

Landscape Irrigation Policy

Purpose

Travis County Water Control and Improvement District No. 17 (the District) owns and operates water treatment and distribution systems to provide retail municipal water service to customers within its boundaries. Under 30 Tex. Admin. Code § 344 (2009)(Tex. Comm'n on Env't'l Quality) and Texas Water Code § 49.238, the District may establish and enforce irrigation regulations.

The following Policy sets forth uniform minimum requirements for irrigation system design, installation, operation and maintenance within Water District 17:

1. to ensure the water efficient design and operation of irrigation systems, and promote water conservation.
2. to ensure customers of the District receive properly designed and installed irrigation systems.
3. to protect the potable water system from harmful pollutants which might be drawn into the system through cross connection with irrigation systems.
4. to enable the District to comply with the provisions of 30 Tex. Admin. Code § 344 (2009)(Tex. Comm'n on Env't'l Quality), Texas Water Code § 49.238, and all other applicable provisions in Texas statutes and regulations relating to irrigation systems.

This Policy shall apply to the installation of new irrigation systems and existing systems undergoing alteration repair or service for all users of the District's water system. The Policy requires the approval of designs, authorizes the issuance of irrigation permits, and provides for monitoring, compliance, and enforcement activities related to irrigation systems.

Exemptions

The following activities shall be exempt from the provisions of this Policy:

1. landscape irrigation using hand held hose.
2. landscape irrigation by systems using treated wastewater effluent.
3. operation of irrigation systems for maintenance or repair.
4. flushing of water mains for main clearance and maintenance of water quality.
5. landscape irrigation for the purpose of watering in fungicides, insecticides and herbicides as required by the manufacturer or by Federal or State laws.

6. dust control irrigation.

Administration

Except as otherwise provided herein, the District's General Manager shall administer, implement, and enforce the provisions of this Policy. Any powers granted to or duties imposed upon the District may be delegated by the General Manager to other District personnel.

Definitions

The following words and terms, when used in this Policy, have the following meanings, unless the context clearly indicates otherwise.

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.
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 prevention of reverse flow, or back siphonage, of non-potable water from an irrigation system into the potable water source.
4. Backflow prevention assembly--Any assembly used to prevent backflow into a potable water system. The type of assembly used is based on the existing or potential degree of health hazard and backflow condition.
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 connection between a potable water source and an irrigation system that may contain contaminants or pollutants 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 limited to, elements such as collecting site specific information, defining the scope of the project, defining plant watering needs, selecting and laying out sprinkler heads, locating system components, conducting hydraulics 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. Design pressure is calculated by adding the operating pressure necessary at an emission device to the total of all pressure losses accumulated from an emission device to the water source. Design pressure is also the manufacturer's published minimum operating pressure.
10. Double Check Valve--An assembly that is composed of two independently acting, approved check valves, including tightly closed 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 in an employer-employee relationship as defined by Internal Revenue Code, 26 United States Code Service, §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 of spray or rotary heads equal to the manufacturers' published radius of the head.
14. Health hazard--A cross-connection or potential cross-connection with an irrigation system that involves any substance that may, if introduced into the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.
15. Hydraulics--The science of dynamic and static water; the mathematical computation of determining pressure losses and pressure requirements of an irrigation system.
16. Inspector--A licensed plumbing inspector, water district operator, other governmental entity, or irrigation inspector who inspects irrigation systems and performs other enforcement duties for a municipality or water district as an employee or as a contractor.
17. 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 Chapter 30 of the Texas Administrative Code.
18. Irrigation inspector--A person 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 Chapter 30 of the Texas Administrative Code.
19. Irrigation Permit--A permit established and issued by the District under the District Service Rules and Policies section 3.4 for the installation of a sprinkler or irrigation system.

20. Irrigation plan--A scaled drawing of a landscape irrigation system which lists required information, the scope of the project, and represents the changes made in the installation of the irrigation system.
21. Irrigation services--Designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.
22. Irrigation system--An assembly of component parts that is permanently installed for the controlled distribution and conservation of water to irrigate 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, §251.002.
23. 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, including the connection of such 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 Chapter 30 of the Texas Administrative Code.
24. 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 sand, loam, clay, or combination) or for hydrological control.
25. Irrigator--A person who sells, designs, offers consultations regarding, installs, maintains, alters, repairs, services or supervises the installation of an irrigation 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 Chapter 30 of the Texas Administrative Code.
26. Irrigator-in-Charge--The irrigator responsible for all irrigation work performed by an entity, 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.
27. Landscape irrigation--The science of applying water to promote or sustain growth of plant material or turf.
28. License--An occupational license that is issued by the commission under Chapter 30 of the Texas Administrative Code to an individual that authorizes the individual to engage in an activity that is covered by this chapter.
29. Mainline--A pipe within an irrigation system that delivers water from the water source to the individual zone valves.
30. 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.

31. 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.
32. Master valve--A remote control valve located after the backflow prevention device that controls the flow of water to the irrigation system mainline.
33. Matched precipitation rate--The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.
34. New installation--An irrigation system installed at a location where one did not previously exist or a system where one or more new zone valves are added to an existing system.
35. Non-health hazard--A cross-connection or potential cross connection from a landscape irrigation system that involves any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced into the potable water supply.
36. 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.
37. Pass-through contract--A written contract between a licensed irrigator and a third party wherein a licensed irrigator or exempt business owner agrees to perform part or all of the irrigation services relating to an irrigation system.
38. Policy--The District's Landscape Irrigation Policy which establishes the minimum requirements for irrigation system design, installation, operation and maintenance within the District's boundaries in accordance with 30 Tex. Admin. Code § 344 (2009)(Tex. Comm'n on Env't'l Quality) and Texas Water Code § 49.238.
39. Potable water--Water that is suitable for human consumption.
40. Pressure Vacuum Breaker--An assembly containing 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.

41. Reclaimed water--Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.
42. Records of landscape irrigation activities--The design notes, irrigation plans, contracts, warranty information, invoices, advertisements, copies of permits, and other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system.
43. 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.
44. Static water pressure--The pressure of water when it is not moving.
45. 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 state requirements. Also 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 irrigation system.
46. 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.
47. Zone flow--A measurement, in gallons per minute, of the actual flow of water through a zone valve, calculated by individually opening each zone valve for three minutes and measuring the average gallons per minute of water used for the second and third minute of flow. For design purposes, the zone flow is the total flow of all nozzles in the zone at a specific pressure.
48. Zone valve--An automatic valve that controls a single zone of a landscape irrigation system.

Qualifications for Irrigators and Installers

All irrigators, installers, irrigation technicians and irrigation inspectors doing irrigation work of any kind in Water District 17 shall be qualified and conduct their practice in accordance with the standards of conduct outlined in of 30 Tex. Admin. Code § 344 (2009)(Tex. Comm'n on Env't'l Quality) and Texas Water Code § 49.238, and all other applicable provisions in Texas statutes and regulations relating to irrigation systems, irrigators, and installers.

Permitting and Design Approval

An irrigation permit may be issued by the District for the installation, alteration, repair or service of irrigation systems within the District boundaries. Two copies of the irrigation design plan shall be submitted to the District at the time of application for an irrigation permit. Also required at the time of application will be a copy of the components and specifications for the following:

- 1.) Reduced Pressure Zone Device (RPZ);
- 2.) Master Valve;
- 3.) Controller;
- 4.) Rain Sensor; and
- 5.) Isolation Valve.

Every effort will be made to expedite plan approval and complete it within three (3) business days. If the inspector / plan reviewer finds problems with the design, he will contact the irrigator so that appropriate changes can be made. Approved plans will be returned to the irrigator or property owner / manager. An irrigation permit will not be issued until the design has been approved by the District.

A plan and irrigation permit will also be required for any in ground alterations made to an existing irrigation system; however, no permit will be required for minor repairs. Adding additional zones or heads is considered an alteration. If an existing system is being modified, existing double check backflow preventers must be replaced with the RPZ type at the time the modifications are performed.

Inspection

When the irrigation system has been installed, the irrigator shall have the RPZ backflow device tested and call the District for a final inspection.

The inspector will check the installed system to ensure it conforms to the approved plan. Irrigation systems not installed in accordance with approved plans may be subject to removal by the owner, and the irrigator may be subject to fines of up to \$2,000.00 for each violation. District rules regarding the enforcement and collection of fines are provided in the District's Service Rules and Policies. In addition, the offending party shall be liable to the District for any costs incurred by the District in connection with any repairs or corrections necessitated by any such violation.

Standards for Designing, Installing, and Maintaining Landscape Irrigation Systems

Water Conservation

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

Minimum Standards for the Design of the Irrigation Plan

1. 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:
 - a. they do not diminish the operational integrity of the irrigation system;
 - b. they are in accordance with this ordinance and the requirements of 30 Tex. Admin. Code § 344; and
 - c. they are noted prominently in red on the irrigation plan.
2. 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.
3. All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:
 - a. the irrigator's seal, signature, and date of signing;
 - b. all major physical features and the boundaries of the areas to be watered and the basic landscape plan;
 - c. a North arrow;
 - d. a legend;
 - e. the zone flow measurement for each zone;
 - f. location and type of each:
 - (1) controller;
 - (2) sensor (for example, but not limited to rain, moisture, wind, flow, or freeze);
 - g. location, type and size of each:
 - (1) water source, such as, but not limited to, a water meter and point(s) of connection;
 - (2) backflow prevention device;
 - (3) water emission device, including, but not limited to, spray heads, rotary sprinkler heads, quick-couplers, bubblers, drip, or micro-sprays;
 - (4) valve, including, but not limited to, zone valves, master valves, and isolation valves;

- (5) pressure regulation component; and
- (6) main line and lateral piping.
- h. the scale used;
- i. the design pressure; and
- j. calculation of estimated monthly water use in the summer months.

Minimum Design and Installation Requirements

1. 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. Water meters specified for a project must not operate constantly at maximum flow or the next largest meter will be required. A minimum of a full 3/4" meter will be required for irrigation systems. No irrigation head or line will be placed closer than five (5) feet to any fire hydrant, water service, wastewater service, meter or valve.
2. Spacing.
 - a. 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.
 - b. 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.
 - c. 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.
3. 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.
4. 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.

5. Irrigation Zones. Irrigation systems shall have separate zones based on plant material type, microclimate factors, topographic features, soil conditions, and hydrological requirements.
6. 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.
7. 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.
8. Master valve. When provided, a master valve shall be installed on the discharge side of the backflow prevention device on all new installations.
9. 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.
10. 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.
11. Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.
12. Depth coverage of piping. Piping in all irrigation systems must be installed according to the manufacturer's published specifications for depth coverage of piping.
 - a. 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 plan 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.
 - b. 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.

- c. All trenches and holes created during installation of an irrigation system must be backfilled and compacted to the original grade.
13. Wiring irrigation systems.
 - a. 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.
 - b. Electrical wiring that connects any electrical components of an irrigation system must be sized according to the manufacturer's recommendation.
 - c. Electrical wire splices which may be exposed to moisture must be waterproof as certified by the wire splice manufacturer.
 - d. 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.
 14. 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.
 15. 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 on-site, the irrigator shall be responsible for ensuring that a licensed irrigation technician is on-site to supervise the installation of the irrigation system.

Backflow Prevention and Cross-Connections

Backflow Prevention

1. Any irrigation system that is connected to a public or private potable water supply must be connected through a commission-approved backflow prevention method. 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 Uniform Plumbing Code; or any other laboratory that has equivalent capabilities 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.

2. If conditions that present a health hazard exist, one of the following methods must be used to prevent backflow;
 - a. An air gap may be used if:
 - (1) there is an unobstructed physical separation; and
 - (2) 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 are at least one inch or twice the diameter of the water supply outlet, whichever is greater.
 - b. Reduced pressure principle backflow prevention assemblies may be used if:
 - (1) the device is installed at a minimum of 12 inches above ground in a location that will ensure that the assembly will not be submerged; and
 - (2) drainage is provided for any water that may be discharged through the assembly relief valve.
 - c. Pressure vacuum breakers may be used if:
 - (1) no back-pressure condition will occur; and
 - (2) the device 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.
 - d. Atmospheric vacuum breakers may be used if:
 - (1) no back-pressure will be present;
 - (2) there are no shutoff valves downstream from the atmospheric vacuum breaker;
 - (3) the device is installed at a minimum of six 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) 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
 - (5) 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.

- e. Backflow prevention devices used in applications designated as health hazards must be tested upon installation and annually thereafter.
- f. Double check valve backflow prevention assemblies are prohibited on irrigation systems.

Specific Conditions and Cross-Connection Control

1. Before any chemical is added to an irrigation system connected to any potable water supply, the irrigation system must be connected through a reduced pressure principle backflow prevention assembly or air gap.
2. Connection of more than one water source to an irrigation system presents the potential for contamination of the potable water supply if backflow occurs. Therefore, 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.
3. 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.
4. If an irrigation system is designed or installed on a property that is served by an on-site sewage facility.
 - a. all irrigation piping and valves must meet the separation distances from the On-Site Sewage Facilities system as required for a private water line.
 - b. any connections using a private or public potable water source must be connected to the water source through a reduced pressure principle backflow prevention assembly as defined in this ordinance.
 - c. 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.

Installation of Backflow Prevention Device

1. If an irrigation system is connected to a potable water supply and requires major maintenance or alteration, the system must be connected to the potable water supply through an approved, properly installed backflow prevention method as defined in this Policy before any major maintenance or alteration is performed.
2. 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.

3. The irrigator shall ensure the backflow prevention device is tested prior to being placed in service and the test results provided to the District representative within 10 business days of testing of the backflow prevention device. The test results should be left wired to the RPZ for the inspector.

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. A duplicate copy of the maintenance checklist shall also be provided to the District’s irrigation inspector. Failure to submit a completed maintenance checklist to the District may be considered as noncompliance and subject the irrigation system’s owner to penalties. 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 and specifications, 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; and

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

1. 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.
2. 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.
3. 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.
4. 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 not already present.

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 is connected using an air gap or a reduced pressure principle backflow prevention device, in accordance with the Uniform Plumbing Code;
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 RECUPERACION – NO BEBER;" and
6. backflow prevention on the reclaimed water supply line shall be in accordance with the District regulations.

Variances

Any person subject to this ordinance may make application to the General Manager for a variance if compliance would pose a unique, unnecessary and inequitable hardship.

Variance requests shall be decided on within ten (10) business days, and denials of relief may be appealed to the District Board of Directors within twenty (20) days of receipt of the denial notice.

APPENDIX A

Annual Water Budget

Run Times Based on 1/2 Inch of Irrigation Per Cycle

| Zone # | Description | Head Type (#) | Precip. Rate | GPM | Run Time | Gals Per Cycle |
|--------|-------------|---------------|--------------|-----|--------------|----------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | Total | |

| Historical Monthly Water Use - 70% of Potential ET | | | | Legend |
|--|---------------|-----------------|-------------|-------------------------------------|
| Month | Avg. Daily ET | Avg. Cycles | Total Gals. | Description Column |
| January | 0.04 | 3 | | Sun or Shade |
| February | 0.04 | 3 | | Turf or Beds |
| March | 0.06 | 4 | | Sloped |
| April | 0.07 | 4 | | Other |
| May | 0.12 | 7 | | |
| June | 0.15 | 9 | | Head Type (#) Column |
| July | 0.18 | 11 | | Include # Of Heads on Proposed Zone |
| August | 0.18 | 11 | | Sprays - Full/Half/Quarter |
| September | 0.15 | 9 | | Rotors |
| October | 0.10 | 6 | | Bubblers |
| November | 0.05 | 4 | | Drip line |
| December | 0.04 | 3 | | |
| * Deduct Rainfall | | Yearly Total-74 | | |

"Precipitation Rate = Gallons per minute per zone x 96.25 divided by square footage covered by that zone."

"Run Time = .5 irrigation divided by precipitation rate of that zone x 60 = minutes of run time."

WCID #17 Irrigation
 Water Budget Application