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Sec. 110-475. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning.

- (1) ~~*Air gap.* A complete physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, fixture, receptor, sink, or other assembly and the flood level rim of the receptacle. The vertical, physical separation must be at least twice the diameter of the water supply outlet, but never less than 1.0 inch.~~
- (2) ~~*Atmospheric vacuum breaker.* An assembly containing an air inlet valve, a check seat, and an air inlet port. The flow of water into the body causes the air inlet valve to close the air inlet port. When the flow of water stops the air inlet valve falls and forms a check against back-siphonage. At the same time, it opens the air inlet port allowing air to enter and satisfy the vacuum. Also known as an atmospheric vacuum breaker back-siphonage prevention assembly.~~
- (3) ~~*Backflow prevention.* The mechanical(2) As-built drawing--The final irrigation plan produced at the completion of an irrigation system installation and provided to the irrigation system's owner or the owner's representative. The as-built drawing(s) will reflect all changes made to the original irrigation plan and/or specifications during the construction process and show all aspects of the irrigation system including the dimensions, geometry, and location of all elements of the irrigation system. May be referred to as "record drawings" or "as-builts."~~

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- (3) Backflow prevention. The prevention of reverse flow, ~~or due to~~ back siphonage ~~or backpressure,~~ of nonpotable water from an irrigation system into the potable water ~~sources~~ supply.
- (4) Backflow prevention assembly. ~~Any~~ A mechanical assembly used to prevent backflow into a potable water system. The type of assembly used is based on the ~~existing or potential~~ degree of hazard (health hazard ~~or non-health hazard~~) and ~~backflow condition~~ hydraulic conditions.
- (5) Completion of irrigation system installation. When the landscape irrigation system has been installed, all minimum standards met, all tests performed, and the irrigator is satisfied that the system is operating correctly.
- (6) Consulting. The act of providing advice, guidance, review or recommendations related to landscape irrigation systems.
- (7) Cross-connection. ~~An actual or potential~~ A physical connection between a ~~potable public~~ water ~~source and an irrigation~~ system ~~that and either another supply of unknown or questionable quality,~~ any source which may contain ~~contaminates~~ contaminating or ~~pollutants~~ polluting substances, or any source of water ~~that has been~~ treated to a lesser degree in the treatment process.
- (8) Design. The act of determining the various elements of a landscape irrigation system that will include, but not be limited to, elements such as collecting site specific information, defining the scope of the project, defining plant watering needs, selecting and laying out emission devices, locating system components, conducting ~~hydraulics~~ hydraulic calculations, identifying any local regulatory requirements, or scheduling irrigation work at a site. Completion of the various components will result in an irrigation plan.
- (9) Design pressure. The pressure that is required for an emission device to operate properly ~~- and in conjunction with the head to-head spacing requirement.~~ Design pressure is ~~calculated by adding~~ the sum of the minimum operating pressure ~~necessary at~~ of an emission device to the total of all pressure losses accumulated from ~~an~~ the emission device to the water source.
- (10) Double check valve Assembly. An assembly that is composed of two independently acting, ~~approved~~ check valves, including tightly ~~closed~~ closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. Also known as a double check valve backflow prevention assembly.
- (11) Emission device. Any device that is contained within an irrigation system and that is used to apply water. Common emission devices in an irrigation system include, but are not limited to, spray and rotary sprinkler heads, and drip irrigation emitters.
- (12) Employed. ~~Engaged or hired to provide consulting services or perform any activity relating to the sale, design, installation, maintenance, alteration, repair, or service to irrigation systems. A person is employed if that person is~~ The state of being engaged or hired to provide irrigation services and of being in an employer-employee relationship as defined by Internal Revenue Code, 26 United States Code Service, §Section 3212(d) based on the behavioral control, financial control, and the type of relationship involved in performing employment related tasks.
- (13) ~~Head-to-head spacing.~~ ~~The spacing.~~ ~~Exempt business owner--an owner of spray or rotary heads equal to a business who employs a licensed irrigator to supervise the irrigation services performed by the business as referenced in Texas Occupations Code, Chapter 1903.~~
- (14) Graywater--wastewater from showers, bathtubs, handwashing lavatories, sinks that are used for disposal of household or domestic products, sinks that are not used for food preparation or disposal, and clothes-washing machines. Graywater does not include wastewater from the washing of material, including diapers, soiled with human excreta or wastewater that has come into contact with toilet waste

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- (15) Head-to-head spacing. The spacing emission devices such that the distance between them is within the manufacturer's published radius of the headrange and the water spray reaches from device to device. A deviation of 10% or less is acceptable.
- (14)16) Health hazard. A cross-connection or potential cross-connection with an irrigation system that involves contamination hazard, or other situation involving any substance that may, if introduced into the potable water supply, can cause death or illness, spread of disease, or have has a high probability of causing such effects if introduced into the potable drinking water supply.
- (45)17) Hydraulics. The science of dynamic and static water; the mathematical computation of determining pressure losses and/or pressure requirements of an irrigation system.
- (16) Installer. A person who actually connects an irrigation system to a private or public raw or potable water supply system or any water supply, who is licensed according to title 30, Texas Administrative Code, chapter 30 (relating to Occupational Licenses and Registrations).
- (47)18) Irrigation inspector. A person water district operator, governmental entity, or licensed irrigation inspector who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor and is required to be licensed under title 30, Texas Administrative Code, chapter Title 30, Chapter 30 (relating to occupational licenses, Occupational Licenses and registrations). Registrations, or a licensed plumbing inspector.
- (48)19) Irrigation plan. A scaled drawing of a landscape irrigation system which lists required information to be installed. The irrigation plan shall meet all the scope of the project requirements contained in Texas Administrative Code Title 30, Part 1, Sections 344.60 - 344.65 and represents the changes made in the installation is provided as an as-built drawing to the owner or owner's representative upon completion of the irrigation system installation.
- (49)20) Irrigation services. Selling All activities involving an irrigation system including selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.
- (20)21) Irrigation system. An A system permanently installed on a site and that is composed of an assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate any, reduce dust, and control erosion in any type of landscape vegetation in any location, and/or to reduce dust or control erosion. This term does not include a system that is used on or by an agricultural operation as defined by Texas Agricultural Code, §Section 251.002 or connected to a groundwater well used by a property owner for domestic use as defined by Texas Government Code, § 401.006 (e) Administrative Code Title 30, Part 1, Section 297.1(19).
- (24)22) Irrigation technician. A person who works under the supervision of a licensed irrigator to install, maintain, alter, repair, service or supervise installation of an irrigation system, perform irrigation services including the connection of such an irrigation system in or to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under title 30, Texas Administrative Code, chapter Title 30, Chapter 30 (relating to occupational licenses and registrations).
- (22)23) Irrigation zone. A subdivision of an irrigation system with a matched precipitation rate based on plant material type (such as turf, shrubs, or trees), microclimate factors (such as sun/shade ratio), topographic features (such as slope) and soil conditions (such as type (sand, loam, clay, or combination) or for), and hydrological control.
- (23)24) Irrigator. A person who sells, designs, offers consultations regarding, installs, maintains, alters, repairs, performs irrigation services and/or supervises the installation of an irrigation

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system, including the connection of such system to a private or public, raw or potable water supply system or any water supply, and who is required to be licensed under ~~title 30, Texas Administrative Code, chapter Title 30, Chapter 30 (relating to occupational licenses and registrations).~~

- ~~(24) Irrigator-in-charge. The irrigator responsible for all irrigation work performed by an exempt business owner, including, but not limited to obtaining permits, developing design plans, supervising the work of other irrigators or irrigation technicians, and installing, selling, maintaining, altering, repairing, or servicing a landscape irrigation system.~~
- (25) *Landscape irrigation.* The science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf.
- (26) *License.* An occupational license that is issued by the Texas Commission on Environmental Quality (TCEQ) under ~~title 30, Texas Administrative Code, chapter 30 (relating to occupational licenses and registrations)~~ Title 30, Chapter 30 to an individual that authorizes the individual to engage in an activity that is covered by ~~title 30, Texas Administrative Code, chapter Title 30, Chapter 30.~~
- (27) *Mainline.* A pipe within an irrigation system that delivers water from the water source to the individual zone valves.
- (28) *Maintenance checklist.* A document made available to the irrigation system's owner or owner's representative that contains information regarding the operation and maintenance of the irrigation system, including, but not limited to: checking and repairing the irrigation system, setting the automatic controller, checking the rain or moisture sensor, cleaning filters, pruning grass and plants away from irrigation emitters, using and operating the irrigation system, the precipitation rates of each irrigation zone within the system, any water conservation measures currently in effect from the water purveyor, the name of the water purveyor, a suggested seasonal or monthly watering schedule based on current evapotranspiration data for the geographic region, and the minimum water requirements for the plant material in each zone based on the soil type and plant material where the system is installed.
- ~~(29) Major maintenance, alteration, repair, or service. Any activity that involves opening to the atmosphere the irrigation main line at any point prior to the discharge side of any irrigation zone control valve. This includes, but is not limited to, repairing or connecting into a main supply pipe, replacing a zone control valve, or repairing a zone control valve in a manner that opens the system to the atmosphere.~~
- ~~(30) Master valve. A remote control valve located after the backflow prevention device assembly that controls the flow of water to the irrigation system mainline.~~
- ~~(3130) Matched precipitation rate.~~ The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.
- ~~(3231) New installation.~~ An irrigation system installed at a location where one did not previously exist or is a complete replacement of an existing irrigation system.
- ~~(3332) Non-health hazard.~~ A cross-connection ~~or potential cross-connection from a landscape irrigation system that involves contamination hazard, or other situation involving~~ any substance that generally ~~would will~~ not be a health hazard but ~~would will~~ constitute a nuisance or be aesthetically objectionable if introduced into the ~~potable public~~ water supply.
- ~~(3433) Non-potable water.~~ Water that is not suitable for human consumption. Non-potable water sources include, but are not limited to, irrigation systems, lakes, ponds, streams, gray water that is discharged from washing machines, dishwashers or other appliances, water vapor condensate from cooling towers, reclaimed water, and harvested rainwater.

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- (3534) *Pass-through contract.* A written contract between a contractor or builder and a licensed irrigator or exempt business owner to perform part or all of the irrigation services ~~relating to an irrigation system~~A pass-through contract is also referred to as a sub-contract.
- (3635) *Potable water.* Water that is suitable for human consumption- and meets the definition of drinking water in Title 30, Part 1, Section 290.38(23).
- (3736) *Pressure vacuum breaker.* An assembly ~~containing that contains~~ an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. Also known as a pressure vacuum breaker back-siphonage prevention assembly.
- (3837) *Reclaimed water.* Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.
- (3938) *Records of landscape irrigation activities.* The irrigation plans, contracts, warranty information, invoices, copies of permits, and all other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system services.
- (4039) *Reduced pressure principle backflow prevention assembly.* An assembly containing two independently acting approved check valves together with a hydraulically operating mechanically independent pressure differential relief valve located between the two check valves and below the first check valve.
- ~~(41) *Static water pressure.* The pressure of water when it is not moving.~~
- (4240) *Supervision.* The on-the-job oversight and direction by a licensed irrigator who is fulfilling his or her professional responsibility to the client and/or employer in compliance with local ~~or~~and state requirements. Also performed by a licensed installer working under the direction of a licensed irrigator or, beginning January 1, 2009, an irrigation technician who is working under the direction of a licensed irrigator to install, maintain, alter, repair or service an perform irrigation system services
- ~~(43)-(41) *Temporary Irrigation System.* A temporarily installed, above ground system of pipes and component parts used to distribute water to the landscaping of a site for the establishment of plant growth, reduction of dust, and erosion control. Temporary irrigation systems must meet the requirements in Title 30, Part 1, Section 344.66.~~
- (42) *Water conservation.* The design, installation, service, and operation of an irrigation system in a manner that prevents the waste of water, promotes the most efficient use of water, and applies the least amount of water that is required to maintain healthy individual plant material or turf, reduce dust, and control erosion.
- (4443) *Zone flow.* A measurement, in gallons per minute or gallons per hour, of the actual flow of water through a zone valve, calculated by individually opening each zone valve and obtaining a valid reading after the pressure has stabilized. For design purposes, the zone flow is the total flow of all nozzles in the zone at a specific pressure.
- (4544) *Zone valve.* An automatic valve that controls a single zone of a landscape irrigation system.
(Ord. No. 2009-01-009, § 2, 1-20-2009)

Sec. 110-476. - Valid license required.

- (a) Any person who connects an irrigation system to the water supply within the city or in the city's extraterritorial jurisdiction (ETJ) must hold a valid license, as defined by chapter 30, title 30 of the Texas Administrative Code and required by chapter 1903 of the Texas Occupations Code.

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- (b) Exception: A property owner is not required to be licensed in accordance with Texas Occupations Code, ~~title 12, §Section~~ 1903.002(c)(1), if he or she is performing irrigation work in a building or on a premises owned or occupied by the person as the person's own residence. A home or property owner who installs an irrigation system must meet the standards contained in title 30, Texas Administrative Code, chapter 344 regarding spacing, water pressure, spraying water over impervious materials, rain or moisture shut-off devices or other technology, and isolation valves. The city may, at any point, adopt more stringent requirements for a home or property owner who installs an irrigation system.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-477. - Permit required.

- (a) Any person installing an irrigation system connected to the city's water system is required to obtain a permit from the city, which permit will remain valid for six months from the date of issuance. If completion and written request for city inspection of irrigation system installation, as provided in this article, are not both performed within six months, then permit renewal will be required. Any plan approved for a permit must be in compliance with the requirements of this article. If the permit includes installation of a new water meter, then a utility impact and other fees may be required under this chapter. Such permits and approvals as are required under this article may be obtained from the public works director, or his designated representative.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)(b) Any change that results in rerouting of a zone or addition of a zone requires a permit.~~

Sec. 110-478. - Backflow prevention methods and devices.

~~(a) Any irrigation system that is connected to the potable water supply must be connected through a backflow prevention method approved by the Texas Commission on Environmental Quality (TCEQ). The backflow prevention device must be approved by the American Society of Sanitary Engineers; or the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California; or the city plumbing code; or any other laboratory that has equivalent capabilities for both the laboratory and field evaluation of backflow prevention assemblies, as determined by the building official. The backflow prevention device must be installed in accordance with the laboratory approved standards or, if the laboratory does not include specific installation information, the manufacturer's current published recommendations.~~

~~(a) All backflow prevention assemblies installed per this chapter shall be installed according to manufacturer's recommendations and provided with sufficient clearance to facilitate testing.~~

~~1. No assemblies are permitted in the public right of way, as defined in Section 90-224 of the City's Code of Ordinances.~~

- (b) If conditions ~~exist~~ that present a health hazard ~~exist~~, one of the following ~~methods must~~types of backflow prevention shall be used ~~to prevent backflow~~:

(1) An air gap may be used if: ~~installed per the definition of Air Gap in Section 110-475, herein.~~

~~a. There is an unobstructed physical separation; and~~

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- ~~b. The distance from the lowest point of the water supply outlet to the flood rim of the fixture or assembly into which the outlet discharges is at least one inch or twice the diameter of the water supply outlet, whichever is greater.~~
- (2) Reduced pressure principle backflow prevention assemblies may be used if installed per subsection (a) of this section and:
- a. The device assembly is installed at a minimum of 12 inches above ground in a location that will ensure that the assembly will not be submerged; and
 - b. Drainage is provided for any water that may be discharged through the ~~assembly~~-relief valve.
- (3) Pressure vacuum breakers may be used if:
installed per subsection (a-~~Ne~~) of this section and:
- a. There is no actual or potential for a back-pressure condition ~~will occur~~; and
 - b. The device assembly is installed at a minimum of 12 inches above any downstream piping and the highest downstream opening. Pop-up sprinklers are measured from the retracted position from the top of the sprinkler.
- ~~(4) Atmospheric, Spill-resistant pressure~~ vacuum breakers may be used if:
installed per subsection (a-~~Ne~~) of this section and:
- a. There is no actual or potential for a back-pressure ~~will be present; condition; and~~
 - ~~b. There are no shutoff valves downstream from the atmospheric vacuum breaker;~~
- ~~e.~~ The device assembly is installed at a minimum of ~~six~~12 inches above any downstream piping and the highest downstream opening. Pop-up sprinklers are measured from the retracted position from the top of the sprinkler;
- ~~d. There is no continuous pressure on the supply side of the atmospheric vacuum breaker for more than 12 hours in any 24-hour period; and~~
 - ~~e. A separate atmospheric vacuum breaker is installed on the discharge side of each irrigation control valve, between the valve and all the emission devices that the valve controls.~~
- ~~(c) Backflow prevention devices used in applications designated as health hazards must be tested upon installation and annually thereafter.~~
- ~~(d)~~(c) If there are no conditions that present a health hazard, double check valve backflow prevention assemblies may be used to prevent backflow if the device assembly is tested upon installation, and:
- ~~(1) Backpressure caused by an elevation of pressure in the discharge piping by pump, or elevation of piping above the supply pressure which could cause a reversal of the normal flow of water or back-siphonage conditions caused by a reduced or negative pressure in the irrigation system, exist; and~~
 - ~~(2) Test cocks are used for testing only.~~
- ~~(e) If a double~~(1) Test cocks are used for testing only.
- (d) Double check valve ~~is~~assemblies installed below ground shall meet the following installation requirements:
- (1) Test cocks ~~must~~shall be plugged, except when the double check valve is being tested;
 - (2) Test cock plugs ~~must~~shall be threaded, water-tight, and made of non-ferrous material; and
 - ~~(3) A y-type strainer is installed on the inlet side of the double check valve;~~

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~~(4) There mustshall be a clearance between any fill material and the bottom of the double check valve around the entire assembly to allow space for testing and repair; and.~~

~~(5) There must be space on the side of the double check valve to test and repair the double check valve.~~

(e) At a minimum, all backflow prevention assemblies shall be tested by a licensed backflow prevention assembly tester upon installation, repair, replacement, or relocation. Those backflow prevention assemblies used in irrigation systems designated as health hazards shall be tested annually.

(f) ~~If an~~An irrigation system ~~is~~ connected to a potable water supply through a double check valve, pressure vacuum breaker, or reduced pressure principle backflow assembly ~~and, which~~ includes an automatic master valve on the system, the automatic master valve mustshall be installed on the discharge side of the backflow prevention assembly.

(g) The irrigator shall ensure the backflow prevention deviceassembly is tested prior to being placed in service, and the test results shall be provided to the city and to the irrigation system's owner or owner's representative within ten business days of testing of the backflow prevention deviceassembly.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-479. - Specific conditions and cross-connection control.

(a) Before any chemical is added by any method (aspiration, injection, etc.) to an irrigation system which is connected to the potable water supply, the irrigation system mustshall be connected through a reduced pressure principle backflow prevention assembly or air gap.

~~(b) Irrigation system components treated with chemical additives and connected to any potable water supply shall be connected through a reduced pressure principle backflow prevention assembly.~~

(c) Connection of any additional water source to an irrigation system that is connected to the potable water supply can only be ~~done~~made if the irrigation system is connected to the potable water supply through a reduced-pressure principle backflow prevention assembly or an air gap.

~~(c) Irrigation system components with chemical additives induced by aspiration, injection, or emission system connected to any potable water supply must be connected through a reduced pressure principle backflow device.~~

(d) If an irrigation system is designed or installed on a property that is served by an on-site sewage facility, as defined in chapter 285 of title 30, Texas Administrative Code, then:

(1) all irrigation piping and valves mustshall meet the separation distances from the on-site sewage facility system as required for a private water line in Texas Administrative Code, title 30, section 285.91(10); concerning the minimum required separation distances for on-site sewage facilities

~~(2) Any~~(2) the irrigation system is designated a health hazard and any connections using a private or public potable water source that is not the city's potable water system must be connected to the water source through a reduced pressure principle backflow prevention assembly as defined in Texas Administrative Code, title 30, section 344.50; and

(3) Any water from the irrigation system that is applied to the surface of the area utilized by the on-site sewage facility system mustshall be controlled on a separate irrigation zone or zones so as to allow complete control of any irrigation to that area so that there will not be excess water that would prevent the on-site sewage facility system from operating effectively.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

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Sec. 110-480. - Water conservation.

All irrigation systems shall be designed, installed, maintained, altered, repaired, serviced, and operated in a manner that will promote water conservation as defined in this chapter.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-481. - Irrigation plan design: minimum standards.

- (a) A licensed irrigator shall prepare ~~ana~~ site-specific irrigation plan for each ~~site-new irrigation system~~ where a new irrigation system will be installed. ~~A paper or electronic copy of the~~ The irrigation plan must be on the job site ~~at all times~~ during the installation of the irrigation system. ~~A drawing showing the actual and must be consulted for~~ installation of the system is to be provided to each irrigation system owner after all new irrigation system installations. During the installation of the irrigation system, variances from the original irrigation plan may be authorized by the licensed irrigator if the variance from the irrigation plan does not:
- ~~(1) Diminish the operational integrity of the irrigation system;~~
 - ~~(2) Violate any requirements of this article; and,~~
 - ~~(3) Go unnoted in red on the irrigation plan.~~
- (b) The irrigation plan must ~~include 100 percent~~ show that the irrigation system provides complete coverage of the area ~~all areas~~ to be irrigated. ~~If a system does not provide 100 percent coverage of the area~~ there are areas on the site that are not to be irrigated, ~~they~~ must be noted ~~clearly identified~~ on the irrigation plan.
- (c) All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:
- (1) The irrigator's seal, signature, and date of signing;
 - (2) All major physical features in accordance with subsection (b) of this section including, but not limited to, property lines, streets, sidewalks, buildings, fences, flower bed lines, and the boundaries of the areas to be watered;
 - (3) A north arrow;
 - ~~(4) A legend;~~
 - (4) A legend; showing the symbols used in the irrigation plan and an accurate description of what the symbol represents;
 - (5) The zone flow measurement for each zone; which includes the zone/controller station number and the zone valve size;
 - (6) Location and type of each:
 - a. Controller;
 - b. Sensor (for example, but not limited to, rain, moisture, wind, flow, or freeze);
 - (7) ~~Location, type, and size of each:~~
 - ~~a. Water source, such as, but not limited to~~ specifications for all irrigation system components to a water meter and point(s) of connection;
 - ~~b. Backflow prevention device;~~

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~~c. Water emission device, including~~include, but not limited to, ~~spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays~~location, type, size, manufacturer, model number, operating pressure, flow range, radius of throw;

~~d. Valve, including but not limited to, zone valves, master valves, and isolation valves;~~

~~e. Pressure regulation component; and~~

~~f. Main line and lateral piping.~~

(8) The scale used; and

(9) The design pressure.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~(d) During the installation of the irrigation system, changes from the original plan may be authorized by the licensed irrigator if they are clearly documented in red ink on the irrigation plan and the change does not:

(1) diminish the operational integrity of the irrigation system; and

(2) violate any requirements of this chapter.

(e) All changes to the irrigation plan shall be documented as an as-built drawing.

Sec. 110-482. - Design and installation: minimum requirements.

(a) No irrigation design or installation shall require the use of any component, including the water meter, in a way which exceeds the manufacturer's published performance limitations for the component.

(b) Spacing.

(1) The maximum spacing between emission devices must not exceed the manufacturer's published radius or spacing of the device(s). The radius or spacing is determined by referring to the manufacturer's published specifications for a specific emission device at a specific operating pressure ~~allowing for 100 percent coverage. In no instance shall the spacing exceed plus or minus 10% of the manufacturer's published radius or spacing of the device(s).~~

(2) New irrigation systems shall not utilize above-ground spray emission devices in landscapes that are less than 48 inches, not including the impervious surfaces, in either length or width and which contain impervious pedestrian or vehicular traffic surfaces along two or more perimeters. ~~If pop~~

(3) Pop-up ~~sprays~~spray heads or rotary ~~sprinkler heads are used in a new irrigation system, the~~ sprinkler heads must direct flow away from any adjacent surface and shall not be installed closer than four inches from a hardscape, such as, but not limited to, a building foundation, fence, concrete, asphalt, pavers, or stones set with mortar.

~~(3)~~ Narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public areas may be exempted from this requirement by the irrigation inspector if the runoff drains into a landscaped area.

(c) Water pressure. Emission devices must be installed to operate at the optimum or recommended sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. If an optimum or recommended pressure is not published, then the emission devices must be installed to operate at not below the minimum and not above the maximum sprinkler head pressure as published by the manufacturer for the nozzle and head spacing that is used. Methods to achieve the water pressure requirements include, but are not limited to, flow control valves, a pressure regulator, or pressure compensating spray heads.

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- (d) Piping. ~~Piping~~ Polyvinyl chloride (PVC) piping in irrigation systems must be designed and installed so that the flow of water in the pipe will not exceed a velocity of five feet per second ~~for polyvinyl chloride (PVC) pipe.~~
- (e) Irrigation zones. Irrigation systems shall have separate zones based on plant material type, microclimate factors, topographic features, soil conditions, and hydrological requirements.
- (f) Matched precipitation rate. Zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate.
- (g) Irrigation systems shall not spray water on or over any surfaces made of impervious material including but not limited to concrete, asphalt, brick, wood, stones set with mortar, ~~or any other impervious material, such as, but not limited to,~~ walls, fences, sidewalks, and streets, etc.
- (h) A master valve shall be installed on the discharge side of the backflow prevention device on all new installations.
- (i) PVC pipe primer solvent. All new irrigation systems that are installed using PVC pipe and fittings shall be primed with a colored primer prior to applying the PVC cement in accordance with the city plumbing code.
- (j) Isolation valve. All new irrigation systems must include a lockable isolation valve between the water meter and the backflow prevention device.
- ~~(k)~~ (k) Rain or moisture shut-off devices or other technology. All new automatically controlled irrigation systems must include sensors or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall. Rain or moisture shut-off technology must be installed according to the manufacturer's published recommendations. Repairs to existing automatic irrigation systems that require replacement of an existing controller must include a sensor or other technology designed to inhibit or interrupt operation of the irrigation system during periods of moisture or rainfall.
- l) Depth coverage of piping. Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.
 - (1) If the manufacturer has not published specifications for depth coverage of piping, the piping must be installed to provide minimum depth coverage of six inches of select backfill, between the top of the top most pipe and the natural grade of the topsoil. All portions of the irrigation system that fail to meet this standard must be noted on the irrigation plan ~~/as-built drawing~~ . If the area being irrigated has rock at a depth of six inches or less, select backfill may be mounded over the pipe. Mounding must be noted on the irrigation plan ~~/as-built drawing~~ and discussed with the irrigation system owner or owner's representative to address any safety issues.
 - (2) If a utility, man-made structure or roots create an unavoidable obstacle, which makes the six-inch depth coverage requirement impractical, the piping shall be installed to provide a minimum of two inches of select backfill between the top of the topmost pipe and the natural grade of the topsoil.
 - (3) All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.
- ~~(m)~~ (m) Wiring irrigation systems:
 - (1) Underground electrical wiring used to connect an automatic controller to any electrical component of the irrigation system must be listed by Underwriters Laboratories as acceptable for burial underground;
 - (2) Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation;

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- (3) Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer; and
- (4) Underground electrical wiring that connects an automatic controller to any electrical component of the irrigation system must be buried with a minimum of six inches of select backfill.

~~(m)~~ Water contained within the piping of an irrigation system is deemed to be non-potable. No drinking or domestic water usage, such as, but not limited to, filling swimming pools or decorative fountains, shall be connected to an irrigation system. If a hose bib (an outdoor water faucet that has hose threads on the spout) is connected to an irrigation system for the purpose of providing supplemental water to an area, the hose bib must be installed using a quick coupler key on a quick coupler installed in a ~~covered purple~~ valve box with a colored-coded purple lid or cover and the hose bib and any hoses connected to the bib must be labeled "non potable, not safe for drinking." An isolation valve must be installed upstream of a quick coupler connecting a hose bib to an irrigation system.

~~(n) Beginning January 1, 2010, either a~~ A licensed irrigator or ~~a~~ licensed irrigation technician shall be on-site at all times while the landscape irrigation system is being installed. When an irrigator is not onsite, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

(p) Valve boxes. A valve box shall be used as a durable, rigid enclosure for valves and/or any other irrigation system components that require subsurface protection.

Sec. 110-483. - Completion of irrigation system installation.

Upon completion of the irrigation system, the irrigator or irrigation technician who provided the on-site supervision for the ~~on-site~~ installation shall be required to ~~complete~~provide four items:

- (1) A final "walk through" with the irrigation system's owner or the owner's representative to explain the operation of the system;
- (2) A~~The completed~~ maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative and who shall sign, date, and seal the checklist. If the irrigation system's owner or owner's representative is unwilling or unable to sign the maintenance checklist, the irrigator shall note the time and date of the refusal on the irrigation system's owner or owner's representative's signature line. The irrigation system owner or owner's representative will be given the original maintenance checklist and a duplicate copy of the maintenance checklist shall be maintained by the irrigator. The items on the maintenance checklist shall include but are not limited to:
 - a. The manufacturer's manual for the automatic controller, if ~~the system~~one is ~~automatic~~used;
 - b. The number and labeling of all zones shall be listed, and a copy of this list shall be placed within the controller;
 - c. A seasonal (spring, summer, fall, winter) watering schedule based on either current/real time evapotranspiration or monthly historical ~~reference~~ evapotranspiration ~~(historical ET)~~ data, monthly effective rainfall estimates, plant landscape coefficient factors, and site factors;
 - d. A list of irrigation system components, ~~such as the~~ (nozzle, ~~or~~ pump filters, ~~and other such components etc.~~) that require maintenance and the recommended frequency for the service; and
 - e. The statement, "This irrigation system has been installed in accordance with all applicable state ~~and~~regulations as well as applicable local laws, ordinances, rules, ~~regulations~~ or orders. I have tested the system and determined that it has been installed according to the

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Irrigation Plan or As-built drawing and is properly adjusted for the most efficient application of water at this time."

- (3) A permanent sticker printed with waterproof ink which contains the irrigator's name, license number, company name, telephone number and the dates of the warranty period shall be affixed to each automatic controller installed by the irrigator or irrigation technician. If the irrigation system is manual, the sticker shall be affixed to the original maintenance checklist. ~~The information contained on the sticker must be printed with waterproof ink and include the irrigation plan indicating the actual installation of the system; and~~
- (4) The irrigation plan/as-built drawing indicating the actual installation of the system must be provided to the irrigation system's owner or owner/owner's representative.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-484. - Maintenance, alteration, repair, or service of irrigation systems.

~~(a) The irrigator is responsible for all work that the irrigator performed during the maintenance, alteration, repair, or service of an irrigation system during the warranty period. The irrigator or business owner is not responsible for the professional negligence of any other irrigator who subsequently conducts any irrigation service on the same irrigation system.~~

~~(b)~~ (a) All trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system must be backfilled and returned to the original grade with suitable soil free of any objects that could damage the plumbing of the irrigation system. The backfill must be compacted ~~select backfill~~ such that a depression does not develop.

~~(1) In the event of an alteration, an irrigation plan design may be required.~~

(b) Colored polyvinyl chloride PVC pipe primer solvent must be used on all PVC pipes and fittings used in the maintenance, alteration, repair, or service of an irrigation system in accordance with the ~~city plumbing code~~ City's Code of Ordinances.

~~(c)~~ (c) When maintenance, alteration, repair or service of an irrigation system involves excavation work at the water meter or at a point upstream of the backflow prevention ~~device assembly~~, an isolation valve shall be installed, if an isolation valve is not ~~present~~.

~~(Ord. No. 2009-01-009, § 2, currently installed per Title 30, Part 1-20-2009), Section 344.62(k) of the Texas Administrative Code.~~

Sec. 110-485. - Reclaimed water.

Reclaimed water may be utilized in landscape irrigation systems if:

- (1) There is no direct contact with edible crops, unless the crop is pasteurized before consumption;
- (2) The irrigation system does not spray water across property lines that do not belong to the irrigation system's owner;
- (3) The irrigation system is installed using purple components;
- (4) The domestic potable water line providing water to the site is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with §Title 30, Part 1, Section 290.47(f) of the Texas Administrative Code;

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- (5) A minimum of an eight--inch by eight--inch sign, in English and Spanish, is prominently posted on/in the area that is being irrigated, that reads, "RECLAIMED WATER - DO NOT DRINK" and "AGUA DE RECUPERACIÓN - NO BEBER"; and
- (6) Backflow prevention on the reclaimed water supply line shall be in accordance with the city's plumbing code.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

110-486. - Temporary Irrigation Systems.

- (a) Temporary irrigation systems must be installed by a licensed irrigator or an irrigation technician under the supervision of a licensed irrigator.
- (b) Temporary irrigation systems must meet the backflow prevention requirements in Texas Administrative Code Title 30, Part 1, Chapter 344, Subchapter E.
- (c) Temporary irrigation systems must be installed in accordance with Texas Administrative Code Title 30, Part 1, Section 344.1(45).
- (d) Temporary irrigation systems must have a definite end date, at which time the temporary irrigation system must be removed.

Sec. 110-486487. - Duties and responsibilities of city irrigation inspectors.

(a) A licensed irrigation inspector shall enforce this article, and shall be responsible for:

- (1) ~~(4)~~—Verifying that the appropriate permits have been obtained for an irrigation system ~~and~~;
- (2) ~~Verifying~~ that the irrigator ~~and installer or~~, irrigation technician, ~~if applicable, are~~ water operator is licensed;
- (23) Inspecting the irrigation system;
- (34) Determining that the irrigation system complies with the requirements of this article;
- (45) Determining that the appropriate backflow prevention device was installed, tested, and test results provided to the city;
- (56) Investigating complaints related to irrigation system installation, maintenance, alteration, repairs, or service of an irrigation system and advertisement of irrigation services; and
- (67) Maintaining records of landscape irrigation activities according to this article.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

(b) Each inspector shall maintain a log of all irrigation systems inspected that includes, but is not limited to, the system location, property owner, irrigator responsible for installation, permit status, problems noted during the inspection, and date of the inspection. The log must be kept for three years. The log shall be available for review within two business days of the request by authorized representatives of the commission or any regulatory authority with jurisdiction over landscape irrigation issues in the area the inspector is employed to inspect.

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Sec. 110-487488. - Items not covered by this article.

Any irrigation item not covered by this article and required by law shall be governed by the Texas Occupations Code, the Texas Water Code, Title 30 of the Texas Administrative Code, and any other applicable state statute or Texas Commission on Environmental Quality (TCEQ) rule.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-488489. - Fees.

A schedule of fees for obtaining and renewing an irrigation permit, in amounts sufficient to cover the city's costs in issuing and renewing said permits, including, but not limited to, staff time and other overhead costs, will be maintained by the chief building official. Notwithstanding the above, a plan review fee of \$100.00 for residential irrigation plans and \$200.00 for commercial irrigation plans shall be paid upon the initial submission and upon any re-submission of said plans to the city in accordance with this article.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~

Sec. 110-489490. - Enforcement.

- (a) The public works director, or his designated representative, is hereby authorized and directed to administer and enforce the provisions of this article. Any person, firm, corporation or agent who shall violate a provision of this article, or fails to comply therewith, or with any of the requirements thereof, is subject to suit for injunctive relief as well as prosecution for criminal violations. Any violation of this article is declared to be a nuisance.
- (b) Any person violating any provision of this article shall, upon conviction, be subject to a misdemeanor fine. Each day that a provision of this article is violated shall constitute a separate offense. An offense under this article is a class C misdemeanor, punishable by a fine up to \$2,000.00.

~~(c) Any duty, burden, or requirement imposed on an irrigator or other person performing landscape irrigation work by this Article or by any other law or regulation pertaining to landscape irrigation design, installation, repair or maintenance may be imposed on an owner or occupant of the subject property, or agent or representative of an owner or occupant of the subject property if that person, persons, corporation, firm, association, or other entity:~~

~~(1) does not provide to the irrigator or other person performing landscape irrigation work reasonable access to the subject property to perform work required by this article or by any other law or regulation pertaining to landscape irrigation design, installation, repair or maintenance; or~~

~~(2) does not provide to an irrigation inspector or other enforcement official upon request the name, business address, telephone number, irrigator's license number, and driver's license number of the irrigator or other person who performed or is performing the landscape irrigation work at the subject property.~~

(d) Nothing in this article shall be construed as a waiver of the city's right to bring a civil action to enforce the provisions of this article and to seek remedies as allowed by law, including, but not limited to the following:

- (1) Injunctive relief to prevent specific conduct that violates this article or to require specific conduct that is necessary for compliance with this article; and
- (2) Other available relief.

~~(Ord. No. 2009-01-009, § 2, 1-20-2009)~~