
Austin Water

Date: 5/9/19



Anne L. Morgan
City Attorney

Date: 5/13/19

2.1.0 - GENERAL

The following information is intended to assist engineers and the general public in the design and construction of water, reclaimed water, and wastewater facilities *within the right-of-way or public easement. All work inside private property shall comply with applicable City of Austin adopted Plumbing Codes with "Local Amendments" for all private plumbing works including those located outside the City's Zoning Jurisdiction.* Information herein is to provide minimum City of Austin requirements only. Sound engineering judgment shall be utilized to determine if these minimum requirements are suitable for each particular engineering design.

2.3.0 - ~~PRIVATE PLUMBING (this section only applies to private plumbing)~~ **RESERVED**

2.3.1 - ~~Plumbing Inspections Outside the City's Zoning Jurisdiction~~

~~Within the zoning jurisdiction of the City of Austin (City) and within the boundaries of other jurisdictions as specified by contract, private plumbing installations shall be inspected by the Planning and Development Review Department (PDR). New private plumbing installations on properties located outside of the zoning jurisdiction of the City for which the City provides direct retail water or wastewater service (outside city installations) shall be inspected by the Planning and Development Review Department.~~

2.3.2 - ~~Adherence to Federal, State, and Local Responsibilities, Rules, and Regulations Relating to Backflow Prevention and Cross Connection Control~~

- ~~A. Backflow prevention assemblies that are installed in private plumbing systems, fire protection systems, process water systems, and/or other private water distribution systems that are directly or indirectly connected to or on properties serviced by the City of Austin's potable water distribution system shall obtain laboratory and field testing approval and listing as backflow prevention devices and assemblies from the University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC FCCC & HR) or other approved agency with field and laboratory testing to American Water Works Association (AWWA) standards and shall be installed in accordance with American Water Works Association manual M 14 and the USC FCCC & HR Manual of Cross Connection Control, Ninth Edition, as amended. It shall be the responsibility of the property owner or the representative of the property owner to provide verification of the required approvals upon request.~~
- ~~B. The installation, maintenance, repair, replacement and operational testing shall strictly conform to the requirements of Chapter 15-1 of the Austin City Code (Cross Connection Control Regulations).~~
- ~~C. To prevent contamination of the potable water system from stagnant water in dead end potable water service lines (e.g., private fire systems, private fire mains, sections for future use, etc.), the installation of an approved backflow prevention assembly is required immediately downstream of the City water meter.~~

~~If the dead end potable water service line is unmetered, then an approved detector backflow prevention assembly is required at a point on the dead end potable water service line where no more than 100 gallons of water volume in the service line is reached. The 100 gallon threshold is determined by calculating the volume of water that would be contained in the service line as measured from the connection to the City's water main and the location of the approved backflow prevention assembly.~~

2.3.3 - ~~Backflow Installation Standards~~

~~Water customers directly connected to or serviced by the City of Austin's potable water or reclaimed water distribution systems will install backflow prevention assemblies to the following minimum standards:~~

- ~~A. Standards common to various backflow prevention assemblies:~~
 - ~~1. All vacuum breakers, pressure vacuum breaker assemblies, double check valve assemblies, and reduced pressure backflow assemblies shall be installed in the vertical or horizontal upright position only and rotated on their axis only as listed by approval agencies identified in Chapter 15-1 of the Austin City Code~~
 - ~~2. All pressure vacuum breaker assemblies, double check valve assemblies, reduced pressure backflow assemblies, and spill resistant vacuum breaker assemblies shall be~~

installed only as an assembly. These assemblies shall not be modified to allow fittings, strainers, or other devices to be installed between the shutoff valves.

3. Assemblies installed over five (5) feet above finished floor or grade shall have a platform for maintenance, testing and repair. Platform designs shall be designed to sound engineering practices and the design sealed by a registered Professional Engineer.
4. Protection from freezing shall be provided if installed in areas subjected to freezing temperatures or conditions.
5. Containment backflow preventers, backflow preventers installed at water meter, and those installed in supply to water heaters and boilers require compliance with Austin Plumbing Code 608.3 as amended, to prevent explosions.
6. Atmospheric vacuum breaker, pressure vacuum breaker, spill proof vacuum breaker, hose bibb vacuum breaker, and reduced pressure backflow assembly installations shall not be in an area where corrosive fumes or gasses could possibly render the assembly inoperative, corroded, or deteriorate the exterior of the assembly, (fume hoods, car washes, chemical storage rooms, etc.).

B. Atmospheric vacuum breakers (AVB) and hose bibb vacuum breakers (HBVB) shall be installed to the following minimum standards:

1. Atmospheric vacuum breakers and hose bibb vacuum breakers shall be installed a minimum of six inches above all downstream piping and the highest point of discharge.
2. Atmospheric vacuum breaker and hose bibb vacuum breaker installations or applications shall not be subjected to back pressure.
3. Shutoff valves shall not be installed downstream of the device.
4. Atmospheric vacuum breakers and hose bibb vacuum breakers shall be installed as a unit and shall not be modified.
5. Atmospheric vacuum breakers and hose bibb vacuum breakers shall not be subjected to operating pressure for more than twelve (12) hours out of a 24 hour period.
6. Hose bibb vacuum breakers shall be a non-removable type.

C. Double Check Valve Assemblies (DCVA) and Double Check Detector Assemblies (DCDA) shall be installed to the following minimum standards:

1. Above Grade or Floor Installations

- a. Installations shall provide a minimum of twelve (12) inches to a maximum of sixty (60) inches clearance between finished grade or finished floor and bottom of the assembly.
- b. A minimum of twenty four (24) inches unobstructed clearance and access shall be provided on the service side of the assembly to permit access for testing, service, repairs, and replacement.
- c. A threaded assembly, not installed between unions and isolation valves for removal, shall be installed with a minimum six (6) inch clearance from its outermost dimension to a wall or other obstruction on the non-service side of the assembly.
- d. A flanged assembly shall be installed with a minimum of twelve (12) inches clearance from its outermost dimension to a wall or other obstruction on the non-service side of the assembly.

2. Below Grade Installations

- a. Test cocks shall be plugged or capped with non-ferrous plugs or caps.
- b. Test cocks shall discharge vertically upward.

~~Note: Fittings may be installed in the test cocks to redirect the discharge vertically upward.~~

- ~~e. A minimum of twenty-four (24) inches unobstructed clearance and access shall be maintained on the service side of the flanged assembly to permit access for testing, service, repairs, and replacement.~~
- ~~d. Double check valve assemblies installed in vaults shall have a minimum of twelve (12) inches clearance to a wall or other obstruction on the non service side of the assembly.~~
- ~~e. Double check valve assemblies installed in vaults shall maintain twelve (12) inches minimum to a thirty six (36) inches maximum clearance from the lowermost point of the backflow prevention assembly to the vault flooring.~~
- ~~f. Double check valve assemblies installed in vaults shall maintain a minimum of six (6) inches to a of thirty six (36) inches maximum clearance from the uppermost portion of the assembly to the underside of a vault lid, with the shutoff valves in the open position.~~
- ~~g. Backflow prevention assembly vaults shall not be installed in roadways driveways or parking lots or areas requiring traffic bearing lids. Vault access openings for flanged assemblies shall not be less than thirty (30) inches in the least dimension. The vault access door shall be hinged and shall be spring assisted as necessary to allow hand opening by a single individual.~~
- ~~h. Threaded Assemblies installed in vaults less than eighteen (18) inches deep shall have a minimum of four (4) inches clearance from the shutoff valves to the inside walls of the vault.~~
 - ~~1) A minimum of four (4) inches clearance shall be maintained from the uppermost part of the threaded Double Check Valve Assembly to the underside of the vault box lid.~~
 - ~~2) A minimum of six (6) inches clearance shall be maintained from the lowermost point of the threaded double check valve backflow prevention assembly to the flooring in the vault.~~
 - ~~3) Vault access openings shall not be less than sixteen (16) inches long and ten and three fourths (10 ³/₄) inches wide.~~
 - ~~4) Installations deeper than eighteen (18) inches below finished grade shall be installed in accordance with the requirements of this section for flanged double check valve assemblies.~~

~~Note: The opening on any vault or box used to house a backflow prevention assembly shall be large enough to permit access for testing, service, repairs, and replacement of the assembly.~~

~~D. Reduced Pressure Backflow Assemblies (RPZ) and Reduced Pressure Detector Assemblies (RPDA) shall be installed to the following minimum standards:~~

- ~~1. A minimum of twenty four (24) inches unobstructed clearance and access shall be maintained on the service side of the assembly to permit access for testing, service, repairs, and replacement.~~
- ~~2. Installations shall provide a minimum of twelve (12) inches to a maximum of sixty (60) inches clearance between finished grade or finished floor and bottom of reduced pressure backflow assembly.~~
- ~~3. Twelve (12) inches minimum clearance shall be maintained above the assembly.~~
- ~~4. Above ceiling installations are not permitted.~~

5. Installations in a pit or below finished grade are not permitted.

6. Threaded Reduced Pressure Backflow Assemblies, not installed between unions and isolation valves for removal, shall be installed with a minimum six (6) inches clearance from their outermost dimension to a wall or other obstruction on the non-service side of the assembly.

7. Flanged Reduced Pressure Backflow Assemblies: shall be installed with a minimum of twelve (12) inches clearance from their outermost dimension to a wall or other obstruction on the non-service side of the assembly.

E. Pressure Vacuum Breaker Assemblies (PVB) shall be installed to the following minimum standards:

1. Installations shall not be less than twelve (12) inches above all downstream piping and the highest point of discharge.

2. Installations or applications will not be subjected to back pressure.

3. Shutoff valves may be installed downstream of the assembly.

4. Installations above ceilings are not permitted.

5. Installations where structural damage may occur are not permitted.

F. Spill Resistant Vacuum Breaker Assemblies (SVB) shall be installed to the same minimum standards listed above for the Pressure Vacuum Breaker Assemblies. The SVB is an improved PVB with features intended to limit water loss during start up and operation, but care should be exercised in selection to minimize potential water damage.

2.3.4 Backflow Prevention Rules and Regulations Pertaining to Sites With Both City Potable Water and Auxiliary Water

A. Auxiliary Water means a water from a source other than the City's potable water supply, or mixture of water and anything else, from any source, which is pressurized for any purpose, use, treatment, or disposal on or available to a site served by the City's potable water system.

The presence of auxiliary water on a site also served by the City's potable water system requires that a backflow prevention assembly be installed at all City water service connections to the site in order to prevent the auxiliary water from contaminating the City's potable water system.

Table 2.3.4. A. includes a partial list of common auxiliary water sources that may be found on sites also serviced by the City's potable water system, the containment backflow protection required at the service points, and the isolation backflow protection required at the point of supply where the City's potable water is used as a backup to an auxiliary water source. The table describes the minimum approved backflow protection required at sites using auxiliary water. These requirements apply to all Austin Water customers. Note that backflow preventers approved for higher levels of protection may be used in place of the minimum required backflow preventer described below:

AG – Air Gap. Approved for all hazards, but its use is not always practical. AG's are the best, or highest level of backflow protection.

RP – Reduced Pressure Zone Backflow Prevention Assembly (also known as RPZ). Approved for all hazards where an air gap would be impractical (exception: sewer). An RP is the best level of approved protection after an Air Gap.

DC – Double Check Backflow Prevention Assembly (also known as DCVB or DCVA). Approved for low hazards only. A DC provides the lowest level of approved protection.

Table 2.3.4. A.

| | | Containment Backflow Protection Required At | | | Isolation Backflow Protection Required at Point of Supply |
|--|------------------|---|----------------------------|--|---|
| List of Pressurized Auxiliary Water Sources and Uses (1) | | Domestic Water Meter (2), (3) | Irrigation Water Meter (3) | City Service to Private Fire Mains (4), (5), (6) | Where Austin is used as Back-up to Auxiliary Water Source |
| Lake/River Water | | RP | RP | RP | RP |
| Well Water | | RP | RP | RP | RP |
| Rainwater Harvesting | | RP | RP | RP | RP |
| Reclaim Water | used on property | RP | RP | DC | AG |
| | used in building | RP | RP | RP | AG |
| Gray Water, Re-Irrigation, Disposal | | RP | RP | RP | AG |
| Other Water Supply (7) | | RP | RP | RP | AG |

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Table Notes:

- (1) All auxiliary water use sites are required to have a Customer Service Inspection performed in addition to the annual operational test of the backflow assemblies.
- (2) Backflow prevention assemblies installed at potable water meters require attention to thermal expansion.
- (3) Backflow prevention assemblies installed at potable and irrigation water meters in conjunction with an auxiliary water source are required to have an annual backflow assembly operational test.
- (4) New backflow prevention assemblies installed in existing fire systems may result in the need to recalculate fire system design specifications due to backflow preventor pressure losses.
- (5) Backflow prevention assemblies installed in un-motorized fire systems are required to be detector assemblies.

(6) DCEs installed on fire systems at reclaimed water use sites are required to have a semiannual operational test

(7) Other includes any and all other defined auxiliary waters not listed in this chart and/or any combination of 2 or more auxiliary waters.

B. Reclaimed Water means reclaimed municipal wastewater that is under the direct control of the City treatment plants, satellite facilities, or a treatment plant with which the City contracts, and that has been treated to a quality that meets or exceeds 30 Texas Administrative Code, Chapter 210 requirements. Reclaimed Water is water which, as a result of treatment of wastewater by a public agency, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.

Because reclaimed water is the product of a final stage of a wastewater treatment process, it is prohibited by the plumbing code from connection or contact at any time for any reason with potable water.

The following rules are intended to insure the prevention of cross contamination of potable water with reclaimed water and other auxiliary waters. All measurements shall be made from the pipe's outside diameter.

1. Pressurized auxiliary water piping shall be separated from potable water piping by a horizontal distance of at least ten (10) feet or any piping within ten (10) feet shall be sleeved.

2. Auxiliary water pipes shall not be run or laid in the same trench as potable water pipes. A ten (10) foot horizontal separation shall be maintained between buried pressurized reclaimed and potable water piping.

3. Buried potable water pipes crossing auxiliary water pipes shall be laid a minimum of twelve (12) inches above the auxiliary water pipes and the auxiliary water piping shall have a minimum twenty (20) foot sleeve centered on the potable water pipe.

4. Auxiliary water irrigation (the edge of the soaking of the applied reclaim water) shall stop ten (10) feet from potable water irrigation heads.

5. Operational or tailwater controls shall be provided to preclude discharge of auxiliary water from irrigation sites.

6. Auxiliary systems shall be designed so that the irrigation spray does not reach any privately owned premises outside the designated irrigation area or reach public drinking fountains.

7. A forty (40) foot protected zone shall be established around a drinking fountain installed in an open field of auxiliary water irrigation. A twenty (20) foot radius of drip irrigation around the drinking fountain surrounded by a twenty (20) foot radius of shrub bubblers shall establish the forty (40) foot protected zone. Pop up spray heads and rotary heads on auxiliary water systems cannot be installed closer than their radius to any potable water outlet and/or protected zones.

8. Hose bibs on reclaimed water systems and hose connections to reclaimed water systems are not permitted

9. Water for housekeeping in areas served with auxiliary water shall be provided from the city potable water source protected by an RPZ at the water meter and/or at the branch off the private potable drinking water system. The line shall be sleeved from the RPZ to an in-ground lockable service box labeled "NON POTABLE CITY WATER DO NOT DRINK." The hose connection in the box shall be a unique connection such as a bayonet stab/twist style with the hose permanently connected to the bayonet without use of garden hose threads. The water valve shall require a special key for valve operation.

10. Hose bibs through and outside the walls of buildings on sites using auxiliary water shall have RPZ water protection on the lines serving the hose bibs. All the hose bibs shall be in

a locked boxes, and may be supplied from a single RPZ, and the piping and locked boxes themselves shall be labeled "NON POTABLE CITY WATER DO NOT DRINK." All hose bib boxes and the water valves themselves shall require a special key for access and operation.

2.3.5 Cross Connection Inspections and Testing Requirements for Sites With Both City Potable Water and Auxiliary Water

The inspections and testing required to confirm the separation of or discover the cross connection between an auxiliary water system and the City's potable water system shall be conducted by City potable water customers upon installation of reclaimed water or other auxiliary water sources used to supply private pressurized water systems inside or outside buildings on sites where City potable water is used for any purpose.

These inspections and tests shall be conducted as follows:

- A. Reclaimed and other auxiliary water piping shall be tested as outlined in this manual.
- B. Inspecting and testing systems. An initial inspection prior to receiving reclaimed water service or the start up of any auxiliary water system and subsequent periodic cross connection inspections and tests shall be performed in addition to a Customer Service Inspection as prescribed by the Texas Commission on Environmental Quality (TCEQ) in TAC 30 Chapter 290 Subchapter D §290.46(j).

The City water customer requesting to use or continue to use reclaimed or any auxiliary water system in addition to City potable water on a site shall employ, at their own expense, a licensed Water Supply Protection Specialist (WSPS) or Customer Service Inspector (CSI) registered with the Austin Water Utility to schedule and perform the customer service inspection prescribed on both the potable and reclaimed and/or auxiliary water systems as follows:

1. Visual System Inspection. Prior to commencing the cross connection testing, a dual system inspection shall be conducted by the WSPS or CSI, (terms hereafter to mean the same as "customer" or "applicant") with direction and oversight of the Authority Having Jurisdiction (as defined in the 2009 Uniform Plumbing Code section 203.0) and other Authorities Having Jurisdiction.
 - a. Source locations of the auxiliary water lines and meter locations of the reclaimed water and potable water lines shall be checked to verify that no modifications were made, or cross connections are visible.
 - b. All pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.
 - c. All valves shall be checked to ensure that valve lock seals are still in place and intact. All valve control door signs shall be checked to verify that no signs have been removed.
2. Cross Connection Test. After all on-site piping has been completed and pressure and flow tested, the following procedure shall be followed by the applicant with direction and oversight of the Authority Having Jurisdiction and other Authorities Having Jurisdiction to determine if a cross connection occurred.
 - a. All water systems shall be activated and pressurized as follows:
 - i. For the initial charging and testing, reclaimed and auxiliary water systems shall not be connected to the auxiliary source until the initial cross connection test has been successfully performed, (i.e., proof there is no cross connection). Water source for testing auxiliary water piping shall be from a potable water supply protected with an installed, tested and reported reduced pressure zone (RPZ) backflow prevention assembly. Since all the piping downstream of the potable

water containment backflow preventer will be subjected to this test, the source of potable water must be taken either from the section between the potable water meter and the containment backflow preventer or from a totally separate source such as a temporary fire hydrant meter and in every case these sources must be backflow protected with an RPZ.

- ii. For both initial and periodic testing, the auxiliary water system shall be shut down at the property owner's system supply cutoff (POSSCO) valve and, in the case of reclaimed water, at the property owner's cut off (RWPOCO) valve. A tee (line size up to 2") shall be provided downstream of the containment backflow preventers in the case of reclaimed water, and the POSSCO valves in the case of all other auxiliary waters (AWFPBV) with a line size (up to 2") full port ball valve for flushing, sampling, and troubleshooting. All water systems' sectional, isolation, and automated control valves shall be in the fully open position throughout this test.
- b. The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the auxiliary water systems are down being examined. The minimum period the auxiliary water system is to remain under test shall be determined on a case by case basis, taking into account the size and complexity of the potable and auxiliary water distribution systems, but in no case shall that period be less than one hour.
- c. At this time, the AWFPBV and other auxiliary water system drain valves shall be fully opened in order to drain the auxiliary water systems.
- d. All potable fixtures and outlets shall be tested and inspected for flow and the time and location of each test shall be logged. Low or no flow from a potable water outlet would indicate that fixture or outlet may be connected to an auxiliary water system.
- e. All auxiliary water fixtures, irrigation sprinkler zones, etc. shall be tested and inspected for flow. Flow from any auxiliary water system outlet shall indicate a cross connection.
- f. While the procedures in Section 2.3.5.B.2.d. above are being performed, periodic checks of all auxiliary water drain openings shall be made looking for the appearance of water. This section of the test is completed and passed if, after completion of the required test period, no unexpected appearance of water is found at the auxiliary water service points (points of use) or at any drains.
- g. For initial tests, secure all drains and refill the auxiliary water systems using the temporary water source established for this purpose in Section 2.3.5.B.2.a.i. above and then purging the air while leaving all (POSSCO) and (RWPOCO) valves shut. For periodic tests, open these valves and start up the auxiliary water systems.
- h. The potable water system shall then be shut down at the #1 Shut off Valve of the containment backflow preventer. A tee shall be provided downstream of the containment backflow preventer with a line size (up to 2") full port ball valve (PWFPBV) for flushing, sampling, and troubleshooting. All water meters should be read and the readings and times recorded.
- i. At this time, the PWFPBV and other potable water system drain valves shall be fully opened in order to drain the potable water system.
- j. The auxiliary water systems shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction. The minimum period the potable water system is to remain depressurized shall be determined on a case by case basis, but in no case shall that period be less than one hour.
- k. All auxiliary water fixtures, irrigation sprinkler zones, etc. shall be tested and inspected for flow. No flow from an auxiliary water outlet would indicate the auxiliary water system may be connected to the potable water system. Likewise, test all potable

water outlets to confirm no flow and no appearance of water at the potable water PWF/PBV and other drains.

- i. If unexpected flows or no flows are detected, resolve cause.
 - m. This cross connection test is considered complete and passing if there is no unexpected flow detected in any of the fixtures or water at the drains, which would have indicated a cross connection. The potable water system may now be repressurized and the system returned to normal.
 - n. If this was an initial test, the site is now approved for setting reclaimed meter and/or connection to, and startup of, the auxiliary water systems.
3. In the event that a cross connection is discovered, the following procedure shall be activated immediately in the presence of the Authority Having Jurisdiction:
- a. Reclaimed water piping shall be shut down at the reclaimed RWPOCO valve at the motor, or auxiliary water at the POSSCO valve, and riser shall be drained.
 - b. All potable water sources to the building shall be shut down at the motor/service connection
 - c. The cross connection shall be uncovered and disconnected.
 - d. The site water piping shall be retested following procedures listed in subsections 2.3.5.B.1. and 2.3.5.B.2. above.
 - e. The potable water system shall be chlorinated with at least fifty (50) ppm chlorine for twenty four (24) hours.
 - f. The potable water system shall be flushed after twenty four hours and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system may be recharged.
- C. An annual inspection of the reclaimed water system following the procedures listed in Sections 2.3.5.B.1. and 2.3.5.B.2. shall be required by the Authority Having Jurisdiction.
- D. A periodic (other than annual) inspection of auxiliary water systems other than reclaimed water following the procedures listed in Sections 2.3.5.B.1. and 2.3.5.B.2. may be approved by the Authority Having Jurisdiction. The frequency shall be determined and may be changed based on system complexity, exposure for modifications, hidden or visible piping, hazardous materials used or stored, history of compliance, etc.
- E. Drawings and Specifications. The Authority Having Jurisdiction may require any or all of the following information to be included with or in the plot plan before a permit is issued for installation and/or operation of a reclaimed or auxiliary water system and for the planning and execution of the periodic inspection and testing of systems.
1. A plot plan drawn to scale and completely dimensioned, showing lot lines and structures, location of all present and proposed potable water supplies and motors, water wells, streams, auxiliary water supply and systems, reclaimed water supply and motors, drain lines, and locations of private sewage disposal systems and one hundred percent expansion areas or building sewer connected to the public sewer.
 2. Details of construction including riser diagrams or isometrics and a full description of the complete installation, including installation methods, construction, and materials as required by the Authority Having Jurisdiction. To the extent permitted by structural conditions, all reclaimed and auxiliary water risers within the toilet room, including appurtenances such as air/vacuum relief valves, pressure reducing valves, etc. shall be installed in the opposite end of the room containing the served fixtures from the potable water risers or opposite walls, as applicable. To the extent permitted by structural conditions, reclaimed and auxiliary water headers and branches off risers shall not be run in the same wall or ceiling cavity of the toilet room where potable water piping is run.

- ~~F. Periodic inspections shall recur from the month of the auxiliary water system startup. Requests for changes to this schedule must be in writing. At no time may a change of schedule be used to avoid a scheduled Customer Service Inspection.~~
- ~~G. Alternate methods for inspection and testing which will confirm separation of, or discover the cross connection between, auxiliary water systems and City potable water supplied systems may be submitted to the Authority Having Jurisdiction and must comply with the requirements set forth in Chapter 301.2 of the Austin Plumbing Code.~~
- ~~H. The performance, witnessing and certification of the inspection and test of Austin Water sites utilizing reclaimed and/or auxiliary water systems shall be treated as Customer Service Inspections as described in the Rules and Regulations for Public Water Systems, 30 TAC Chapter 290 Subchapter D § 290.46(j).~~
- ~~1. A customer service inspection certificate as described and found in the Rules and Regulations for Public Water Systems, 30 TAC Chapter 290 Subchapter D § 290.47(b) shall be completed and delivered to the Austin Water Utility. Additional report on the cross connection inspection and test containing site specific documentation, test data, gauge and meter readings, test preparations and results, etc. may be required.~~
 - ~~2. Individuals with the following credentials shall be recognized as capable of conducting a customer service inspection certification.~~
 - ~~a. Plumbing Inspectors and Water Supply Protection Specialists licensed by the Texas State Board of Plumbing Examiners.~~
 - ~~b. Customer Service Inspectors who have completed a Texas Commission on Environmental Quality (TCEQ) approved course, passed an examination administered by TCEQ, and hold current professional certification or endorsement as a Customer Service Inspector.~~
 - ~~c. Persons wishing to perform Customer Service Inspections for City water customers must first meet with the Austin Water Utility to register, and learn the process, procedures, reporting expectations, and other requirements.~~

2.5.0 - CONSTRUCTION PLAN INFORMATION AND SUBMITTAL REQUIREMENTS

2.5.1 - General

- A. Construction plans for water, reclaimed water, and wastewater service shall be submitted to Austin Water's (AW) Utility Development Services (UDS) - Pipeline Engineering for verification of conformance to the City of Austin Standards and Specifications. The Pre-Construction Meeting must occur within two (2) years of the date of AW plan approval, otherwise they must be resubmitted to the AW review team to ensure compliance with any changes in requirements related to health and safety.
- B. If the provider of service is a Municipal Utility District (MUD), Water Control and Improvement District (WCID) or private utility corporation, then prior approval by the provider of service is also required.
- C. Plans submitted to AW must show approved easements and/or permits on highway and/or railroad crossings.
- D. A Development Permit must be obtained from the Planning and Development Review Department prior to final plan approval.
- E. Plans that include fire lines must have approval by the City of Austin Fire Department and the Planning and Development Review Department.
- F. All water, reclaimed water, and wastewater plans will include the following items:
 - 1. Engineer's dated signature and seal of a Professional Engineer licensed in the State of Texas on each plan sheet.
 - 2. Date of Plans and revisions.
 - 3. North arrow and scale must be shown. The standard horizontal scale for plan and profile sheets shall be 1" = 40', 30' or 20' for the plan view. The vertical scale shall be 1" = 4', 3' or 2'. The same scale shall be used on all plan and profile sheets. For sheets other than plan and profile, horizontal scales of 1" = 40', 30' or 20' may be used as appropriate. The minimum size for plan and profile sheets shall be 22" x 34". Plan view and associated profile shall appear on the same sheet with the plan view at the top half of the sheet.
 - 4. A general location map, showing MAPSCO and grid numbers.
 - 5. Current standard City of Austin Water and Wastewater construction notes.
 - 6. Indicate on the cover sheet, the subdivision file number, include a copy of the service extension form, and show all required permit numbers such as development permit, Texas Department of Transportation permit, railroad crossing permit, etc.
 - 7. Volume and page number of recorded easement and of any temporary working space.
 - 8. For sites and subdivisions, show GIS numbers of all existing mains and appurtenances. For City-funded, City-reimbursed, and City-cost-participation projects, show GIS numbers for all existing and proposed mains and appurtenances.
 - 9. Size, pipe material, and location of main with respect to easements and rights-of way. Existing and proposed mains 24 inches and larger shall be shown by double lines indicating pipe outside diameter.
 - 10. Property lines and dimensions, legal description, lot and block numbers, right-of-way dimensions, and curb and sidewalk locations and street names.
 - 11. Location, size, and material of all existing and proposed water, reclaimed water, and wastewater mains, lines and services. The direction of flow in the wastewater mains shall be indicated on the drawings. City of Austin record drawings for potable water, wastewater, and reuse water may not be reliable. The Engineer is encouraged to collect subsurface

utility data according to American Society of Civil Engineers (ASCE), Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

12. Location, size, and description of other existing and proposed utilities within the limits of construction. Existing and proposed utilities 24 inches and larger shall be shown by double lines indicating the outside diameter.
 13. Curve data for roads, property lines, water, and reclaimed water lines.
 14. Final plat recording or land status report.
 15. Street address for all existing structures shall be shown on the lot(s) where the structures are located.
 16. Pressure zone designation for subject tract and zone boundaries where applicable.
 17. Where water, wastewater, and/or reclaimed water mains cross each other, details shall be shown to indicate compliance with TCEQ requirements.
 18. Typical cross sections showing multiple utilities proposed to be within private streets or easements.
 19. An index on the cover sheet or on the 2nd page of the drawings.
- G. Final plan approval may require additional authorizations such as:
1. Texas Department of Transportation permit.
 2. Railroad permit.
 3. Gas Company permit.
 4. Easement acquisition (Vol. and Page or document number listed on plans).
 5. County approval.
 6. Water District approval.
 7. Municipal Utility District approval.
 8. Texas Department of Health approval.
 9. Texas Commission on Environmental Quality.
 10. Non-occupancy letter.
 11. Service Extension approval.
 12. Planning and Development Review Department approvals.

Source: [Rule No. R161-17.06](#), 5-31-2017.

2.5.2 - Water and/or Reclaimed Water System Plans

- A. All plan view drawings shall include all applicable items listed in the General Requirements above plus the following items:
1. Stations of all proposed connections to existing or proposed mains, if the service line is not perpendicular from the main to the property line.
 2. For proposed connections to mains or facilities to be constructed by others: identify the project by name, the design engineer, and service extension number.
 3. Station numbers for mains shall be identified for beginning points, ending points, points of curvature, points of tangent, points of reverse curve, points of intersection, valves, fire hydrants, other appurtenances and grade breaks.

4. Station numbers shall be identified for the mains where they cross any other utility.
 5. Details of appurtenances shall be shown.
 6. The location of all existing and proposed services, mains, valves, fire hydrants, water meters, and backflow preventers shall be identified.
 7. One hundred year flood plain limits shall be shown.
 8. Proposed and affected existing mains shall be labeled with design velocities at maximum day plus fire flow and at peak hour flow.
 9. Calculated design pressure at highest and lowest lot served shall be shown.
 10. Location (beginning and ending station numbers) and type of thrust restraint shall be shown on the plan view.
 11. Retaining walls, including geogrid, straps, tiebacks and all other components shall be shown.
 12. Culverts, bridges, and other drainage structures shall be shown.
 13. Fire hydrants, located so as not to conflict with ADA features, traffic signal foundations, sign supports, and other surface features.
 14. Geotechnical borings shall be shown (required for City funded projects only).
 15. Auxillary water sources, if any, shall be shown.
- B. A profile drawing shall be provided for all water mains, per Austin City Code, Section 14-11-183 (C)(2), showing all applicable items listed in the General Requirements plus the following items:
1. The existing ground profile and proposed street finish grade or subgrade.
 2. Station numbers and elevations of all utility crossings.
 3. Station numbers and soil geology information at stream crossings to evaluate the need for special surface restoration.
 4. Identify pipe size, percent grade and pipe material to be used including ASTM and/or AWWA designation. If an alternate material is to be allowed, both should be listed (example "DI. or DR14 PVC"). Lines must be included to indicate pipe flowline and crown.
 5. Station numbers and elevations for starting points, ending points, point of intersection, grade breaks, valves, fire hydrants, air release valves, pressure/flow regulating valves and at intermediate points every 100 feet.
 6. Retaining walls, including geogrid, straps, tiebacks, and all other components.
 7. Culverts, bridges and other drainage structures.
 8. Curb elevations at fire hydrant locations.
 9. Geotechnical boring graphic symbols, showing subsurface materials (required for City funded projects only).
 10. Locations by station of restrained pipe, indicating type of restraint.
 11. Beginning and ending stations for encasement.
 12. Air valve vaults, and piping from the main to the vault shall be included in the profile view. The rim elevation for the vault shall be shown along with the ground profile from the main to the vault.

Source: [Rule No. R161-17.06](#), 5-31-2017.

2.5.3 - Wastewater System Plans

- A. All plan view drawings shall include all applicable items listed in the General Requirements mentioned above plus the following items:
1. Station numbers and GIS numbers at all proposed connections to existing or proposed wastewater mains if the service line is not perpendicular from the main to the property line.
 2. For proposed connections to wastewater mains or facilities to be constructed by others, identify the project name, the design engineer and the service extension number.
 3. The location, alignment and structural features of the wastewater main, including manholes and concrete retards, if applicable.
 4. Station numbers and GIS numbers for beginning points, ending points, manholes, clean-outs and other appurtenances.
 5. Details of all required appurtenances.
 6. Location of all existing and proposed wastewater services, mains and manholes.
 7. One hundred year flood plain limits.
 8. A reference noting the field book notes for the original survey.
 9. Retaining walls, including geogrid, straps, tiebacks and all other components.
 10. Culverts, bridges and other drainage structures.
 11. Locations of geotechnical borings (required for City funded projects only).
 12. Locations of bolted manhole covers.
 13. A plan view detail of the invert of each manhole or junction box having three or more pipes connecting to it, regardless of the pipe sizes, or when two pipes connect to a manhole at an angle other than 180 degrees from each other.
 14. Station numbers shall be identified for the mains where they cross any other utility.
- B. A profile view shall be provided for all wastewater mains and shall include all applicable items listed in the general requirements above plus the following items:
1. The existing ground profile and proposed street finish grade or subgrade or finished grade if not under pavement.
 2. Station numbers and elevations of all utility crossings.
 3. Station numbers and soil geology information at stream crossings to evaluate the need for special surface restoration.
 4. Identify the pipe size, percent grade and pipe material to be used including ASTM and/or AWWA designation. If an alternate material is to be allowed, both should be listed (example "DI or PVC"). Lines must be included to indicate pipe flowline and crown.
 5. Station numbers and elevations for starting points, ending points, manholes, clean-outs and at intermediate points every 100 feet.
 6. Elevations shall be indicated on the profile showing the finish floor elevations of all existing structures. If the structure has an active septic tank or other disposal system, the flow line elevation of the plumbing where it exits from the structure is to be indicated. If a lot or tract is vacant, side shots may be required from the middle of each lot to ensure gravity service is possible from the lot to the main.
 7. Peak dry weather flow and peak wet weather flow, as well as the associated velocities in each pipe.
 8. Retaining walls, including geogrid, straps, tiebacks and all other components.
 9. Culverts, bridges and other drainage structures.

10. Rim elevations for manholes.
11. Flow line elevations for all pipe connections at manholes and junction boxes.
12. Geotechnical boring graphic symbols showing subsurface materials (required for City funded projects only).
13. Beginning and ending stations for encasement.

(NOTE: AW plan Approval shall expire three years from the date of current approval. If construction has not begun on the facility within three years of the approval date, Plans must be resubmitted for approval and must include all criteria in effect at the time resubmitted.)

Source: [Rule No. R161-17.06](#), 5-31-2017.