

ORDINANCE NO.

AN ORDINANCE AMENDING CITY CODE CHAPTERS 15-1 AND 25-12 RELATING TO RECLAIMED WATER SYSTEMS AND ALTERNATE WATER SOURCES.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

PART 1. Subsection (E) of City Code Section 15-1-13 (*Special Hazards*) is amended to read as follows:

- (E) Before using a service connection to the City's public water supply, a retail customer who has a service connection to a reclaimed water system must install and test, as applicable, assemblies that meet or exceed the protectiveness of ~~[the following:~~
 - ~~(4)]~~ a reduced pressure backflow assembly at each potable water service connection~~;~~ and
 - ~~[(2)]~~ a double-check valve assembly at each fire line connection at the property line.~~;~~ and
 - ~~[(3)]~~ ~~a single check valve assembly at each reclaimed water service connection.]~~

PART 2. Subsection (B) of City Code Section 25-12-151 (*Plumbing Code*) is amended to add the following provisions to the list of provisions to be deleted and to reorder the chart entries accordingly:

Table 1601.5

Table 1602.4

1602.6

K101.7

PART 3. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to repeal section 103.1.7.

PART 4. Section 203.1 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

203.1 Definition of "alternate water source." The following definition supercedes the definition included in Section 203 of the Uniform Plumbing Code, which applies to all other defined terms:

Alternate Water Source: A [pressurized] water source from a supply [from a source] other than the City's potable water supply. Also known as Auxiliary Water. [A gravity gray water system is also an alternate water source.]

PART 5. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new section 214.1 to read as follows:

214.1 Definition of “Laundry to Landscape System.” The following definition supplements the definitions in Section 214 of the Uniform Plumbing Code:

Laundry to Landscape System: An auxiliary water system utilizing the collection of gray water discharged from clothes washing machines located at a private one- and two-family dwelling for use in landscape irrigation.

PART 6. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new section 218.3 to read as follows:

218.3 Definition of “potable rainwater systems.” The following definition supplements the definitions in Section 218 of the Uniform Plumbing Code:

Potable rainwater system: A plumbing system that utilizes the principle of collecting, storing, using, and treating rainwater from a rooftop or other manmade, aboveground collection surface for the delivery of water that is satisfactory for drinking, culinary, or domestic purposes.

PART 7. Section 601.2.2 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

601.2.2 Color and information. Each system shall be identified with a colored pipe or sleeve and coded with paints, wraps, and materials compatible with the piping. Except as required in Section 601.2.2.1, nonpotable water systems shall have a yellow background with black uppercase lettering, with the words "CAUTION: NONPOTABLE WATER, DO NOT DRINK." Each nonpotable system shall be identified to designate the liquid being conveyed, and the direction of normal flow shall be clearly shown. [For above ground installations t]The minimum size of the letters and length of the color field shall comply with Table 601.2.2. For piping above grade, [T]the background color and [the] required information shall be visible from the floor level and indicated; every 20 feet (6096 mm) but not less than once per room, on both sides of walls or partitions penetrated by the piping, and at least once in every story height traversed by risers [and shall be visible from the floor level]. For piping below grade, [ground installations the minimum size of the letters and length of the color field shall comply with Table 601.2.2. The] the background color and the required information [for underground piping] shall be indicated every 5 feet.

Exception: Existing irrigation systems. Existing systems being converted to an auxiliary water source shall be permitted to allow pipe and components below grade to remain unmarked until disturbed. All repairs, additions, or alterations shall be identified in accordance with this section. All pipe and components located above grade or accessible within a subsurface vault shall be identified in accordance with this section. ~~[Reclaimed water piping must have its background color continuous along the entire length of the piping for both aboveground and underground installations.]~~

PART 8. Table 603.2 in City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended as follows:

TABLE 603.2 BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS						
DEGREE OF HAZARD						
Device, Assembly, or Method ¹	Applicable standards	Degree of Hazard				Installation ^{2,3}
		Pollution (Low Hazard)		Contamination (High Hazard)		
		Back-Siphonage	Back-Pressure	Back-Siphonage	Back-Pressure	
Air gap	ASME A112.1.2	X	—	X	—	See Table 603.3.1 in this chapter.
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	ASME A112.1.3	X	—	X	—	Air gap fitting is a device with an internal air gap and typical installation includes plumbing fixtures, appliances and appurtenances. The critical level shall not be installed below the flood level rim.
Atmospheric vacuum breaker (consists of a body, checking member and atmospheric port)	ASSE 1001 or CSA B 64.1.1	X	—	X	—	Upright position. No valve downstream. Minimum of six (6) inches or listed distance above all downstream piping and flood-level rim of receptor. ^{4,5}
Antisiphon fill valve (ballcocks) for gravity water closet flush tanks and urinal tanks	ASSE 1002 or CSA B 125.3	X	—	X	—	Installation on gravity water closet flush tank and urinal tanks with the fill valve installed with the critical level not less than 1 inch above the opening of the overflow pipe. ^{4,5}
Vacuum breaker wall hydrants, hose bibbs, frost resistant, automatic draining type	ASSE 1019 or CSA B 64.2.1.1	X	—	X	—	Installation includes wall hydrants and hose bibbs. Such devices are not for use under continuous pressure conditions (means of shutoff downstream of device is prohibited). ^{4,5}
Spill-Resistant Pressure Vacuum Breaker (single check valve with air inlet vent and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1056]	X	—	X	—	Upright position. Minimum of twelve (12) inches or listed distance above all downstream piping and flood-level rim of receptor. ⁵

Double Check Valve Backflow Prevention Assembly (two independent check valves and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1015; AWWA C510; CSA B 64.5 or CSA B 64.5.1]	X	X	–	–	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12 inch clearance at bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water.
Double Check Detector Fire Protection Backflow Prevention Assembly (two independent check valves with a parallel detector assembly consisting of a water meter and a double check valve backflow prevention assembly and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1048]	X	X	–	–	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions and not less than a 12 inch clearance at bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.
Pressure Vacuum Breaker Backflow Prevention Assembly (loaded air inlet valve, internally loaded check valve and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1020 or CSA B 64.1.2]	X	–	X	–	Upright position. May have valves downstream. Minimum of twelve (12) inches above all downstream piping and flood-level rim of receptor. May discharge water.
Reduced Pressure Principle Backflow Prevention Assembly (two independently acting loaded check valves, a pressure relief valve and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1047]	X	X	X	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12 inch clearance at bottom for maintenance. May need platform/ladder for test and repair. May discharge water.
Reduced Pressure Detector Fire Protection Backflow Prevention Assembly (two independently acting loaded check valves, a differential pressure relief valve, with a parallel detector assembly consisting of a water meter and a reduced-pressure principle backflow prevention assembly, and means of field testing)	<u>USC FCCCHR⁶</u> [ASSE 1047]	X	X	X	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12 inch clearance at bottom for maintenance. May need platform/ladder for test and repair. May discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.

1) See description of devices and assemblies in this chapter.

2) Installation in pit or vault requires previous approval by the Authority Having Jurisdiction.

3) Refer to general and specific requirement for installation.

4) Not to be subjected to operating pressure for more than twelve (12) hours in any twenty-four (24) hour period.

5) For deck-mounted and equipment-mounted vacuum breaker, see Section 603.5.14.

6) Current List of Approved Backflow Prevention Assemblies, University of Southern California Foundation for Cross-Connection Control and Hydraulic Research

PART 9. Section 603.5.22 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

603.5.22 Site; Containment Backflow Prevention Requirements. Sites utilizing [pressurized] Alternate Water Sources (Auxiliary Water) shall provide an air gap or a mechanical backflow protection device located immediately downstream of all potable City water meters and City service lines to private fire lines in accordance with Table 603.5.

Exception: Nonpotable rainwater catchment or nonpotable condensate collection systems of 500 gallons (1893 L) or less do not require backflow prevention at the potable water meter.

PART 10. Table 603.5 in City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is repealed and replaced with a new Table 603.5 to read as follows:

Table 603.5

List of Auxiliary Water Sources and Uses ⁽¹⁾		Backflow Protection Required At Potable Water Connection			Backflow Protection Required at Point of Interconnection with Potable Water
		Domestic Water Meter ⁽²⁾	Irrigation Water Meter ⁽²⁾	City Service to Private Fire Main ^{(2), (3), (4), (5)}	
Lake/River Water		RP	RP	DC	RP
Well Water		RP	RP	DC	RP
Condensate water	Gravity	—	DC ⁽⁵⁾	DC	RP
	Pumped	RP	RP	DC	RP
Rainwater	Gravity	—	DC ⁽⁵⁾	DC	RP
	Pumped	RP	RP	DC	RP
Gray water	Gravity	—	DC ⁽⁵⁾	DC	AG
	Pumped	RP	RP	DC	AG
Reclaimed Water⁽⁶⁾		RP	RP	DC	AG
Other Water Supply⁽⁷⁾		RP	RP	DC	AG

Table Notes

RP= Reduced Pressure Principle Backflow Prevention Assembly

DC= Double Check Backflow Prevention Assembly

AG= Air Gap

- (1) If multiple sources of auxiliary water are used, all backflow protection must meet the most stringent requirements of the sources used.*
- (2) Backflow prevention assemblies installed at the potable service connection of a site served by an auxiliary water source are required to have an annual operational test.*
- (3) New backflow prevention assemblies installed in existing fire systems may result in the need to recalculate fire system design specifications due to backflow preventer pressure losses.*
- (4) Backflow prevention assemblies installed in un-metered fire systems are required to be detector assemblies.*
- (5) These backflow prevention assemblies are required regardless of the presence of auxiliary water.*
- (6) Where a chemical addition system is used (e.g., fertigation) a DC will be required on the Reclaimed Water service connection.*
- (7) Other Water Supply includes any and all other auxiliary waters not listed in this chart.*

PART 11. Section 1601.2 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

1601.2 System Design. Alternate water source systems in accordance with this chapter shall be designed by a person registered or licensed to perform plumbing design work. Components, piping, and fittings used in an alternate water source system shall be listed.

Exceptions: The following systems may be designed by a person who is not registered or licensed to perform plumbing design work:

- (1) A ~~[person registered or licensed to perform plumbing design work is not required to design nonpotable]~~ rainwater catchment or condensate collection system[s] for irrigating:
 - (a) landscaping of a single family dwelling[s] where the system's outlets, piping, and other [system] components are located on the exterior of the single family dwelling [building], or
 - (b) landscaping other than that of a single family dwelling where the system's maximum storage capacity is 500 gallons (1893 L).
- (2) A ~~[person registered or licensed to perform plumbing design work is not required to design]~~ gravity gray water systems having a maximum discharge capacity of 250 gallons per day (gal/d) (0.011 L/s) for a Homestead Permit as described in section 103.1.3 of this Code for one- and two-family dwellings and townhomes.
- (3) An on-site treated nonpotable water system for a single family dwelling having a maximum discharge capacity of 250 gal/d (0.011 L/s).
- (4) A Laundry to Landscape system.

PART 12. Section 1601.3 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

1601.3 Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered an alternate water source system in a building or on a premise without first obtaining a permit to do such work from the Authority Having Jurisdiction.

Exception: A plumbing permit is not required for gravity type exterior nonpotable rainwater catchment systems ~~[(non-pressurized)]~~ used for

outdoor [~~non-potable~~] applications or nonpotable rainwater catchment or nonpotable condensate collection systems of 500 gallons (1893 L) or less.

PART 13. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new section 1601.3.1 to read as follows:

1601.3.1 Registration Required. All auxiliary water systems shall be required to be registered with the Authority Having Jurisdiction. Registration shall include the following:

- (1) Site address of the auxiliary water system.
- (2) Storage capacity of the auxiliary water system.
- (3) Type of auxiliary water.
- (4) Intended use of the auxiliary water.

Exception: Nonpotable rainwater catchment or nonpotable condensate collection systems of 500 gallons (1893 L) or less do not require registration.

PART 14. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new Table 1601.5 as follows:

TABLE 1601.5	
MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE FREQUENCY	
Inspect and clean filters and screens, and replace (where necessary).	Every 3 months
Inspect and verify that disinfection, filters and water quality treatment devices and systems are operational and maintaining minimum water quality requirements as determined by the Authority Having Jurisdiction.	In accordance with manufacturer's instructions, and the Authority Having Jurisdiction.
Inspect and clear debris from rainwater gutters, downspouts, and roof washers.	Every 6 months
Inspect and clear debris from roof or other aboveground rainwater collection surfaces.	Every 6 months
Remove tree branches and vegetation overhanging roof or other aboveground rainwater collection surfaces.	As needed
Inspect pumps and verify operation.	After initial installation and every 12 months thereafter
Inspect valves and verify operation.	After initial installation and every 12 months thereafter
Inspect pressure tanks and verify operation.	After initial installation and every 12 months thereafter
Clear debris from and inspect storage tanks, locking devices, and verify operation.	After initial installation and every 12 months thereafter
Inspect caution labels and marking.	After initial installation and every 12 months thereafter

Inspect and maintain mulch basins for gray water irrigation systems.	As needed to maintain mulch depth and prevent ponding and runoff.
Cross-connection inspection and test*	After initial installation and every 12 months thereafter
* The cross-connection test shall be performed in accordance with the requirements of this chapter.	

PART 15. Section 1602.1 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to read as follows:

1602.1 General. The provisions of this section shall apply to the construction, alteration, and repair of gray water systems.

Exception: Systems installed under the provisions of Section 1602.16 of this chapter[, ~~City of Austin Laundry to Landscape Program~~].

PART 16. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new Table 1602.4 as follows:

TABLE 1602.4 LOCATION OF GRAY WATER SYSTEM ⁷		
MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	SURGE TANK (feet)	SUBSURFACE AND SUBSOIL IRRIGATION FIELD AND MULCH BED (feet)
Building structures ¹	5 ^{2,9}	2 ^{3,8}
Property line adjoining private property	5	5 ⁸
Water supply wells ⁴	50	100
Sewage pits or cesspools	5	5
Sewage disposal field ¹⁰	5	4 ⁶
Septic tank	0	5
On-site domestic water service line	5	5
Pressurized public water main	10	10
For SI units: 1 foot = 304.8 mm		
Notes: <ol style="list-style-type: none"> Including porches and steps, whether covered or uncovered, breezeways, roofed carports, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances. The distance shall be permitted to be reduced to 0 feet for aboveground tanks where first approved by the Authority Having Jurisdiction. Reference to a 45 degree (0.79 rad) angle from foundation. Where special hazards are involved, the distance required shall be increased as directed by the Authority Having Jurisdiction. Add 2 feet (610 mm) for each additional foot of depth in excess of 1 foot (305 mm) below the bottom of the drain line. For parallel construction or for crossings, approval by the Authority Having Jurisdiction shall be required. The distance shall be permitted to be reduced to 1.5 feet (457 mm) for drip and mulch basin irrigation systems. The distance shall be permitted to be reduced to 0 feet for surge tanks of 75 gallons (284 L) or less. Where irrigation or disposal fields are installed in sloping ground, the minimum horizontal distance between a part of the distribution system and the ground surface shall be 15 feet (4572 mm). 		

PART 17. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new section 1602.6 to read as follows:

1602.6 Prohibited Location. Where there is insufficient lot area or inappropriate soil conditions for adequate absorption to prevent the ponding, surfacing, or runoff of the gray water, as determined by the Authority Having Jurisdiction, no gray water system shall be permitted. A gray water system is not permitted in the Barton Springs Zone, the northern Edwards Aquifer recharge or contributing zone, or in any other geologically sensitive area as determined by the Authority Having Jurisdiction.

PART 18. Section 1602.16 of City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is repealed and replaced to read as follows:

1602.16 Laundry to Landscape System.

1602.16.1 General. The provisions of this section shall apply to the installation, alteration, and repair of Laundry to Landscape Systems.

1602.16.2 System Design. The Laundry to Landscape System shall be designed in accordance with the City approved *Guidelines for the Simple Gray Water Laundry to Landscape System*, and the following:

- (1) Laundry to Landscape Systems shall be designed to divert gray water from clothes washing-machines located at a private one-and-two family dwelling only.
- (2) Laundry to Landscape Systems shall be designed to allow the private residence, by use of one-inch tubing, to direct the flow of gray water from domestic laundry washing machines to the irrigation field for landscape irrigation or diverted to the building sewer.
- (3) Laundry to Landscape Systems shall be designed so that all gray water shall be contained to the site where it is generated without ponding, surfacing, or runoff.
- (4) Laundry to Landscape Systems shall be designed to minimize contact with humans and domestic pets.
- (5) Laundry to Landscape Systems shall be designed so as not be considered a health nuisance.

1602.16.3 Discharge. Laundry to Landscape Systems shall be permitted to discharge to a subsurface irrigation system, a subsoil irrigation system, or a mulch basin. Above ground discharge is prohibited.

1602.16.4 Uses. The Laundry to Landscape System shall only be used to irrigate landscape on the exterior of the structure. Laundry to Landscape Systems shall not be used to irrigate root crops or food crops intended for human consumption that come in contact with soil.

1602.16.5 Prohibited Locations. Laundry to Landscape Systems are prohibited on properties exceeding a three (3) to one (1) slope. All Laundry to Landscape Systems shall comply with Sections 1602.4 and 1602.6.

1602.16.6 Connections to Plumbing System. There shall be no cutting into, or any permanent physical attachment to the plumbing system. A Laundry to Landscape System shall not include a change to, or alteration of, or repair of, any potable water connection, and shall not include any other pump installation other than the pump equipped with, or manufactured as part of a washing machine, and shall not affect, or alter any other building, plumbing, electrical, or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping, or accessibility of the property.

1602.16.7 Permits and Inspections. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered a Laundry to Landscape System in a building or on a premise without first obtaining a permit to do such work from the Authority Having Jurisdiction.

PART 19. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to repeal section 1603.1.2.

PART 20. City Code Section 25-12-153 (*Local Amendments to the Plumbing Code*) is amended to add a new section K 101.7 to read as follows:

K 101.7 Minimum Water Quality Requirements. The minimum water quality for potable rainwater catchment systems shall comply with the applicable potable water quality requirements as determined by the public health Authority Having Jurisdiction and the Texas Commission on Environmental Quality.

PART 21. This ordinance takes effect on _____, 2014.

PASSED AND APPROVED

_____, 2014 §
 §
 § _____
 Lee Leffingwell
 Mayor

APPROVED: _____
 Karen M. Kennard
 City Attorney

ATTEST: _____
 Jannette S. Goodall
 City Clerk

DRAFT