

Residential Irrigation Systems

General information

A permit is required for the installation of landscape irrigation systems, which must comply with the requirements of the International Plumbing Code, and as amended by Section 608.16.5 Connections to Lawn Irrigation Systems. A backflow prevention device is required at the connection to the water supply, and must be independently tested by a licensed backflow tester.

State law allows a homeowner to perform this work on their homestead. However, any other person performing this work shall be a licensed plumber or irrigator that is registered as a contractor with the City of Lewisville.

Fees

A permit fee is required.

Inspections

An inspection will be required upon completion of work.

Online Contractor Registration, Application and Inspections

Effective October 1, 2019, the City of Lewisville's NEW online permitting & inspections system can be found at www.mygovernmentonline.org.

You must create an account in order to register as a contractor, apply for permits or request inspections.

To create an account...

Click CREATE ACCOUNT in the upper right corner of the home page, fill out all required fields, then click CREATE ACCOUNT.

To register as a contractor...

Hover your cursor over PERMITS & LICENSING in the upper left corner of the home page, then click APPLY ONLINE. While filling out the application, select PERMIT when asked which "Project Type" you're applying for. Select CONTRACTOR REGISTRATION when asked which "Application Type" you're applying for. Fill out all required fields and submit your completed application for review.

To apply for a permit...

Hover your cursor over PERMITS & LICENSING in the upper left corner of the home page, then click APPLY ONLINE. While filling out the application, select PERMIT when asked which “Project Type” you’re applying for. Select IRRIGATION - RESIDENTIAL when asked which “Application Type” you’re applying for. Fill out all required fields and submit your completed application for review.

To request an inspection...

You must first search for and locate the permit for which you would like to request an inspection. Hover your cursor over PERMITS & LICENSING in the upper left corner of the home page, then click SEARCH PERMITS. Once you locate your permit, click the REQUEST INSPECTION button on the right side of the permit listing. Fill out all required fields, then click ADD.

Contact our Customer Support Line at 866-957-3764, extension #1, for assistance with online accounts, applications and inspections.

608.16.5 Connections to Lawn Irrigation Systems

Valid License Required. Any person who connects an irrigation system to the water supply within the city or the city's extraterritorial jurisdiction (ETJ) must hold a valid license, as defined by Title 30, Texas Administrative Code, Chapter 30 and required by Chapter 1903 of the Texas Occupations Code, or as defined by Chapter 365, Title 22 of the Texas Administrative Code and required by Chapter 1301 of the Texas Occupations Code.

Exemptions. A property owner is not required to be licensed in accordance with Texas Occupations Code, Title 12, §1903.002(c)(1) if he is performing irrigation work in a building or on a premises owned or occupied by the person as the person's home. A home or property owner who installs an irrigation system must meet the requirements of this ordinance and the standards contained in Title 30, Texas Administrative Code, Chapter 344 regarding spacing, water pressure, spraying water over impervious materials, rain, moisture or freeze shut-off devices or other technology, backflow prevention and isolation valves. See Texas Occupations Code §1903.002 for other exemptions to the licensing requirement.

Permit Required. Any person installing an irrigation system within the city is required to obtain a permit from the city. Any plan approved for a permit must be in compliance with the requirements of this chapter. Permits for the installation of an irrigation system within the city shall be obtained from the Building Inspections Division of the Neighborhood Services Department.

Exemptions:

- (1) An irrigation system that is an on-site sewage disposal system, as defined by Section 355.002, Health and Safety Code; or
- (2) An irrigation system used on or by an agricultural operation as defined by Section 251.002, Agriculture Code; or
- (3) An irrigation system connected to a groundwater well used by the property owner for domestic use.

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 city only permits the installation of double check valves for backflow prevention device and must be approved by University of Southern California for both the laboratory and field evaluation of backflow prevention assemblies. The backflow prevention device must be installed in accordance with the laboratory approval standards or if the approval does not include specific installation information, the manufacturer's current published recommendations.

- (b) 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 is tested upon installation and test cocks are used for testing only.
- (c) If a double check valve is installed below ground:
- (1) Test cocks must be plugged, except when the double check valve is being tested;
 - (2) Test cock plugs must be threaded, water-tight, and made of non-ferrous material;
 - (3) A y-type strainer is installed on the inlet side of the double check valve;
 - (4) There must be a clearance between any fill material and the bottom of the double check valve 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.
- (d) If an existing irrigation system without a backflow-prevention assembly requires major maintenance, alteration, repair, or service, the system must be connected to the potable water supply through an approved, properly installed backflow prevention method before any major maintenance, alteration, repair, or service is performed.
- (e) If 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 includes an automatic master valve on the system, the automatic master valve must be installed on the discharge side of the backflow prevention assembly.
- (f) The irrigator shall ensure the backflow prevention device is tested by a licensed Backflow Prevention Assembly Tester prior to being placed in service and the test results provided to the local water purveyor and the irrigation system's owner or owner's representative within ten business days of testing of the backflow prevention device

Specific Conditions and Cross-Connection Control.

- (a) Before any chemical is added to an irrigation system connected to the potable water supply, the irrigation system must be connected through a reduced pressure principle backflow prevention assembly or air gap.
- (b) Connection of any additional water source to an irrigation system that is connected to the potable water supply can only be done 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 Title 30, Texas Administrative Code, Chapter 285, then:

- (1) all irrigation piping and valves must meet the separation distances from the On-Site Sewage Facilities system as required for a private water line in Title 30, Texas Administrative Code, Section 285.91(10);
- (2) 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 Title 30, Texas Administrative Code, 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 must 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 Facilities system from operating effectively.

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 the Definitions section of this ordinance [section 608.16.5].

Irrigation Plan Design: Minimum Standards.

- (a) An irrigator shall prepare an irrigation plan for each site where a new irrigation system will be installed. A paper or electronic copy of the irrigation plan must be on the job site at all times during the installation of the irrigation system. A drawing showing the actual installation of the system is due to each irrigation system owner after all new irrigation system installations. During the installation of the irrigation system, variances from the original plan may be authorized by the licensed irrigator if the variance from the plan does not:
 - (1) Diminish the operational integrity of the irrigation system;
 - (2) Violate any requirements of this ordinance [section 608.16.5]; and
 - (3) Go unnoted in red on the irrigation plan.
- (b) The irrigation plan must include complete coverage of the area to be irrigated. If a system does not provide complete coverage of the area to be irrigated, it must be noted 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 and the boundaries of the areas to be watered;
 - (3) A North arrow;
 - (4) A legend;
 - (5) The zone flow measurement for each zone;

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- (6) Location and type of each:
 - (A) Controller; and
 - (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 a water meter and point(s) of connection;
 - (B) Backflow prevention device;
 - (C) Water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays;
 - (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.

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.
 - (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-up sprays 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 if the runoff drains into a landscaped area.
- (c) Water pressure. Emission devices must be installed to operate at 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.
- (d) Piping. 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 over surfaces made of concrete, asphalt, brick, wood, stones set with mortar, or any other impervious material, such as, but not limited to, walls, fences, sidewalks, streets, etc.
- (h) Master valve. When provided, 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 Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).
- (j) Rain, moisture or freeze 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, rainfall or freezing. Rain, moisture or freeze 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, rainfall or freezing. As of January 1, 2010 all existing irrigation systems, except those systems for single-family properties, shall be retrofit with rain, moisture and freeze shut-off sensor devices. Existing single-family properties shall be exempt from the retrofit provision, except when repair/replacement provisions outlined above take place.
- (k) Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.
- (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.

This handout is for informational purposes only and should not be relied on in place of official regulations and/or policies. The CITY OF LEWISVILLE makes no representations, guarantees, or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the handout. Customers and citizens are personally responsible for complying with all local, state and federal laws pertaining to projects within the city. Copies of the CITY OF LEWISVILLE adopted codes and Zoning Ordinances can be found on the city website at <http://www.cityoflewisville.com> or at the CITY OF LEWISVILLE [151 W. Church Street, Lewisville, Texas 75057](http://www.cityoflewisville.com).

- (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 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. 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 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 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) 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.
 - (3) Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.
 - (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.
- (n) 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 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.
- (o) Beginning January 1, 2010, either 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.

Completion of Irrigation System Installation. Upon completion of the irrigation system, the irrigator or irrigation technician who provided supervision for the on-site installation shall be required to complete 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) The maintenance checklist on which the irrigator or irrigation technician shall obtain the signature of the irrigation system's owner or owner's representative and 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 is automatic;
 - (B) 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;
 - (C) A list of components, such as the nozzle, or pump filters, and other such components; that require maintenance and the recommended frequency for the service; and
 - (D) The statement, "This irrigation system has been installed in accordance with all applicable state and local laws, ordinances, rules, regulations or orders. I have tested the system and determined that it has been installed according to the Irrigation Plan and is properly adjusted for the most efficient application of water at this time."
- (3) A permanent sticker 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.
- (4) The irrigation plan indicating the actual installation of the system must be provided to the irrigation system's owner or owner representative.

Maintenance, Alteration, Repair, or Service of Irrigation Systems.

- (a) The licensed 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) All trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system must be returned to the original grade with compacted select backfill.
- (c) Colored PVC pipe primer solvent must be used on all pipes and fittings used in the maintenance, alteration, repair, or service of an irrigation system in accordance with the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605).
- (d) When maintenance, alteration, repair or service of an irrigation system involves excavation work at the water meter or backflow prevention device, an isolation valve shall be installed, if an isolation valve is not present.

Reclaimed Water. Reclaimed water may be utilized in landscape irrigation systems if:

- (a) There is no direct contact with edible crops, unless the crop is pasteurized before consumption;
- (b) The irrigation system does not spray water across property lines that do not belong to the irrigation system's owner;
- (c) The irrigation system is installed using purple components;
- (d) The domestic potable water line is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with Title 30, Texas Administrative Code, Section 290.47(i) (relating to Appendices);
- (e) 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
- (f) Backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the city's water provider.