

The Texas Commission on Environmental Quality (commission, TCEQ, or agency) adopts the repeal of §§344.1, 344.4, 344.10, 344.49, 344.58 - 344.63, 344.70 - 344.73, 344.75, 344.77, and 344.90 - 344.96; and adopts new §§344.1, 344.20 - 344.24, 344.30 - 344.38, 344.40 - 344.43, 344.50 - 344.52, 344.60 - 344.65, 344.70 - 344.72, and 344.80.

Sections 344.1, 344.24, 344.30, 344.34 - 344.36, 344.38, 344.43, 344.50 - 344.51, 344.60 - 344.65, 344.70 - 344.72 and 344.80 are adopted *with changes* to the text and will be republished. Sections 344.20 - 344.23, 344.31 - 344.33, 344.37, 344.40 - 344.42, and 344.52 are adopted *without changes* to the proposed text as published in the February 1, 2008, issue of the *Texas Register* (33 TexReg 899) and will not be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The adopted new rules will establish the duties and responsibilities of irrigators, irrigation technicians, and irrigation inspectors; provide clarification for better enforcement; reflect the change in the agency name; update statutory references; and correct grammar and cross-references. The rulemaking implements changes made to Texas Occupations Code, §1903.053 and §1903.251, and the addition of Texas Water Code (TWC), §49.238, and Local Government Code, §401.006, by House Bill (HB) 4, HB 1656, and Senate Bill (SB) 3, 80th Legislature, 2007. This adoption addresses local, state, and national demands for conserving and protecting the state's water resources.

Although technology and conservation methods have evolved over the years, no substantive changes have been incorporated into the existing rules since 1996. The adopted new rules will ensure that the agency's rules are up to date and consistent with statutory standards and help to ensure that the rules are effective.

Because of the number of changes made, repealing the existing rules in their entirety and proposing new rules make the changes easier to present and understand. The adopted new rules are reorganized to provide better readability. The adopted new rules will revise existing criteria for the design, installation, service, and operation of irrigation systems to be consistent with best industry practices and technology.

HB 4/SB 3 directed the commission to adopt rules that govern: 1) the connection of an irrigation system to any water supply; 2) the design, installation, and operation of irrigation systems; 3) water conservation; and 4) the duties and responsibilities of irrigators.

HB 1656 adds a new landscape irrigation license classification, "irrigation inspector," and directs municipalities with populations of 20,000 or more to adopt ordinances that require irrigation system irrigators be licensed by the commission and obtain a permit before installing an irrigation system. Municipalities must adopt standards and specifications for designing, installing, and operating irrigation systems and include any rules adopted by the agency that are related to landscape irrigation.

Municipalities may employ or contract with a licensed plumbing inspector or licensed irrigation inspector to enforce the ordinance. Municipalities may collect a fee to recover costs of the program. Municipalities must exempt on-site sewage systems, agricultural irrigation systems, and irrigation systems connected to a well and used by the property owner for domestic use.

HB 1656 allows water districts to adopt rules that meet the same criteria as municipalities, except that districts may employ or contract with a licensed plumbing inspector, a licensed irrigation inspector, the district's operator, or another governmental entity to enforce the rules. Water districts must exempt on-site

sewage systems, agricultural irrigation systems, and irrigation systems connected to a well and used by the property owner for domestic use.

As required by HB 4, §19 and SB 3, the commission must adopt standards no later than June 1, 2008, with an effective date of January 1, 2009. Therefore, the adopted effective date of the repeal of the existing Chapter 344 and replacement with new Chapter 344 is January 1, 2009.

The existing Chapter 344 is repealed. A new Chapter 344 is adopted and is consistent with HB 4, SB 3, and HB 1656, compatible with best irrigation practices, and that improves readability.

SECTION BY SECTION DISCUSSION

Subchapter A, Definitions

Adopted new §344.1, Definitions, will define air gap; Atmospheric Vacuum Breaker; backflow prevention; backflow prevention assembly; completion of irrigation system installation; consulting; cross-connection; design; design pressure; Double Check Valve; emission device; employed; head-to-head spacing; health hazard; hydraulics; inspector; installer, irrigation inspector; irrigation plan; irrigation services; irrigation system; irrigation technician; irrigation zone; irrigator; irrigator-in-charge, landscape irrigation; license; mainline; maintenance checklist; major maintenance, alteration, repair, or service; master valve; matched precipitation rate; new installation; non-health hazard; non-potable water; pass-through contract; potable water; Pressure Vacuum Breaker; reclaimed water; records of landscape irrigation activities; Reduced Pressure Principle Backflow Prevention Assembly; static water pressure; supervision; water conservation; zone flow; and zone valve. Three definitions in the existing section, "Non-toxic Substance," "Precipitation Zones," and "Toxic Substance" are not being adopted in the new

section because the terms are not used in this chapter. The definition of "Council" in the existing section is not adopted in the new section. The definition is not necessary, because the use of the term "council" in §344.80 means the Irrigator Advisory Council. The definition for design was changed from sprinkler heads to emission devices. The definition of design pressure was adopted with changes. The definition of irrigator-in-charge was clarified to exempt business owners. The definition for irrigation services added the term "selling." The definitions for landscape irrigation, new installation, pass-through contract, records of landscape irrigation activities and zone flow were adopted with changes. The change to "landscape irrigation" clarified the definition. The change to "new installation" removes the phrase that one or more new zones would require an irrigation plan. The change to "records of landscape irrigation activities" removes some of the items to be kept. The change to "zone flow" includes adding gallons per hour and changes the way the flow is determined.

Subchapter B, Standards of Conduct for Irrigators, Installers, Irrigation Technicians, and Irrigation Inspectors, and Local Requirements

Adopted new Subchapter B will establish certain standards of conduct for licensees and establishes requirements for local regulations and inspections. The new Subchapter B incorporates the existing §§344.90 - 344.92 and part of §344.93.

Adopted new §344.20, Purpose of Standards, establishes the reasons for these standards of conduct. The proposal implements changes made to Texas Occupations Code, §1903.053 and §1903.251 and the addition of TWC, §49.238 and Local Government Code, §401.006, by HB 4, SB 3, and HB 1656, 80th Legislature, 2007. Adopted new §344.20 is similar to and update the previous §344.90 to include irrigation inspectors and irrigation technicians.

Adopted new §344.21, Intent, establishes the intent of these standards. It is necessary to prescribe responsibilities of licensees in accordance with Texas Occupations Code, §1903.053(a)(4). The section is similar to the existing §344.91. Specific references to enforcement activities are added by the adopted rule.

Adopted new §344.22, Proficiency in the Field of Irrigation; Representation of Qualifications, establishes the requirement that irrigators, installers, irrigation technicians, and inspectors exhibit knowledge and proficiency when performing irrigation activities. The adopted §344.22 establishes the requirement that irrigators, installers, irrigation technicians, irrigation inspectors, and business owners accurately and truthfully represent their qualifications. The adopted new rule requires irrigators, installers, irrigation technicians, and inspectors to be knowledgeable of local requirements related to landscape irrigation. The requirements are necessary to help ensure efficient irrigation practices.

Adopted new §344.23, Irrigation Practice, prohibits false, misleading or deceptive practices related to irrigation services. The existing rule, §344.93(c), only applies to false, misleading, or deceptive practices related to bidding or advertising of services and fees by irrigators or installers. The adopted new rule adds selling, installing, maintaining, altering, repairing, servicing or inspection to the prohibition. This new requirement is necessary to help ensure efficient irrigation practices.

Adopted new §344.24, Local Regulation and Inspection, establishes that irrigators, installers, irrigation technicians, and inspectors must comply with local requirements, ordinances, and regulations. The existing rule, §344.70, applies to irrigators and installers. The adopted new rule adds irrigation inspectors

and irrigation technicians to the rule. The adopted new rule allows regulatory authorities to inspect irrigation systems connected to their public water systems. The language is similar to existing §344.71, except the existing rule states that it "is not required to be inspected" and the adopted rule states that the system "may" be inspected. The adopted rule requires municipalities with a population of 20,000 or more and water districts that implement irrigation programs to verify that the irrigator that designs and installs an irrigation system holds a valid license and has obtained the necessary permits prior to the installation. These entities may also conduct inspections to verify that the design and installation meet the requirements contained in this chapter or the local ordinance or rules, if more stringent. The adopted rule requires each inspector to maintain a log of inspections for three years. The adopted rule exempts from the inspection requirements a landscape irrigation system that is part of an on-site sewage disposal system, an agricultural operation or is connected to a well used by the property owner for domestic use. It is necessary to set these standards to better enforce the landscape irrigation rules.

Subchapter C, Requirements for Licensed Irrigators, Installers, Irrigation Technicians, and Irrigation Inspectors

Adopted new Subchapter C establishes the duties and responsibilities of irrigators, installers, irrigation technicians, landscape irrigation business owners, and irrigation inspectors. It is necessary to define the responsibilities of those who engage in landscape irrigation in order to provide a better understanding of these responsibilities and to better enforce the landscape irrigation rules. Adopted new Subchapter C incorporates the existing §§344.4, 344.49, and 344.58.

Adopted new §344.30, License Required, requires irrigators, installers, irrigation technicians, and irrigation inspectors to hold a valid license. The requirement in the existing chapter for installers to work

under the supervision of a licensed irrigator when connecting an irrigation system to a water supply continues. The adopted rule establishes an irrigation technician's role on January 1, 2009, to allow the irrigation technician to install, maintain, alter, repair, and service an irrigation system as well as connect an irrigation system to the water supply under the direction of a licensed irrigator. The licensed irrigator is responsible for the work performed by an irrigation technician on a landscape irrigation system. This section also addresses the license requirements for an inspector that may be employed or contracted by a municipality or water district to enforce landscape irrigation ordinances or rules. Adopted new §344.30(c) requires licensed irrigation technicians to be consistent with the licensed irrigation installers. Adopted new §344.30(h) clarifies the requirements that a home or property owner who installs an irrigation system must meet.

Adopted new §344.31, Exemption for Business Owner Who Provides Irrigation Services, establishes the conditions under which a business owner could engage in irrigation activities by employing an irrigator to supervise irrigation activities of the business, as established in Texas Occupations Code, Chapter 1903.

Adopted new §344.32, Responsibilities of a Business Owner Who Provides Irrigation Services places responsibility on the landscape irrigation business owner to ensure landscape irrigation services are supervised by a licensed irrigator serving as the irrigator-in-charge. The business owner is responsible for verifying the validity of the license of any irrigator, installer or irrigation technician working for the business. Because the owner guides the direction of the company, a business owner must ensure irrigation activities are performed in a responsible manner.

Adopted new §344.33, Display of License, makes administrative changes to correct grammar and requires licensees to present their license upon request to any inspector or regulatory authority with authority over landscape irrigation issues in the jurisdiction in which the licensee practices. Additionally, the irrigator, installer, and irrigation technician licensee are accountable to provide proof of licensure when requested by any regulatory authority, irrigation system's owner, or prospective owner. Irrigators, installers, and irrigation technicians are required to display their license at their place of business. The requirement for an irrigation inspector to present the license when requested by a regulatory authority is addressed in this section.

Adopted new §344.34, Use of License, establishes who may use a license and how it may be used. The adopted rule establishes a requirement that an irrigator-in-charge can perform irrigation services at only one entity as an irrigator-in-charge, but may work at other businesses performing irrigation services. The adopted rule includes requirements for the irrigation inspector's use of the license the inspector obtains from the TCEQ. The adopted section was changed to enhance enforceability by replacing the word "may" with "shall" in two places.

Adopted new §344.35, Duties and Responsibilities of Irrigators, establishes that an irrigator is responsible for all permits, contracts, agreements, advertising or other irrigation activity secured and performed using the irrigator's license. The adopted rule requires the irrigator to comply with all of the rules contained in this chapter when performing irrigation work. The adopted rule requires a licensed irrigator to supervise irrigation activities for an unlicensed business owner. It is necessary to set out specific requirements for irrigators doing these irrigation activities because Texas Occupations Code, Chapter 1903, addresses the

duties and responsibilities for landscape irrigation activities. This section has been adopted with changes to separate the responsibilities for irrigators that perform only "design" work and those that only "install."

Adopted new §344.36, Duties and Responsibilities of Installers and Irrigation Technicians, establishes the duties and responsibilities of licensed installers and irrigation technicians. The current duties and responsibilities of installers include connecting irrigation systems to water supplies, and installing an approved backflow prevention method as indicated on the site irrigation plan, or according to the licensed irrigator's instructions. The adopted rule allows an irrigation technician, beginning January 1, 2009, to connect, maintain, alter, repair, service, and direct the installation of an irrigation system under the direct supervision of a licensed irrigator. It is necessary to define the duties and responsibilities of irrigation technicians to help ensure the safe and efficient operation of the irrigation system. This section has been adopted with changes to allow an irrigation technician to perform the final walk through or explain the Maintenance checklist to the irrigation system owner or owner's representative.

Adopted new §344.37, Duties and Responsibilities of Irrigation Inspectors, establishes that an irrigation inspector must enforce the rules or ordinances of the employing entity. It is necessary to establish the duties and responsibilities of irrigation inspectors to protect the water supply.

Adopted new §344.38, Irrigator, Installer, and Irrigation Technician Records, establishes the requirement that irrigators, installers, and irrigation technicians make all landscape irrigation designs, invoices, contracts, warranties, or other irrigation business records or documents available upon request to any governing authority within ten business days of a request. This change is necessary to help ensure effective enforcement of and compliance with regulations that relate to landscape irrigation. The section

is adopted with changes from the proposed rules, which removes a requirement to keep copies of advertisements and allow ten business days to provide records to the commission or local regulatory authorities.

Subchapter D, Licensed Irrigator Seal

The new subchapter removes the existing requirement for the licensed irrigator to submit a copy of the seal on letterhead or business stationery and to notify the executive director of any changes in the seal or rubber stamp facsimile. The executive director may obtain a copy of the seal or rubber stamp facsimile, if necessary, on a case-by-case basis. A seal is required on the design, irrigation plan and other documents provided to the irrigation system's owner. It is necessary to set requirements for the seal and for use of the seal. The adopted rule incorporates part of existing §344.59.

Adopted new §344.40, Seal Required, requires each licensed irrigator to obtain a seal. The adopted rule prohibits licensed irrigators from engaging in landscape irrigation work until they possess the seal and license. The change is necessary to ensure effective enforcement of and compliance with regulations related to landscape irrigation to protect the water supply.

Adopted new §344.41, Seal Design, prescribes the appearance of a seal. This new section contains requirements identical to those in the existing §344.60, except that the new section explains that the license number on the seal does not need to contain the leading zeros. The adopted rule requires the irrigator to be responsible for the security of the seal. The adopted rule better explains the seal requirements.

Adopted new §344.42, Seal Display, prescribes that the seal or electronic seal and signature be visible and legible on the original document and when the document is copied or reproduced. The adopted rule incorporates parts of §344.60 and addresses new technology. It is necessary to explain the responsibilities of a licensed irrigator in displaying the seal on documents.

Adopted new §344.43, Seal Use, established the required uses of a seal. Grammatical changes were made from the existing rule. The change in structure simplifies the section. The section also required irrigators to sign their legal name and affix their seal on documents presented to irrigation system owners or the owner's representative. The adopted rule requires the irrigator to accept responsibility for documents that have the seal, and for work performed in accordance with the sealed document. The adopted rule ensures that systems are properly installed in accordance with rules and ordinances. The adopted rule requires irrigators to maintain a copy of all sealed documents for three years. The adopted rule requires that once a seal is utilized on a document, the seal cannot be altered. The adopted rule describes how a seal could be used on a design or specification created by another irrigator. The adopted rule contains a new requirement that the irrigator sign below the seal rather than over the seal. The adopted change makes the irrigator's signature more legible. The adopted rule replaces existing §§344.61 - 344.63. It is necessary to explain the responsibilities of a licensed irrigator in using the seal on documents. The section was adopted with changes to indicate that the presence of the irrigator's seal indicates the acceptance of professional responsibility for the document and references to a "design" were changed to "plan."

Subchapter E, Backflow Prevention and Cross-Connections

Adopted new §344.50, Backflow Prevention Methods, establishes a requirement that all irrigation systems connected to potable water supplies be connected through an approved backflow prevention

method. The adopted new section describes the types of backflow prevention methods that are approved, the conditions of use, and installation standards. The change in structure from the existing chapter improves the section's readability and help to ensure the protection of water supplies. This section replaces existing §344.73. The changes provides irrigators, installers and irrigation technicians with a central location to determine which types of backflow prevention assemblies are appropriate for use in specific irrigation applications in Texas.

Adopted new §344.50(a) establishes the requirements for approved backflow prevention methods and their installation. The adopted rule also includes methods to determine which manufacturer's equipment, model, size, and method of installation are approved for use in the United States.

Adopted new §344.50(b) establishes the backflow prevention methods that are to be used in conditions that present a health hazard, and prescribe how the device must be installed. The standards are necessary to help ensure the protection of water supplies.

Adopted new §344.50(c) explains that a backflow prevention device used in a landscape irrigation system designated as a health hazard must be inspected upon installation and annually thereafter. This requirement is in §290.44(h)(4) of this title and is included in this chapter as a convenience. Inclusion of the rule in this chapter better informs irrigators and irrigation system owners of backflow prevention requirements.

Adopted new §344.50(d) establishes when and how a double check valve backflow prevention assembly may be used and would allow the assembly to be used under conditions that do not present a health

hazard. It is necessary to provide specific information in the use of a double check valve to help ensure proper use and to protect the water supply.

Adopted new §344.50(e) establishes certain installation requirements when a double check valve is installed below ground. This section was adopted with the change of the location of the y-type strainer to the inlet side. The proposal included a new provision that requires a clearance between any fill material and the bottom and the sides of the double check valve to allow for testing and repair. The proposal required the installation of a y-type strainer on the discharge side of the double check valve. The standards are necessary to help ensure the protection of water supplies.

Adopted new §344.51, Specific Conditions and Cross-Connection Control, replaces existing §344.75, and establishes specific conditions relating to cross connections and prescribes the requirements in different situations. The identification of these conditions is necessary to help ensure the protection of water supplies. Additionally, the title change more accurately reflects the subject matter of the section.

Adopted new §344.51(a) establishes the approved backflow prevention methods when chemicals are added to the water in the irrigation system. This requirement is necessary for the protection of water supplies and for consistency with 30 TAC Chapter 290, Public Drinking Water. In response to comments, an air gap was added as an acceptable backflow prevention method.

Adopted new §344.51(b) requires that a reduced pressure principle backflow prevention assembly device or air gap must be used on each potable water source when a potable and non-potable water source supply water to an irrigation system. This requirement is necessary for the protection of water supplies and for

consistency with Chapter 290. In response to comments, the section was changed to allow the use of multiple water sources in an irrigation system.

Adopted new §344.51(c) establishes that irrigation system components utilizing chemical additives must be connected to a potable water system using a reduced pressure principle backflow prevention assembly. This adopted section also clarified how a chemical could be added to an irrigation system.

Adopted new §344.51(d) establishes specific requirements and limitations for irrigation systems that are located on property that is served by an on-site sewage facility. Specific requirements that relate to the design and installation of an irrigation system that is located on property that is served by an on-site sewage facility system are necessary for the preservation of the health and safety of the public. The adopted section changed "on site" to "on-site" for consistency with the remainder of the chapter.

Adopted new §344.52, Installation of Backflow Prevention Device, describes how and when backflow prevention devices should be installed. The requirements help protect the water supply.

Adopted new §344.52(a) requires backflow protection devices be installed on existing irrigation systems that do not have an approved backflow prevention method when certain maintenance, alterations, repairs, or service are made to the irrigation system. These systems could potentially contaminate water supplies and pose a health and safety risk.

Adopted new §344.52(b) prohibits, if used, the installation of a master valve upstream of backflow prevention devices. The installation of an automatic master valve upstream of a backflow prevention assembly could prevent accurate testing of the backflow prevention device, as is required in Chapter 290.

Adopted new §344.52(c) refers to "in service" to be defined as when the irrigation system and backflow prevention device is fully operational after being successfully tested and verified as acceptable for use.

Subchapter F, Standards for Designing, Installing, and Maintaining Landscape Irrigation Systems

Adopted new §344.60, Water Conservation, promotes water conservation practices in the field of irrigation. The adopted requirement adds that systems must also be operated to promote water conservation in addition to those requirements in the existing §344.72. The operation of irrigation systems affects the water efficiency of a system. The adopted section contains the correct reference to the definition of water conservation.

Adopted new §344.61, Minimum Standards for the Design of the Irrigation Plan, changes the standards for the design of irrigation systems by removing the requirements for wind derating that are currently in existing §344.77(c). The available industry information for wind derating is inadequate. The requirement for minimum standards for precipitation rates currently in existing §344.77(d) was removed because there are more efficient means to achieve water conservation in irrigation systems. Adopted new §344.61 replaces existing §344.77 and adds new requirements. The change in structure from the existing rule is necessary to improve the readability of the section.

Adopted new §344.61(a) requires an irrigator to prepare an irrigation plan for each new installation site. The adopted rule explains how variances from the original plan must be addressed. The adopted rule requires a paper copy of the plan to be on-site at all times during the installation of the irrigation system. The irrigation plan promotes water conservation. The adopted section allows either a paper or electronic copy of the design plan to be on-site. The adopted section requires the location of all controllers, not just automatic.

Adopted new §344.61(b) requires that the irrigation plan for the proposed irrigation system include a statement of the areas covered and not covered by the irrigation system. A proper design must indicate the intended areas of irrigation. The design of an irrigation system is essential to conserve water.

Adopted new §344.61(c) establishes a list of items that are required in an irrigation plan. The adopted rule requires that the design pressure be provided. It is necessary to provide these requirements for designs because adopted new Subchapter F requires that specific design elements be used to conserve water. The adopted section requires that the location and type of controllers (not just automatic) must be included.

Adopted new §344.62, Minimum Design and Installation Requirements, establishes limitations for the use of component parts in a design. Adopted new §344.62(a) replaces existing §344.77 and adopts new requirements. In order to protect the integrity and efficiency of the irrigation system and reduce risks to human health and the environment, the components of an irrigation system should not be used in excess of the limitations that are published by the manufacturer. Irrigation plans should not incorporate design elements that would cause a component to be used in a manner that would exceed the limitations published by the manufacturer.

Adopted new §344.62(b) establishes standards for the spacing of emission devices. The adopted rule does not allow spacing of emission devices further apart than the manufacturer's published specifications. To improve water conservation, the rule adopts a new requirement that does not allow the use of spray or rotary sprinkler heads in areas 48 inches or less and that have impervious surfaces on two or more sides. The rule also adopts a new requirement that irrigation system heads are no closer than four inches to a hardscape, such as a foundation, fence, concrete, asphalt, pavers, or stones set with mortar. The adopted new section replaces existing §344.77(a). It is necessary to establish these standards to promote water conservation. The adopted section changes the prohibition of emission devices in landscapes of four feet and clarifies that the measurement may not include impervious surfaces. The adopted section changes the phrase "sprinkler heads" to "emissions devices" for consistency, and provides an exception for small paved areas such as narrow paved walkways, jogging paths, golf cart paths or other small areas located in cemeteries, parks, golf courses or other public area that have runoff that drains into a landscaped area.

Adopted new §344.62(c) establishes the requirement that the design and installation of an irrigation system's emission components must ensure that they operate within the manufacturer's published operating pressure range. Irrigation plans would be required to use emission devices that would operate at the minimum and not above the maximum sprinkler head pressure published by the manufacturer. The new section replaces existing §344.77(b). This standard is necessary because systems that operate above or below the recommended operating pressure are inefficient and are prone to either waste water or to result in insufficient irrigation.

Adopted new §344.62(d) requires the design and installation of irrigation systems so that water flow in the pipes could not exceed a velocity of five feet per second for polyvinyl chloride (PVC) pipe. The excessive velocity of flow can cause damage to components of the irrigation system, thus wasting water.

Adopted new §344.62(e) establishes a requirement for irrigation systems to have separate irrigation zones based on factors such as microclimate, plant material type, topographic features, soil conditions, and hydrological control. Separate zones promote water conservation.

Adopted new §344.62(f) establishes a requirement for irrigation systems to have matched precipitation rates at all emission devices located in the same zone. Matched precipitation rates promote water conservation.

Adopted new §344.62(g) establishes a requirement that irrigation systems not spray water over impervious surfaces such as concrete, asphalt, brick, wood, stones set with mortar, walls, fences, sidewalks, streets, etc. Limiting the spray of water over impervious surfaces conserves water.

Adopted new §344.62(h) requires the master valve be located on the discharge side of the backflow prevention device, if a master valve is used on a newly installed or on an existing system. The location of the master valve could impact the testing of the backflow prevention device. If included, a master valve would conserve and protect the water supply. The adopted section clarifies that the requirement is "when provided" not "if required" since the use of a master valve is at the discretion of the irrigator.

Adopted new §344.62(i) requires the use of colored PVC pipe primer solvent. Colored PVC pipe primer solvent would promote better adhesion when cementing pipe joints together, thus minimizing leaking pipes, which would promote water conservation. The adopted section states that the primer should be applied in accordance with either the Uniform Plumbing Code or the International Plumbing Code.

Adopted new §344.62(j) establishes the requirement that technology, in the form of rain or moisture sensors, or various other methods, be installed on all new automatic irrigation systems. The requirement could be met by other technologies that are designed to detect moisture and shut off the landscape irrigation system. The requirement extends to new systems and those with automatic controllers that are replaced during a repair. The use of this technology promotes water conservation. The adopted section exempts El Paso, Hudspeth, Culberson, Jeff Davis, Presidio, Brewster, Terrell, Loving, Winkler, Ward, Reeves, Ector, Crane and Pecos counties from the requirement.

Adopted new §344.62(k) establishes a requirement for an isolation valve on new installations. The isolation valve allows the water flowing to the irrigation system to be manually turned off without turning off the water supply at the water meter, thereby allowing water to be used for other purposes in a building. This would promote water conservation.

Adopted new §344.62(l) establishes that all piping must be covered according to the manufacturer's published specifications. If there are no specifications, a minimum coverage of six inches is established by the adopted rule. A two inch minimum coverage is adopted for areas that have utilities or structures that prevent the minimum recommended coverage. The existing rule provided for a variance where utilities, tree roots, or man made structures are encountered. "Structures" in the previous rule has been

changed to "man-made structures" for better understanding. A new requirement will require irrigators to use select fill, to compact all trenches and holes created during the installation of irrigation systems, and return the area to the original grade. The new section replaces existing §344.77(e). Pipes that are not properly covered can be damaged more easily and result in wasted water. The adopted section allows mounding over pipe in certain instances and requires the mounding to be noted on the plan and discussed with the irrigation system owner or owner's representative to address any safety issues.

Adopted new §344.62(m) establishes standards for the use of electrical wiring and wire splices in an irrigation system, including the minimum depth of cover for wiring. The depth of cover for wiring is necessary in order to conform to the National Electrical Code. The code is not a national law, but its observance is mandated in many states and local areas and represents best practices. The new section replaces §344.77(f). The adopted rule requires electrical wiring that is used to connect the automatic controller to any electrical component to be buried at least six inches deep. Use of approved electrical wiring and proper installation is critical to preventing a health hazard. The adopted section states that electrical wire splices which "may be" exposed rather than "are" exposed must be waterproof.

Adopted new §344.62(n) establishes that water within an irrigation system is non-potable. The rule further establishes that no drinking or domestic water outlets, such as hoses used to fill swimming pools or decorative fountains could be connected to an irrigation system. The rule also establishes conditions whereby a hose bib could be attached to the irrigation system. The adopted rule requires the hose bib and any hoses to be labeled, "Nonpotable. Not safe for drinking." The adopted rule helps protect the water supply and public health.

Adopted new §344.62(o) establishes that effective January 1, 2010, an irrigator must be on-site at all times when landscape irrigation activities are being conducted. If the irrigator cannot be on-site, the irrigator is responsible for ensuring a licensed irrigation technician is on-site to supervise the installation of the irrigation system. It is necessary to set out specific requirements for licensed irrigators during irrigation activities to help ensure the safe and efficient service of irrigation systems.

Adopted new §344.63, Completion of Irrigation System Installation, establishes that the irrigator or irrigator technician providing on-site supervision must complete four tasks. The first task requires the irrigator or irrigator technician to conduct a final walk through with the irrigation system's owner or owner's representative to explain the operation of the system. Second, the irrigator or irrigator technician provides a maintenance checklist to the irrigation system's owner or the owner's representative. As part of the checklist, the irrigator provides the manufacturer's manual for the automatic controller, a seasonal watering schedule, a list of parts that require maintenance and a recommended frequency of maintenance and a statement that the system has been installed according to all rules and regulations and has been adjusted for the most efficient application of water. The checklist requires the signature of the irrigator and the irrigation system's owner or owner's representative. Third, the irrigator or irrigator technician must attach a permanent sticker to each automatic controller showing the irrigator's name, license number, company name, telephone number and the dates of the warranty period. Finally, the irrigator or irrigator technician provides a copy of the design plan showing the actual placement of irrigation system components to the irrigation system's owner or owner's representative. The irrigation system owner or owner's representative will be given the original maintenance checklist. It is necessary to set out specific requirements for licensed irrigators during irrigation activities to help ensure the safe and efficient installation of irrigation systems. The adopted section allows the irrigation technician to perform the

maintenance checklist duties and apply the sticker to the controller. The adopted section clarifies that if the irrigation system is manual, the sticker is affixed to the original maintenance checklist. The adopted section also clarifies that if an automatic controller is used that the manual should be provided. The adopted section removes the phrase "designed and" from the statement to be sealed in recognition of "design" and "installation" only business and changes "design plan" to "irrigation plan." The adopted section clarifies that the irrigation system's owner or owner's representative should be provided a copy of the plan showing the actual installation of the irrigation system and the maintenance checklist. The adopted section allows current or real time evapotranspiration data to be used in addition to historical evaporation data.

Adopted new §344.64, Maintenance, Alteration, Repair or Service of Irrigation Systems, establishes that the irrigator or business owner is responsible for all work performed during the maintenance, alteration, repair or service of irrigation systems during the warranty period. The irrigator or business owner is not responsible for the professional negligence of another irrigator who works on the same system. The adopted rule requires all trenches and holes created during the maintenance, alteration, repair, or service of an irrigation system be returned to the original grade. The adopted rule requires the use of colored PVC pipe primer solvent on pipes and fittings used in the maintenance, alteration, repair, or service of irrigation systems. The adopted rule requires the installation of an isolation valve when maintenance, alteration, repair, or service of an irrigation system involves excavation work at the water meter or backflow prevention device. It is necessary to set out specific requirements for irrigators during irrigation activities to help ensure the safe and efficient maintenance, alteration, repair, and service of irrigation systems. The adopted section contains language that pipe primer solvent must be installed according to

either the Uniform Plumbing Code or the International Plumbing Code. The adopted section clarifies that excavation work at a water meter or backflow device will require an isolation valve on an existing system.

Adopted new §344.65, Reclaimed Water, addresses the use of reclaimed water in landscape irrigation under certain conditions. Having information regarding the use of reclaimed water in landscape irrigation promotes water conservation and helps protect the water supply and public health. The adopted section includes the Spanish translation of "Reclaimed Water - Do Not Drink." The adopted section allows the use of reclaimed water in an irrigation system that is connected to the potable water supply. The change is consistent with 30 TAC §290.

Subchapter G, Advertising, Contract, and Warranty

Adopted new §344.70, Advertisement, replaced existing §344.93 and establishes certain requirements for irrigators who choose to advertise in written or electronic media and require that the commission's contact information be prominently displayed at the irrigator's place of irrigation business. It is necessary for all advertisements to include the license number of the irrigator to help ensure that irrigation practices are performed by a person who is qualified to perform them. HB 4/SB 3 directed the commission to adopt rules governing the duties and responsibilities of irrigators. The adopted section clarifies that trailers that advertise irrigation services must display the irrigator's license number.

Adopted new §344.71, Contracts, replaced existing §344.94 and established the information that must be included in estimates, proposals, bids, invoices, and contracts to install landscape irrigation systems. The section requires that documents be written. Certain information must be included in contracts to help ensure compliance with regulations. The adopted new rule requires that the dates that the warranty is

valid be provided in the contract. Additionally, §344.71(c) recognizes that pass-through contracts, as defined in §344.1(36), do not require the contractor to hold a license but must identify the irrigator and the license number of the irrigator who is responsible for performing the work and providing a warranty. Definition of this type of contract is required for effective enforcement of this chapter. The adopted section adds in language that the sign in the place of business is for the purpose of addressing complaints and the provision that it was a violation if anyone other than a licensed irrigator or exempt individual received compensation through a pass-through contract was removed. The adopted section was changed to remove the requirement that unlicensed businesses could not receive compensation for pass-through contracts.

Adopted new §344.72, Warranties, replaced the existing §344.96 and establishes the requirement that irrigators provide a written warranty on all new installations. The adopted rule requires that the irrigation system's owner or owner's representative be provided a written document for repair work that includes a breakdown of parts that are expended on the job and do not have to provide a warranty for the materials and labor. If a warranty is provided, the irrigator shall abide by the terms of the warranty. The new section also requires specific information be contained in the written warranty. These requirements are necessary in order to help preserve the water conserving efficiency of irrigation systems and to protect against system failure that could result in wasted water. The adopted section does not require the irrigator's license number on a warranty document. The adopted section removes the requirement to provide the manufacturer's warranties to irrigation system owners.

Subchapter H, Irrigator Advisory Council

Adopted new §344.80, Irrigator Advisory Council, requirements are essentially the same requirements that are in existing §344.10, with changes to grammar to improve readability. The number of meetings that a council member could miss is three consecutive regularly scheduled meetings or more than half of the regularly scheduled meetings in one year. The previous requirement was that a council member could miss half of the regularly scheduled meetings and be removed from the council by the commission. In response to comments, the adopted section was changed to remove the prohibition that council members may not be an officer, employee, or paid consultant of a trade association in the irrigation industry or be related to a person that is an officer, employee, or consultant of a trade association.

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of the Administrative Procedure Act, Texas Government Code, §2001.001 *et. seq.*, and determined that the rulemaking is not subject to Texas Government Code, §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in Texas Government Code, §2001.0225(g)(3). A "major environmental rule" means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The intent of the adopted rules is to address evolving practices and technology in the irrigation industry that relate specifically to water conservation, non-point source water pollution, protection of potable water supplies, responsibilities of licensed landscape irrigators, and enforceability of irrigation rules. These adopted rules also implement HB 4, SB 3, and HB 1656, 80th Legislature, 2007. Although technology and conservation methods have evolved over the years, no substantive changes have been made to these existing rules since 1996. These adopted rules

would ensure that the agency's rules are consistent with statutory standards and that they are more reflective of current technical practices and conservation methods. Protection of human health and the environment may be a by-product of the adopted rules, but is not the specific intent of the rules.

Therefore, the commission concludes that the adopted rules do not constitute a major environmental rule.

Furthermore, the adopted rules do not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). Texas Government Code, §2001.0225 applies only to a major environmental rule which: 1) exceeds a standard set by federal law, unless the rule is specifically required by state law; 2) exceeds an express requirement of state law, unless the rule is specifically required by federal law; 3) exceeds a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopts a rule solely under the general powers of the agency instead of under a specific state law.

The adopted rules do not exceed a federal standard because there are no federal standards regulating the practice of landscape irrigation. The adopted rules do not exceed state law requirements because these rules are required by HB 4, SB 3, and HB 1656. Also, the adopted rules do not exceed a requirement of an agreement because there are no delegation agreements or contracts between the State of Texas and an agency or representative of the federal government to implement a state and federal program regarding landscape irrigation. And finally, these rules are being adopted under specific state laws, in addition to the general powers of the agency.

Therefore, Texas Government Code, §2001.0225 is not applicable to these adopted rules. The commission invited but received no comments on the draft regulatory impact determination.

TAKINGS IMPACT ASSESSMENT

The commission evaluated these adopted rules and performed an analysis of whether these adopted rules constitute a taking under Texas Government Code, Chapter 2007. The specific purpose of the adopted rules is to update the rules to address evolving practices and technology in the irrigation industry, relating specifically to water conservation, non-point source water pollution, protection of potable water supplies, responsibilities of licensed landscape irrigators, and enforceability of irrigation rules. The adopted rules would substantially advance this stated purpose by setting standards for the installation of irrigation systems and by clearly defining the irrigator's, installer's, irrigation technician's, and inspector's responsibilities. The adopted rules implement HB 4, SB 3, and HB 1656, 80th Legislature, 2007.

Promulgation and enforcement of these adopted rules would be neither a statutory nor a constitutional taking of private real property. Specifically, the adopted regulations do not affect a landowner's rights in private real property because the adopted rules would neither burden nor restrict or limit the owner's right to property and reduce its value by 25% or more beyond that which would otherwise exist in the absence of these regulations. In other words, these rules would not constitute a statutory or constitutional taking because they only update existing rules to comply with current technical standards and conservation methods and implement new legislation that does not affect a landowner's rights in private real property.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the adopted rules and found that they are neither identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2) or (4), nor would they affect any

action/authorization identified in Coastal Coordination Act Implementation Rules, 31 TAC §505.11(a)(6).

Therefore, the adopted rules are not subject to the Texas Coastal Management Program.

PUBLIC COMMENT

The proposal was published in the February 1, 2008 Texas Register (33 Tex Reg 899). The commission held a public hearing on February 26, 2008. The comment period closed on March 3, 2008. The commission received comments from 43 companies and ten trade associations, nine governmental entities, one environmental group and 15 individuals on the rules. Forty-three entities supported the rules, either partially or with changes; 29 entities opposed the rule.

RESPONSE TO COMMENTS

Accord Irrigation Technologies, Accuscapes Landscaping, Bullfrog Irrigation, Chane Irrigation, Creative Scape Design, Green Industry Alliance, Irrigation Services, Lone Star Irrigation, Lower Colorado River Authority, MacAg Technical Services, Nash Irrigation & Landscape, Water Resources Council of North Central Texas Council of Governments representing 26 member communities, Outdoor Concepts, James Stewart Irrigation, RVi, San Antonio Water System, Sierra Club, Software Republic, Turf Pro, Webbers Landscaping/Sprinkler Company, and seven individuals generally supported adoption of the rules.

Christian Irrigation, City of Austin Water Utility, City of San Angelo, Continental Irrigation, City of El Paso, City of San Angelo, Dallas Irrigation Association, Houston Gulf Coast Irrigation Association, Irrigation, Etc., Irrigation Services Unlimited, Lubbock Chamber of Commerce, Moore Sprinkler Company, Inc., Powerspray Landscape & Sprinkler, Texas Turf Irrigation Association, submitting comments from ten local associations, Water Smart Irrigation, Inc., Wilson Irrigation, and three

individuals supported portions of the rules and expressed concern over some of the requirements or recommended some changes.

The Irrigation Association (IA) and Rio Grande Valley Irrigation Association provided comments. Ace Sprinkler, City of Lubbock, and City of McKinney requested clarification of the requirements. Cantrell Landscaping & Irrigation advocated increased enforcement against unlicensed individuals.

A Best Lawn Sprinklers, Aquamax Sprinkler Systems, Austin Lawn and Sprinkler Association, Bastrop Gardens, City of Dallas, Degreed Landscaping, Delta Irrigation, Dew Drip Irrigation, Down to Earth, East Texas Irrigation Association, Express Lawn Sprinklers, Farmer's Nursery, Ground Cover, Key Sprinkler, Kirkland Sprinkler, LMS Inc., Lupton Irrigation, Mac's Landscaping and Irrigation, Prince Irrigation, Smart Outdoor Services, Texas Panhandle Irrigation Association, Utz Environmental Services, and Waterspirit, Inc. and two individuals did not support the rules.

The commission appreciates the comments.

The commission's responses to comments received has been organized by subject area. The subjects are: irrigation systems subject to rule; design of irrigation systems; new installations; drawing of actual installation; design standards, supervision; records; water conservation; maintenance checklist; definitions (not covered in other areas); standards of conduct; local regulations; business owners and irrigators-in-charge; irrigators, installers and irrigation technicians; irrigation inspectors; seal; backflow prevention; cross-connections; design and installation requirements; maintenance, alteration, repair or service of an irrigation system; reclaimed water; advertisement,

contracts, and warranty; Irrigator Advisory Council; no authority; local authority; Administrative Procedure Act; costs; enforcement; and other comments.

Irrigation Systems Subject to Rule

Several comments were received that suggested some rule components should not apply to all irrigation systems. Comments were received that designs should be optional; be required for commercial projects; that a threshold should trigger drawings; and scaled drawing should be required when the flow rate exceeds 35 to 40 gallons per minute. Some commenters supported drawings for all irrigation systems.

The commission responds that the requirement to prepare and have an irrigation plan on-site during the installation of a new irrigation system has not been changed. The commission responds that HB 4/SB 3 required the adoption of rules that address the design, installation, and operation of irrigation systems, water conservation, and the duties and responsibilities of irrigators. The adopted Chapter 344 rules meet those requirements and will raise the bar for the performance of landscape irrigation services in Texas. The rules mirror some of the IA's April 2005 BMP, that states an irrigation designer or consultant should supply an "Irrigation Design Package" to the irrigation system owner or owner's representative. The package would provide the irrigation system owner or owner's representative with documented irrigation site and zone specific information and values used in design calculations. Providing the owner or owner's representative a copy of the plan will facilitate future repairs due to wear or breaks as the system ages or for additions or modifications to the landscape or irrigation system. The actual plan will facilitate repairs by allowing owners to replace components with like equipment so that routine maintenance

will be accomplished in a manner that will maintain the irrigation system's integrity and will conserve water. The commission did not make changes to §344.61(a) as a result of these comments.

Design of Irrigation Systems

Comments were received on the definition of "design" (§344.1(8)) and the design requirements (§344.61). Some commenters did not think a design should be required. Several commenters supported the design requirements. Several commenters requested clarification of specific requirements.

The commission responds that a design has always been required (See §344.95, Design). The commission was required by HB 4/SB 3 to adopt rules governing the design, installation and operation of irrigation systems. The requirement to produce and provide the irrigation plan to the irrigation system owner or owner's representative is responsive to the legislative mandate to develop rules that address the design of an irrigation system and to address water conservation. A good irrigation design will conserve water by determining the most efficient way to maintain healthy plant life based on factors such as the amount of sun the area receives, the type of soil, wind direction and speed, and any slope in the area being irrigated. Each irrigation system will have a unique combination of features that must be considered to develop a good irrigation system design. Even a large subdivision with hundreds of almost identical homes will have different irrigation requirements - some lots will be corner lots, some yards will have full sun, others will have no sun and the water pressure will be different, thus a design is needed.

The Irrigation Association's (IA) April 2005 Turf and Landscape Irrigation Best Management Practices document (BMP), Appendix B - Irrigation Design Package, states that an irrigation

designer or consultant should supply an "Irrigation Design Package" to the irrigation system owner or owner's representative. The purpose of the package is to provide the irrigation system owner or owner's representative with documented irrigation site and zone specific information and values used in design calculations. The IA's Consumer Handbook (Handbook) states that a consumer should expect a scaled drawing as part of any proposal for a landscape irrigation system.

The basic landscape irrigation training course required for licensing in Texas teaches the need to measure the water pressure, calculate the hydraulic losses in the system, and review the watering needs of the landscape prior to installing an addition to the system. The exam that an irrigator must pass to become licensed requires design knowledge. Each irrigator must take continuing education courses to maintain a license; those courses teach design.

The as-built plan would help the homeowner when making future repairs due to wear or breaks as the system ages or for additions or modifications to the irrigation system.

The type of plan to be provided to irrigation system owner is not being mandated. Irrigators may use a computer assisted design program, a blueprint or sketch. It is important that the entries on the drawing are clear and legibly marked. The commission did not make any changes to the rule as a result of these comments.

IA commented that an analysis of system distribution uniformity and overall site water consumption in relation to evapotranspiration data and site specifics could be used to determine water use efficiency rather than a drawing for every irrigation site.

The commission responds that the information suggested by IA is only a part of the factors that should be considered in evaluating an efficient irrigation system. Distribution Uniformity (DU) is a measurement of the distribution of water over a given irrigated area. A perfect DU is 100%. A DU reading of 65% to 75% is considered good. Evapotranspiration is the combination of evaporation and transpiration from plant material. A design will address the types of sensors, controllers, valves and emission devices that will be used, which lead to a more efficient irrigation system. The irrigation plan will indicate the most efficient design considering all site specific information. The commission did not make any changes to the rules based on these comments.

Some commenters suggested removing the requirement to provide the irrigation system owner with the plan showing the actual installation of the irrigation system and some commenters provided alternative recommendations. Some commenters supported a design requirement.

The commission responds that HB 4/SB 3 required the adoption of rules that address the design, installation, and operation of irrigation systems, water conservation, and the duties and responsibilities of irrigators. The adopted Chapter 344 rules meet those requirements and will raise the bar for the performance of landscape irrigation services in Texas. The rules mirror some of the IA's April 2005 BMP, that states an irrigation designer or consultant should supply an "Irrigation Design Package" to the irrigation system owner or owner's representative. The package would provide the irrigation system owner or owner's representative with documented irrigation site and zone specific information and values used in design calculations. Providing the owner or owner's representative a copy of the plan will facilitate future repairs due to wear or breaks as the system

ages or for additions or modifications to the landscape or irrigation system. The actual plan will facilitate repairs by allowing owners to replace components with like equipment so that routine maintenance will be accomplished in a manner that will maintain the irrigation system's integrity and will conserve water. The commission did not make any changes to the rules as a result of these comments.

Some commenters stated that homeowners do not have the expertise or knowledge to review the plans, cities do not have the manpower to review the plans and that municipalities should make the decision to require a plan.

The commission responds that HB 4/SB 3 required the commission to adopt rules that address the design and installation of irrigation systems to conserve water. While most consumers probably would not be able to perform pressure system loss calculations or a design pressure calculation, the consumer generally knows where they want the irrigation system installed and what they want to water. The adopted rules do not require municipalities to review the plans. Municipalities with a population of 20,000 or more and water districts that choose to implement a landscape irrigation program are authorized to collect a permitting fee to cover the cost of the program. Local governmental entities may decide the requirements for their permitting program. Drawing a design and performing the supporting calculations were a critical part of the basic irrigation training course and exam. Irrigators must take continuing education courses to maintain their license, numerous courses have been and will be available that address design. An irrigator may contract the design, or any portion of the design, to another irrigator. The commission did not make any changes to the rules in response to these comments.

There were several comments about the "design" and "irrigation plan" definitions, alternative definitions were provided, clarity requested, and new definitions requested.

The commission responds that the irrigation plan describes the scaled drawing, the scope of the project and the document that represents the changes made in the installation of an irrigation system (an as-built plan or record drawing). The "design" includes all of the elements that are involved in developing the scaled drawing and may include items such as scheduling work. The term "design" was defined in §344.1(8) as the "act" of determining various elements in a landscape irrigation system that would result in an "irrigation plan." "Irrigation plan" was defined in §344.1(19) as "a scaled drawing" that would list "required information, the scope of the project, and represent changes made in the installation". The uses of the terms are consistent in Chapter 344. Information that is necessary to create site specific designs is taught in basic landscape irrigation courses and in continuing education courses that are required to maintain a landscape irrigator license in Texas. The term "scope of work" refers to the boundaries of what the project will accomplish and could include a timeline for accomplishing the project. The irrigator may determine what should be included in the scope of work. The commission agrees that emission devices should be used in the definition (§344.1(8)) of design to be consistent with the remainder of Chapter 344 and §344.43 (e) and (f) was changed to change the word "design" to "plan" to add clarity to the requirement.

New Installations

Numerous comments were received stating that the definition of new installation should not include adding irrigation zones because the current definition would trigger additional requirements and add cost to consumers. Alternative language was suggested that would add new definitions of "modified system and replacement system," "temporary system," and "extension or expansion of an irrigation system."

The commission responds that the definition of new installations has been changed to remove the phrase "or a system where one or more new zone valves are added to an existing system." Since the definition of "new installation" has changed, the permitting requirements would not be triggered by the state's rules. Local areas may have requirements that would require a new permit. The suggested definitions are not needed since the rule changed. Changes were made to §344.1(33) of the rules based on these comments.

Drawing of Actual Installation

Commenters supported and commenters disagreed with the requirement to make changes to the drawing used during construction to show the actual installation of the irrigation system. Several commenters requested clarity in how the requirement could be met and in the terms used in the rule.

The commission responds that the plan can be changed electronically or marked in pen or pencil to replicate the actual installation deviations from the plan. The irrigator or irrigation technician can make the changes as part of the on-site supervision. The plan may be kept electronically or in a binder or protective sleeve to prevent damage from the elements. The irrigation plan should be signed and sealed by the installing irrigator and may be stamped "as built" or "record drawing." A copy of the irrigation plan is provided to the irrigation system owner or operator as part of the final

walk through. Since the plan is ultimately provided to the irrigation system owner as part of the final walk through, the signature and stamp are not required. The commission has amended §344.61(a) to allow the use of an electronic plan on-site and has clarified the requirement to provide the irrigation system owner a copy of the final plan in §344.63(4) as a result of these comments.

Several comments were received stating that scaled drawings were not needed, other commenters stated that scaled drawings were needed, other commenters stated that scaled drawings were needed for commercial installations only. Some commenters provided alternative scales. An alternative proposal to use global positioning system (GPS) locations was received. Other commenters requested clarity in how the drawings could be used. One commenter stated that "design pressure" and "scale size" should be included.

The commission responds that HB 4/SB 3 require the commission to adopt and enforce rules related to the design, installation, and operation of an irrigation system and address water conservation. The irrigation plan should include a scaled drawing. A scaled drawing with the minimum essential information as delineated in §344.61 is important for ensuring the installation of the irrigation system is done to the design standards established by the licensed irrigator so that the system performs efficiently and does not waste water. The scaled drawing can be used by other licensed irrigators or the irrigation system owner to make repairs, replace the irrigation system components, or modify the system due to maturing landscape or additions to the irrigation system. The scaled drawings will provide for an objective inspection by landscape irrigation inspectors for purposes of confirming compliance with state and local requirements or water auditors in auditing the system. Use of GPS coordinates for scaled drawings is not practical because the accuracy

depends on the quality of the device being used which would require the commission to establish standards the GPS device would have to meet. Use of GPS locations would also be impractical for small sized systems, such as residential, installed to irrigate small areas with multiple zones. The suggestion on the use of flow to represent the irrigation plan can miss some of the critical design and system elements.

The plans, details, and designer intent must be clearly legible. The scale must be set to a standard scale that is indicated on the irrigation plan. The design pressure must also be indicated on the irrigation plan. Changes were made to §344.61(c)(8) and (9) to add the scale and design pressure to the list of items required in the irrigation plan. Changes were made to the rules as a result of these comments.

Several commenters stated that the actual drawing showing the installed irrigation system should be called "as built," "as-built drawings" or "record drawings" and suggested definitions for those terms.

The commission responds that several different terms are used by the industry. The actual drawing showing the installed irrigation system does not endorse any specific term. The commission did not make any changes to the rules as a result of these comments.

Design Standards

Comments were received that information required in the design standards, such as precipitation rates, watering requirements, etc., could not be provided by irrigators and end users could not use the information unless a special controller was used, so the requirement should be removed.

The commission responds that precipitation rates, plant watering needs, and distribution uniformity are taught in basic irrigation courses and are part of the examination to obtain an irrigator's license in Texas. Continuing education courses used by licensees for obtaining continuing education units for renewing licenses also incorporate these requirements in the training. The information is needed to properly set automatic controllers to deliver a sufficient amount of water to maintain healthy plants without over watering and wasting water. The information can be used by irrigation system owners or their representatives to reprogram automatic controllers. Since some controllers must be reprogrammed after a power outage, the information could be useful to irrigation system owners or operators. The commission did not make any changes to the rules as a result of this comment.

An individual stated that §344.61(c)(6)(A) assumes that all irrigation systems are automatic and suggested rewriting the phrase as "If irrigation system is automatic, then identify and locate controller."

The commission responds that a change to §344.61(c)(6)(A) has been made to reflect "controller" to address both manual and automatic controllers. Changes were made as a result of this comment.

An individual stated that the word "include" in §344.61(b) should be replaced with "identify the total" and replace "complete coverage" with "total coverage" to better identify that an irrigation plan might not cover all areas.

The commission responds that the word "include" has been used in the rules for several years and has a common meaning to irrigators in Texas. The commission did not make any changes to the rules as a result of this comment.

One commenter stated that the irrigation plan referenced in §344.61 should include quantitative information about annual water usage and provided recommended language.

The commission responds that while this is a viable objective, it is beyond the minimum standards these rules are intended to establish. The requirement to include quantitative information may be considered on a local basis or level. The commission did not make any changes to the rules as the result of this comment.

Commenters stated that the requirement that the installed backflow prevention method must be indicated or documented on the site irrigation plan should be removed.

The commission responds that the requirement that the installed backflow prevention method must be included because the owner can verify that the device selected is accepted by the local water purveyor. The backflow device is the single most important device to prevent contamination of the water supply. If the irrigation system owner later decides to inject fertilizer, pesticide or to install a treated component to prevent root growth in the irrigation system, information will be available to determine if a different type of backflow prevention device should be used. The commission did not make any changes to the rules as a result of these comments.

Supervision

Several commenters supported the requirement for on-site supervision. Some commenters stated that the definition of "supervision" should be changed and that a definition for "direct supervision" added. One commenter noted that corresponding changes would be needed in other areas.

The commission responds that there has been a requirement for many years for an irrigator to provide "direct supervision" to a person who assists in the installation, maintenance, alteration, repair, or service of an irrigation system (See Texas Occupations Code, §1903.002(c)(9)). The commission was directed by HB 4/SB 3 to adopt rules related to the duties and responsibilities of landscape irrigators. Beginning January 1, 2010, either the irrigator or the irrigation technician (working under the direction of a licensed irrigator) must be on-site at all times during the installation of an irrigation system. The definition of supervision includes on the job oversight and direction as well as defining direction by an irrigator over an installer and irrigation technician. The commission did not make any changes to the rules as a result of these comments.

Some commenters stated that the "irrigation technician" phrase, license requirements, duties and responsibilities, design and installation requirements should be removed from various sections of the rules. Some commenters stated that the phrase related to the irrigation technician working under the direction of a licensed irrigator beginning January 1, 2010 should be deleted.

The commission responds that the irrigation technician allows the irrigator to spend more time designing, consulting, selling and performing other duties while still providing on-site supervision during the installation of an irrigation system. The licensed irrigation technician will have

knowledge about installation of irrigation systems, be able to read and mark-up irrigation plans, inform the irrigation system owner or operator about how the irrigation system works and how to maintain the irrigation system. These are critical tasks in conserving water. The phase-in will allow time for irrigation technicians to become trained and licensed. The commission did not make any changes to the rules as a result of these comments.

Several commenters supported having a licensed person on-site at all times during the installation of an irrigation system. Other commenters did not support having a licensed person on-site during an irrigation system installation. Some commenters disagreed with the cost or timing of the requirement or requested clarity in the requirements. A commenter suggested the requirement apply only during critical steps such as backflow device installation, pipe fitting, valve setting, wiring, and other critical junctures. Another commenter suggested wording similar to the wording used by the Texas Department of Agriculture's pest control operations and certified applicators. Another commenter stated that with numerous electronic devices available, irrigators should be readily available. One commenter stated that if a technician passed a test, he should be allowed to perform work without supervision. Another commenter stated that supervision standards should be relaxed on residential installation. Some commenters stated that the rules were grossly unfair to small and micro businesses. Some commenters suggested an alternative approach of using an apprentice that would be on the job for two years, completed courses, and passed a test to become a technician.

The commission responds that the job site supervision language is critical in the installation of an irrigation system designed to conserve water. The commission was directed by HB 4/ SB 3 to adopt rules that address the duties and responsibilities of irrigators, the installation of irrigation systems,

and water conservation. A trained, licensed individual can make responsible decisions regarding the installation of the irrigation system, because even the best design for an irrigation system can be installed in such a way that water would be wasted.

As part of the completion of the irrigation system, the irrigator must sign a statement that the irrigation system was installed in compliance with all state rules and local regulations and provide the irrigation system owner with a copy of the plan showing the actual installation of the irrigation system. The irrigator signing the required statement must have knowledge that the irrigation system will operate correctly to conserve as much water as possible. Having on-site supervision with a trained irrigation technician while the irrigator is away from the site, better assures him the system was installed in compliance with state rules and local regulations.

A phase-in of the requirement to have an irrigator or irrigation technician on-site beginning January 1, 2010 will give the regulated community eighteen months to prepare for the new requirement. The phase-in time should allow sufficient time to recruit, train, test and license irrigators and irrigation technicians to meet the demand for on-site supervision.

The pest applicators license administered by the Texas Department of Agriculture requires successful completion of a test, insurance (\$100,000 for property damage and \$100,000 for bodily damage), a \$180 non-refundable fee, a Nursery License, that the applicant cannot have been convicted of a felony in the last five years, and the employer must submit an application. The commission proposal for an irrigation technician is less expensive and will require less paperwork.

Although electronic devices are available, irrigators or irrigation technicians must be able to evaluate site conditions and determine the impact of changes to the irrigation system that might impact the system's efficiency. An unskilled labor force would not be knowledgeable about how a change (for example using a different size pipe) could impact the performance of the irrigation system. The irrigation technician will not be required to be trained or tested on irrigation system design. Since the technician will not have this knowledge, the irrigator must supervise the irrigation activity.

An irrigator accomplishes work at the site through the people that are hired to perform the actual installation. It is important that irrigators supervise their staff to ensure irrigation systems are installed according to state law and the design and that any deviations from that design will not impact the integrity of the system. The irrigator is ultimately responsible for the irrigation system, so the irrigator must be responsible for the staff that installs the system.

The commenter did not provide any detailed comments or specific information to support the claims that the costs to small and micro-businesses in the fiscal note are incorrect.

The requirement for direct supervision of a person who assists in the installation, maintenance, alteration, repair, or service of an irrigation system has been in Texas Occupations Code, §1903.002(c)(9) for several years. The irrigation technician should assist the small business owner in on-site supervision that would otherwise require a licensed irrigator. The adopted rules will provide greater flexibility for small and micro businesses to comply with the legislative mandate. Since most

irrigation businesses are small/micro businesses, they are not at a competitive disadvantage since all irrigation businesses are required to comply with the adopted rules.

The adopted rules require the irrigation technician to complete a training class and pass the examination and then supervise or perform irrigation activities under the direction of a licensed irrigator.

The requirement in §344.30(c) for an irrigation technician to connect an irrigation system to a water supply has been changed. An irrigation technician will be allowed to connect an irrigation system to a water supply without the supervision of an irrigator. This change will make the installer and irrigation technician's duties compatible. Changes were made to the rule as a result of these comments.

A commenter stated that the direct supervision and design requirements cannot be complied with because of a disability. A commenter requested clarity in the on-site requirement.

The commission responds that the enabling legislation for licensing landscape irrigators exempts from the licensing requirement "a person who assists in the installation, maintenance, alteration, repair, or service of an irrigation system under the direct supervision of an individual described by Subchapter F of this chapter who is licensed under Chapter 37, Water Code". The licensed irrigator has been responsible for the "direct supervision" of staff for several years. In fact, allowing a licensed irrigation technician to perform on-site supervision should allow compliance with the legislative mandate more easily since the irrigator does not need to be at the job site at all

times but should be available to resolve any problems. As a supervisor, spot checks of work being performed are always appropriate. The requirement for a design has been a critical element in the classroom instruction and examination for licensed irrigators for many years. The design requirements are contained in §344.95 of the existing rules. Numerous continuing education courses cover the principles of irrigation design and continuing education is a requirement for maintaining landscape irrigation license. The change that these adopted rules requires is that the design be memorialized in paper or electronic form. Requiring a paper or electronic drawing of the irrigation system on the job site will allow the irrigation technician to carry out on-site supervision of crews that install the irrigation system. Correctly installing the designed irrigation system will conserve water. HB 4/SB 3 directed the commission to adopt rules that address the design and installation of irrigation systems and the duties and responsibilities of licensed irrigators. HB 4/SB 3 did not provide an exemption for irrigators that might not be able to accomplish the essential duties of design and installation of irrigation systems. However, the TCEQ complies with the Americans With Disabilities Act and does not discriminate on the basis of disability in the administration of its licensing and certification programs. The commission did not make any changes to the rules as a result of this comment.

Records

A commenter stated that the definition of "record of landscape irrigation activities" should not include design notes and irrigation plans. Some commenters stated the records requirements were onerous and burdensome. A commenter stated that there were too many records to retain.

The commission responds that requirement to maintain design notes and advertisements was removed. The irrigation plan is the scaled drawing which illustrates the selected placement of various components that comprise the irrigation system and is important in the repair, maintenance or alteration and maintaining a record of the irrigation system is sufficient. The commission did make changes to §344.1(40) based on this comment.

Some commenters stated that: an irrigator should not be responsible for maintaining records as required in §344.35(d)(5); irrigation system owners should provide information; the commission or any other agency should not be provided any paperwork; that irrigators should determine what records should be retained; or only the permit, warranty and contract should be maintained. IA stated that keeping copies of all records is not practical and that establishing recordkeeping requirements of contractual obligations from a business entity to a consumer was a more practical option.

The commission responds that HB 4/SB 3 directed the commission to adopt rules related to the duties and responsibilities of landscape irrigators. The records that are required in §344.38 do not include the design notes and copies of advertisements. If some parts of the specifications are used consistently, only one copy of the specifications need to be maintained (for example items that refer to the manufacturer's published recommendations). The remaining information is needed in the investigation of complaints. The commission did make changes to §344.38 as a result of these comments to remove the requirement to maintain the design notes and copies of advertisements.

A commenter stated that the agency was concerned about the environment but was creating more paper. Commenters requested clarification of §344.38, asking what was intended in making records available.

Commenters supported maintaining records for one year and two years. Commenters supported making records available in: 30, 14, 10, 7 and 5 days. IA commented that two days was not sufficient for small or micro businesses to make records available. A commenter stated that failure to have a plan on-site might need to have a shorter time frame to correct.

The commission responds that a change in §344.38 was made to allow ten business days to provide records to a requesting governmental entity. The records are essential in the conduct of inspections or investigations by irrigation inspectors to ensure the irrigation system in question is compliant with and that the irrigator complied with state laws and local regulations. Irrigators may choose to keep records electronically and make those available to the irrigation system owner or governmental entity or produce hard copies of documents if requested. If an irrigator chooses to keep electronic records, there would not necessarily be more paper used. The rules require the irrigation plan to be on-site during the installation. HB 4/SB 3 require the commission to adopt and enforce landscape irrigation rules related to the design, installation, and operation of irrigation systems, water conservation, and the duties and responsibilities of irrigators. Changes to §344.38 were made as a result of these comments.

Several commenters stated that if an inspector passed an irrigation system there was no reason for the irrigator to keep any records related to the irrigation system. Some commenters did not support requirements for installers and irrigation technicians to maintain records and to make those records available. Some commenters supported the requirement.

The commission responds that HB 4/SB 3 require the commission to adopt and enforce rules related to the design, installation, and operation of irrigation systems, water conservation, and the roles and responsibilities the rule will facilitate the review of complaints to determine compliance with the Chapter 344 rules or local ordinances or rules. It is important to obtain copies of the documents used in the sale, design, installation, maintenance, alteration, repair or service of an irrigation system in order to perform a full investigation of the complaint. An inspector is not required to review or maintain copies of contracts, warranties, or invoices. The commission did not make any changes to the rules as a result of these comments.

An individual asked if plumbers, electricians, landscape architects, or engineers have to keep sealed documents for three years. A commenter stated that no other industry in Texas had to keep these kinds of records.

The commission responds that irrigation system owner places his or her trust in an irrigator to design and install an irrigation system that conserves water. The commission does require maintaining records in other programs. The requirements are related to the duties and responsibilities to conserve a natural resource, water, as outlined in HB 4/SB 3. An irrigation system should work for three years so it is important to maintain records for that period of time. Many parts purchased by professional irrigators have a three-year warranty provided the manufacturer, maintaining records will help irrigation system owners obtain defective parts at no or a reduced cost. The commission did not make any changes to the rules as a result of these comments.

IA commented that regulatory authorities might abuse the requirement to produce records.

The commission responds that the intent of the rule is to facilitate the conduct investigations.

Regulatory authorities are held to high ethical standards. Almost every regulatory authority has a complaint and/or whistleblower process that can be used to report suspected abuse. The rule is not intended to allow regulatory authorities to abuse their power in the absence of a complaint. The commission did not make any changes to the rule as a result of this comment.

Water Conservation

Some commenters stated that irrigators should not be responsible for conserving water and that the requirement should be removed and one commenter stated the requirement was too extreme.

The commission responds that HB 4/SB 3 specifically requires the commission to adopt and enforce standards governing water conservation for irrigation system design, installation, and operation.

Since landscape irrigation systems use water and irrigators design and install irrigation systems, it is appropriate that water conservation be a responsibility of landscape irrigators. The commission did not make any changes to the rule as a result of these comments.

Several commenters stated that the definition of "water conservation" should be changed and provided alternative language. Several commenters noted that the definition of "water conservation" contained an incorrect reference.

The commission responds that the definition of water conservation was developed to be specific to the Chapter 344 rules so the reference to an irrigation system remains. The definition is needed to add clarity to §344.60, Water Conservation. A mature landscape will not need the water application that a newly installed landscape will need. The commission changed §344.60 to provide the correct reference to the definition of water conservation.

Maintenance Checklist

Some commenters suggested changes to the maintenance checklist definition to only include controller manual, basic scheduling including precipitation rates by station, with a recommended number of minutes to apply one quarter inch of water per day, the type of plant material being watered, the type of water distribution device being used, the instruction of the operation of the controller and testing the system, and the location of the emergency water shutoff for the irrigation system.

The commission responds that HB 4/SB 3 directed the commission to adopt rules related to the operation of irrigation systems and water conservation. The suggestion to limit the maintenance definition will omit critical items regarding the operation of the system. The adopted definition of maintenance checklist contains information that will help the irrigation system owner maintain and operate the irrigation system in a manner that will promote water conservation. The commission did not make any changes to the rules as a result of these comments.

Several commenters stated that all references to conducting a final walk through of the irrigation system with the owner or owner's representative, completing the Maintenance checklist, placing a sticker on the controller, providing a copy of the design plan to the owner, and that the sticker should be removed. Some commenters recommended changes to the walk through. Other commenters supported the final walk

through. One commenter recommended that real time evapotranspiration (ET) data be incorporated into the maintenance checklist.

The commission responds that HB 4/SB 3 directed the commission to adopt rules that address the installation, operation, and water conservation of irrigation systems. The irrigation system's owner or owner's representative must know how to operate and maintain the system to conserve water. The IA's Handbook states that a consumer should expect a full walk through of the irrigation system that will include full instructions on how to care for the system and how to use the mechanical components of the system such as controllers and timers. The items on the maintenance checklist are intended to provide the owner with the necessary information in order to operate the irrigation system in an efficient manner and help conserve water. The sticker on the controller contains contact information for the irrigator and the dates the warranty is valid. The final drawing showing the actual installation of the irrigation system will result in the ability to perform repairs more quickly and will allow the homeowners or irrigator to replace parts with identical parts resulting in water conservation. The drawing facilitates the assessment and changes as the landscape matures and plant watering needs change. Seasonal watering schedules, which irrigators are taught how to calculate in basic irrigation courses and in the continuing education courses, will assist the homeowner in operating an efficient irrigation system. If the owner of the system is aware of the assumptions that were made in designing the system, the owner may be better prepared to reprogram the controller to conserve water and maintain healthy plant material when those assumptions change. The definition of "maintenance checklist" states that the watering schedule is "suggested". The definition of "maintenance checklist" includes "any water conservation measures currently in effect from the water purveyor and the name of the water purveyor". The allowance

for real time ET data has been added to the rule in §344.63(2)(B). The commission made changes to the rules as a result of these comments.

IA and other commenters stated that the walk through and checklist requirements were not practical since many irrigation systems were installed at new homes prior to sale to an owner and some projects assign the responsibility for operating the system to the irrigator. Other commenters stated that the checklist requirement eliminates the opportunity for companies to differentiate themselves by offering excellent customer service.

The commission responds that the requirements are more than an opportunity for customer service relationships - they are a cornerstone in making irrigation system owners more aware of the water that is being used in the irrigation system and to provide information on how to reduce the amount of water being used. The sticker on the controller should help the new owner locate the installing irrigator. The package of information (manual, watering schedules, maintenance components, etc.) should be provided to the builder. The builder should, in turn, provide this information to the home owner just as operating information on the dishwasher or stove is provided. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that the wording in §344.62(o) relating to the on-site requirement should be changed to add "final walk through" to the paragraph.

The commission responds that §344.62 refers to the minimum design and installation requirements for an irrigation system. The "walk through" is a part of §344.63 and includes those requirements

which are necessary to complete the installation of the irrigation system installation. The commission did not make any changes to the rules as a result of this comment.

Commenters stated that a person or irrigation technician under the supervision of the irrigator-in-charge or an irrigator could complete the checklist and complete the final walk through. A commenter asked if providing a CD to an irrigation system owner covering maintenance of the irrigation system was acceptable.

The commission responds that the rules have been changed to allow an irrigation technician to perform the maintenance checklist items including the final walk through. Providing a CD to a customer that includes information on maintaining the irrigation system is a good tool and could assist the irrigation system owner perform routine maintenance. Changes were made to §344.63 as a result of these comments.

An individual commented that §344.63(2) should be clarified so that it is understood that irrigators should provide a copy of the maintenance checklist to the homeowner.

The commission responds that §344.63(2) has been changed to clarify the maintenance checklist must be provided to the owner, or the owner's representative. Changes were made as a result of this comment.

A commenter stated that the maintenance checklist requirement was cumbersome and caused extra liability to the irrigator.

The commission responds that the checklist will be created with minimal effort and the commission plans to provide a model template. The checklist can be repeated on every job. The information provided on the maintenance checklist will provide owners and operators with information to operate the irrigation system more efficiently, thus conserving water. The rule has been changed in §344.36(d)(2) to allow the irrigation technician to perform the final walk through which should make the process less cumbersome. Changes were made to the rule as a result of this comment.

An individual objected to sealing the maintenance checklist.

The commission responds that sealing the maintenance checklist constitutes the irrigator's acceptance of professional responsibility that the items on the checklist have been completed and provided to the irrigation system's owner or owner's representative. HB 4/SB 3 directed the commission to adopt rules related to an irrigator's duties and responsibilities. The commission did not make any changes to the rule as a result of this comment.

A commenter suggested that the checklist contain more sophisticated watering schedules.

The commission responds that the proposal has merit and the programming described may be performed by some irrigators as part of the initial controller programming. Local governmental entities may require the scheduling as a method to meet water conservation goals. The commission did not make any changes to the rule as a result of this comment.

A commenter stated that the end user can refuse to sign the maintenance checklist with no consequence and that the irrigation system should be red-tagged until the owner signs the maintenance checklist. A commenter stated that refusal to sign the maintenance checklist sounded confrontational.

The commission responds that the provision was included to allow an irrigator to notate the checklist that the irrigation system owner or owner's representative was unable or unwilling to sign the checklist was intended to prevent confrontation. Every irrigation system owner should want to protect the investment in an irrigation system and have the lowest water bills possible, but there may be occasions when it is impossible to get a signature on the checklist. The rule addresses those occasions. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that not all irrigation systems are automatic and provided alternative language for §344.63(2)(A) and (3). An individual stated that sticker provisions should be made for manual irrigation systems in §344.63.

The commission responds that the suggested change to §344.63(2)(A) states that if the system has an automatic controller, the manufacturer's manual should be provided. To clarify §344.63(3), a change was also made to the rule to clarify placement of the sticker on the automatic controller, and placement of the sticker for a manual controller. The commission changed the rule as a result of the comment.

A commenter stated that §344.63(2)(B), seasonal watering schedule, monthly effective rainfall, plant landscape coefficient factors and site factors should be provided only to irrigation systems installed with

an ET or smart controller and provided alternative language. An individual stated that an irrigator would need to understand irrigation auditing to correctly set the watering schedule in the controller.

The commission responds that this information would benefit all irrigation systems and can be used to calculate a watering schedule by hand or by computer. This information is needed so irrigation system owner's can change the watering schedule once plants are established and as seasons change. An irrigator is taught water scheduling in basic training courses that are required to become a licensed irrigator and in subsequent continuing education courses that are required to maintain landscape irrigation licenses. The commission did not make any changes to the rules as a result of this comment.

An individual commented that §344.63 should be changed to ensure that the responsibilities of the irrigator that designs the system and the irrigator that installs the system are clearly defined. An individual commented that he should not be responsible for ascertaining whether changes to designs were made by an installing irrigator and that the irrigator should not be required to collect and maintain as-built for jobs performed by other irrigators.

The commission responds that the language in §344.63(2)(D) has been changed to reflect that the installing irrigator is only responsible for the installation of the irrigation system. Changes to the language on the maintenance checklist should relieve the irrigator designing the irrigation system of any responsibility for as-built plans. Changes were made to the rules as a response to these comments.

Definitions

Some of the comments related to definitions have been addressed in the subject area.

Design pressure. One commenter stated that the sentence "Design pressure is also the manufacturer's published minimum operating pressure" was incorrect.

The commission responds that the definition has been revised to address the comment. Changes were made to §344.1(9) as a result of this comment.

Installer. A comment was made that the word "installer" should be removed from the rules and the only reference should be when the installer license will cease to exist.

The commission responds that the installer will have duties and responsibilities through December 31, 2009. The adopted rules become effective on January 1, 2009. The information is needed during the interim. The commission did not make any changes to the rules as a result of this comment.

Irrigation system. A commenter stated that the definition of "irrigation system" should have the words "and conservation" removed because it might imply that an irrigation system would conserve more water than using other methods to irrigate an area and generally, that is not the case.

The commission responds that although irrigations systems may have different applications, HB 4/SB 3 directed the commission to adopt rules governing landscape irrigation systems that improve water conservation. The purpose of the rules is to improve water conservation in irrigation systems,

so the term "and conservation" was not removed from the definition of irrigation system. The commission did not make any changes to the rules as a result of these comments.

Landscape irrigation. A commenter stated that the definition of "landscape irrigation" should be changed to include the phrase "the necessary amount of water to sustain the healthy growth".

The commission concurs with the comment and has changed §344.1(26) to respond to this comment.

Pass-through contract. An individual requested additional clarity and definition of the term.

The commission responds that a pass-through contract is one in which the irrigator or exempt business owner is not a party of the original contract. An example of a pass-through contract would be an owner who contracts with a general contractor to build a shopping center. The general contractor then sub-contracts work to an exempt business owner to install an irrigation system and landscaping. The commission did not make any changes to the rules based on this comment.

Zone Flow. A commenter stated that the definition of zone valve needed to include "gallons per hour" for low volume systems. Some commenters stated that the definition of zone flow would take four minutes (with an average 16-station test requiring 64 minutes) and would cost the customer \$60 to \$120 and would waste water. Another commenter stated that the only precise way to determine zone flow is to install a flow meter device or watch the water meter and estimate the zone flow which was only used in

water management software. A commenter stated that zone flow would change after more homes are added to the supply line.

The commission responds that the definition has been changed to reflect gallons per hour as an alternative measure for low volume systems and to allow a reading from a flow meter or to let the water meter stabilize after turning on a valve and take a valid reading at that time. The commission made changes to §344.1(45) based on these comments.

Commenters stated that new definitions were needed for "evapotranspiration", "precipitation rate", "dynamic pressure", "pressure regulation", "public water supply", "private potable water supply", and "irrigation efficiency". An individual commented that definition of items called out or detailed was needed but did not provide any additional specificity.

The commission responds that these terms are common terms in the irrigation industry and are taught in basic irrigation training courses and in continuing education courses needed to maintain irrigation licenses in Texas. Additional detail has been added as the result of other comments. The preamble to the rules also provides more detail. Commission landscape irrigation staff or local irrigation programs may be contacted for more specific information. The commission did not make any changes to the rule as a result of the comments.

Standards of Conduct

A commenter stated that the sentence "The legislature has vested the commission with the authority and duty to establish and enforce standards of professional conduct and ethics for practitioners in the

irrigation industry." should be deleted. A commenter stated that the requirements of §344.21 are to be used against irrigators and hold irrigators liable for too much.

The commission responds that in the current rules, Chapter 344, Subchapter F contained standards of conduct for licensed irrigators and installers and that the subchapter stated "the legislature has vested the commission the authority and duty to establish and enforce standards of professional conduct and ethics for practitioners of the irrigation industry". The intent of the standards of conduct was to prescribe responsibility and knowledge on the part of the irrigator and installer and to aid in governing the irrigation industry. It is the belief of the commission that the 81st Legislature by passing HB 4, SB 3, and HB 1656 did not provide direction to the commission to change that responsibility. The commission has not made changes based on the comment.

Local Regulations

Numerous commenters stated that exempting irrigation systems that are connected to a groundwater well used by the property owner for domestic use could eventually lead to contamination of a larger water source such as an aquifer. Commenters questioned why the exemption was provided and wanted to know the difference in the contamination of the water supply from the water source. Some commenters stated that an irrigation system connected to a groundwater well should be inspected and have the proper backflow device.

The commission responds that HB 1656 allows irrigation systems that are connected to a groundwater well used by a property owner for domestic use to be exempted from local regulation

including permitting, inspection, and enforcement. The commission did not make any changes to the rules based on the comments.

Commenters requested clarification of the inspection requirements, some commenters stated that HB 4, SB 3, and HB 1656 do not require inspections and that water on the discharge side of the backflow device was not required to be inspected by any governmental entity. One commenter supported the inspection requirements as a way to improve irrigation system installations.

The commission responds that HB 1656 requires municipalities with a population of 20,000 or more and allows water districts to adopt and enforce a landscape irrigation program that is at least as stringent as these adopted rules. Other political subdivisions of the state are not prohibited from adopting ordinances or regulations related to landscape irrigation to protect the public water supply. HB 4/SB 3 directed the commission to adopt rules governing irrigation systems and duties and responsibilities of irrigation licensees. The adopted rules establish inspection requirements for inspectors that may be employed or contracted with by the municipalities or water districts. Municipalities and water districts may establish additional inspection requirement for irrigation systems. The commission did not make any changes to the rules as a result of this comment.

Commenters requested clarification of the requirements of §344.30(f) and stated that a plumbing inspector may not be qualified to inspect irrigation systems.

The commission responds that HB 1656 allows municipalities and water districts to employ or contract with plumbing inspectors. HB 1656 did not authorize the commission to require additional

training of the plumbing inspectors. While a plumbing inspector may not be knowledgeable of all aspects of irrigation, municipalities and water districts may require additional training to ensure that their employees are knowledgeable about landscape irrigation. The commission did not make any changes to the rules based on these comments.

Some commenters supported allowing cities to adopt more stringent ordinances if needed. An individual stated that all municipalities should implement landscape irrigation programs. An individual questioned whether or not a smaller municipality or other districts could hire an independent irrigation inspector.

The commission responds that municipalities with a population of 20,000 or more and water districts may adopt more stringent requirements in their local ordinances or rules than these minimum standards. The statute does not prohibit municipalities with a population of less than 20,000 from establishing local minimum standards for landscape irrigation systems. Smaller municipalities or districts may hire an independent irrigation inspector. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that TCEQ should prohibit the practice of requiring all ditches to be open with PVC pipe installed writing side up.

The commission responds that the adopted and previous rules have never required ditches to be open with PVC pipe installed writing side up. This may be a local requirement. The commission did not make any changes to the rules as a result of this comment.

Business Owners and Irrigators-in-Charge

Some commenters requested more definition and clarity of an "irrigator-in-charge. A commenter questioned the use of the word "irrigator" in §344.64(a) and recommended that the correct usage is "irrigator-in-charge". A commenter stated that the phrase "irrigator-in-charge" should be added to §344.35(b), (c) and (d). A commenter stated that §344.71 should be changed from "irrigator" to "irrigator-in-charge". A commenter stated that the warranty references to "irrigators" should be changed to "irrigator-in-charge". A commenter stated that the provisions of §344.72(c) related to warranties for maintenance, alteration, repairs, or service were not needed since the provision was covered by an irrigator-in-charge.

The commission responds that an "irrigator-in-charge" role is to oversee irrigation services for an exempt business owner. The irrigator-in-charge would be responsible for all irrigation worked performed by the business owner. An exempt business owner must comply with the entire Chapter 344 rule requirements which include hiring a licensed irrigator to supervise the business's sale, design, consulting, installation, maintenance, alteration, repair, and service of irrigation systems. An irrigator-in-charge can work at his own business and for one exempt business at any given time. The irrigator-in-charge can perform all of the duties pointed out by the commenters for the exempt business owner. The commission did make changes to the definition of "exempt business owner" in §344.1(25) as a result of these comments to clarify that the irrigator-in-charge is employed by an exempt business owner.

Some commenters requested clarification of §344.34(c) asking if multiple crews at multiple job locations at the same time could work under one irrigator-in-charge. Some commenters stated that §344.34(c)

should allow a licensed irrigator to work for numerous companies. Additionally, some commenters stated that the company should not be held responsible for having an irrigator-in-charge if they had an irrigator perform irrigation work. A commenter stated that a licensed irrigator should be able to work for as many companies as he or she wanted and that the responsibility should follow an individual. Some commenters stated that it is impossible for one person to oversee every aspect of an irrigation company and that the irrigator obtaining the permit should be responsible for the project or share responsibility with the irrigator-in-charge.

The commission responds that an irrigator-in-charge, working for an exempt business owner, may have multiple crews at multiple job locations at the same time. A licensed irrigator may work for an unlimited number of companies. The "irrigator-in-charge" designation applies only to those irrigators working for an exempt business owner. An irrigation company owned and operated by a licensed irrigator does not need to designate an irrigator-in-charge. Therefore, the irrigator-in-charge must limit his work with multiple irrigation entities to a level that he can reasonably provide supervision to ensure that the design and installation of irrigation systems are correct, that sales, consultation, providing customer service, obtaining permits, scheduling inspections and other related activities are appropriately supervised. The commission did not make any changes to the rules as a result of these comments.

A commenter requested clarification of 1) the responsibility of the irrigator-in-charge and irrigator working from an irrigation design prepared by a licensed irrigator and exempt landscape architects and engineers; and 2) the role of the irrigator-in-charge as the sole irrigator responsible for activities.

The commission responds that if an irrigator-in-charge, as designated by an exempt-business owner, or irrigator working from an irrigation design prepared by an irrigator, exempt landscape architect or engineer and installs the irrigation system as designed, the designing irrigator is responsible for the design of the system meeting state requirements. If the irrigator-in-charge, as designated by an exempt business owner, or irrigator makes changes to the irrigation system that degrades the design resulting in the system failing to meet the state standards, the installing irrigator-in-charge or irrigator is responsible for the system. The commission did not make any changes to the rules as a result of this comment.

Commenters asked if a business owner could sell an irrigation system without an irrigator's license.

Commenters asked for clarification of an exempt business owner as the sole entity financially responsible for all irrigation activities and irrigation records. Commenters stated that §344.31 should address selling and connecting an irrigation system to the water supply. Commenters requested that language be added to clarify the role of an exempt business owner and that the business owner is responsible for all actions of the irrigator-in-charge while the irrigator is employed by the exempt business. Some commenters supported removing the provision for an irrigator-in-charge in the exemption for business owners.

The commission responds that an exempt business owner must employ a licensed irrigator, designated as an irrigator-in-charge, to be responsible for all irrigation activities conducted by the business. Since the irrigator-in-charge is designated by the exempt business owner to supervise all landscape irrigation activities, the irrigator-in-charge is responsible for those duties outlined in §344.35. The exempt business owner will be financially liable for irrigation activities and for irrigation records. The irrigator-in-charge is responsible for any enforcement actions that may be

taken related to the sale, design, consultation, installation, maintenance, alteration, repair and service of irrigation systems, under the irrigator-in-charge's supervision. The day-to-day activities of supervision and direction of an installer or irrigation technician, selling, designing, obtaining permits, installing or servicing irrigation systems requires the full attention of the irrigator-in-charge. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that a definition for "business owners" should be added.

The commission responds that the term "business owner" is defined in Texas Occupations Code, §1903.002(c)(10) as "an owner of a business that employs an individual described by Subchapter F of this chapter who is licensed under Chapter 37, Water Code, to supervise the business's sale, design, consultation, installation, maintenance, alteration, repair, and service of irrigation systems". The licensed person in the reference is a licensed irrigator. The commission did not make any changes to the rules as a result of this comment.

Irrigators, Installers, and Irrigation Technicians

Some commenters stated that the responsibilities needed to be clarified to address an irrigator that performs only design work and an irrigator that performed only installations.

The commission responds that an irrigation designer is responsible for using the stamp or rubber seal appropriately, designing irrigation systems that comply with state laws and local regulations, determining the appropriate backflow prevention method for each irrigation system installation, maintaining landscape irrigation system records, developing irrigation plans that comply with the

requirements of Chapter 344, ensuring that when selling or consulting that the requirements of Chapter 344 are met and providing advertisements and contracts that comply with the Chapter 344 requirements. Changes were made to §344.35(d) and §344.63(2)(D) to clarify the separation of responsibilities for an irrigator that performs only design work. In addition, the language in §344.43 has changed to separate the responsibilities of an irrigator that performs design work and an irrigator that installs irrigation systems and to address the use of "design". The language in §344.43(b) has been changed to read "The presence of the irrigator's seal displayed above the irrigator's signature and date on any document constitutes the acceptance of all professional responsibility for the document and the irrigation services performed by the irrigator in accordance with that document". The change in the language reflects the acceptance of responsibility for the installation or design. The word "should" is enforceable since the investigator will be able to determine whether or not the work performed by a second irrigator is clearly identified. Changes were made to the rules as a result of these comments.

A few commenters requested clarification related to §344.35(d)(12), asking if a controller had to be replaced by another irrigator, whose sticker would be placed on the new controller.

The commission responds that the sticker would provide information to the irrigation system owner about the warranty period and information to contact the irrigator. If the irrigator is replacing a controller installed by another irrigator, it may be assumed that the original warranty is no longer valid. The irrigator installing the new controller would use his sticker for contact, should there be a controller warranty issue. The commission did not make any changes to the rule based on the comments.

A commenter stated that "water audits" should be added to the list of duties that an irrigator can perform, be listed in the license requirements, and in the definition of "irrigator".

The commission responds that water audits are the on-site survey and measurement of irrigation efficiency and the generation of recommendations to improve water management efficiency. TCEQ encourages the use of water audits as a tool to reduce water consumption. Since water audits were not part of the original proposal and including the task at adoption could be considered increasing the scope of the irrigator's job functions, the Administrative Procedure Act precludes making such changes without adequate public notice. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that the definition of "irrigation technicians" was the same as the definition of "licensed irrigator" except that licensed irrigation technician could not design, sell or offer consultation on irrigation systems and this was redundant and a waste of time.

The commission responds that it better serves the definition to specify those responsibilities which the technician can perform, rather than to state he can perform all the responsibilities of an irrigator except to provide designing, selling, and consulting services. The commission did not make any changes to the rules as a result of this comment.

Some commenters suggested an alternative approaches such as multi-levels or of using an apprentice that would become a technician.

The commission responds that the suggested alternative approach of a multi-tiered license is outside the scope of the proposed rulemaking and including these changes at this point could be considered increasing the scope of the rules which could have a significant impact on existing and prospective applicants. The Administrative Procedure Act precludes making such changes without adequate public notice and giving parties an opportunity to comment on such issues. The commission did not make any changes to the rule as a result of this comment.

Some commenters stated that §344.34 was not enforceable because of the use of the word "may" rather than "should, must or shall".

The commission responds that the word "may" was changed to "shall" in §344.34(a) as a result of this comment.

An individual stated that "selling" should be included in the definition of irrigation services.

The commission concurs with the comment and has added the term "selling" to the definition of irrigation services in §344.1(20). The commission made changes to the rules as a result of this comment.

A commenter stated that all dates in §344.30 and §344.36 should be 2010.

The commission responds that the rules will go into effect on January 1, 2009, as mandated by HB 4/SB 3. The requirement to have a licensed irrigator or licensed irrigation technician on-site at all times during the installation, maintenance, alteration, repair, or service of the irrigation system will begin on January 1, 2010. That part of the rules was phased-in to allow time to develop the training, testing and licensing of sufficient irrigation technicians to meet the anticipated demand. The commission did not make any changes to the rules as a result of this comment.

Commenters stated that the duties of the irrigation technician should be changed to allow the irrigator time to perform other duties.

The commission agrees that the irrigation technician may assist the irrigator by sharing responsibility in the field. The language in §344.36 allows the irrigation technician to perform those duties. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that a "final walk through" should be added to the irrigator's responsibilities in §344.35(d).

The commission responds that the language is sufficient to allow the irrigator to perform the "final walk through" if the irrigator chooses to perform the duty. The commission did not make any changes to the rules as a result of this comment.

Irrigation Inspectors

Some commenters stated inspectors should not verify irrigation technician licenses.

The commission responds that the commission is granted authority under Texas Occupations Code, §1903.053 to administer the landscape irrigation program that includes enforcement. HB 1656 grants authority to municipalities and water districts to employ or contract with a licensed plumbing inspector, licensed irrigation inspector, or district operator for water districts, to enforce the adopted ordinances or rules. Verification of licenses is within the enforcement authority granted to the commission, municipalities, and water districts. The commission did not make any changes to the rules as a result of this comment.

An individual stated that an inspector's duties should be changed to include a reference to the required design on-site.

The commission responds that the requirement to have a design on-site is covered in §344.61(a) and does not need to be included in §344.37(b)(3). The commission did not make any changes to the rules as a result of this comment.

Seal

IA and an individual stated that §344.40 could be interpreted to mean that the irrigator should have the seal at all times. Another commenter requested modification to include "stamp" because a seal seemed to indicate a metal embosser.

The commission responds that the intent of §344.40 is that an irrigator should not engage in any landscape irrigation services without the physical possession of a seal and the license. The irrigator

should have the seal available for use on documents. The use of a stamp that meets the requirements of §344.41 is acceptable. The commission did not make any changes to the rules as a result of these comments.

IA requested clarification of the requirement to produce the seal within two days of the request.

The commission responds that irrigators are no longer required to submit to the executive director a duplicate impression of his seal on letterhead or business stationery or to notify the executive director of any changes in the seal. Since the irrigator is no longer required to submit the impression, the commission or another governmental entity may request a copy of the seal impression to investigate complaints. It should be noted that the requirement to provide records has been changed to provide records within ten business days. The commission did not make any changes to the rules as a result of this comment.

IA stated that the seal should not be required on the maintenance checklist. A commenter stated that the seal should be treated as a liability.

The commission responds that the maintenance checklist is a key item in educating irrigation system owners about the proper use of the irrigation system. The seal is not a liability. The use of a seal on documents usually indicates the acceptance of professional responsibility for the document and a professional service performed in connection with the document. The seal is an ethical and professional requirement that is used to hold a licensee to a higher standard of conduct and performance. The commission did not make to the rules as a result of these comments.

Some commenters stated that the only items that require a stamp are irrigator generated documents.

The commission responds that items that are not irrigator generated documents such as a manufacturer's warranty should not be sealed. The commission did not make any changes to the rules as a result of these comments.

Some commenters questioned if an irrigator should seal all pages of plans and specifications.

The commission responds that irrigators should seal only the cover or index page of a set of bound documents. A bound document could be stapled, glued or in a binder. If the document does not have a cover or index page or if the document is unbound, all pages should be sealed. Electronic documents should have the seal on each page. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that anyone could get a stamp or seal and asked why the seal was important.

The commission responds that the presence of the irrigator's seal and signature constitutes professional responsibility for the document and the irrigation services performed in accordance with the document and certifies that the system was properly installed. Upon being licensed by the commission, each irrigator is required to obtain a seal. Licensed irrigators may not engage in any landscape irrigation services without the physical possession of the seal and license. Any unlicensed person using an irrigator's stamp or seal or a licensed irrigator that does not use the stamp or seal

appropriately is subject to enforcement action by the commission. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that the preamble stated that the irrigator's signature should be below the seal, but §344.61 stated the signature should be over the seal, and §344.43 stated that the signature should be above the seal. A commenter stated that the location of the signature should be clarified so that the signature would not hide the name and license number of the irrigator.

The commission responds that the language in the preamble has been changed to reflect the correct location of the irrigator's signature, beneath the seal. The language in §344.61 related to seals and signature has been repealed effective January 1, 2009. The location of the irrigator's signature (beneath the seal) will not hide the name and license number of the irrigator. Changes were made to the preamble as a result of this comment.

A commenter stated that scanned signatures should not be applied to drawings because the signature can be applied by someone else without the irrigator looking at the drawing.

The commission responds that scanned signatures can be applied by someone else just as the irrigator's seal or stamp can be applied by someone else without the irrigator's review. The presence of the seal above the signature and the date indicate the irrigator's acceptance of professional responsibility for the document and that irrigators are responsible for the security of the seal. The commission did not make any changes to the rules as a result of this comment.

Backflow Prevention

Numerous commenters stated that the y-type strainer should be located on the inlet side of the backflow prevention device, some commenter stated a strainer was not needed, or was needed when water was from a lake, river, pond or well.

The commission responds that the purpose of a y-type strainer is to prevent debris from going into the double check valve and possibly preventing the double check valve from operating correctly to prevent contamination of the water supply. The y-type strainer should be located on the inlet/supply side of the double check assembly. A change was made to §344.50(e)(3) the rules to indicate the correct location of the y-type strainer.

Some commenters supported locating double check valves underground, one commenter stated that some double checks have ferrous plugs and installation below ground could create problems and other commenters stated the double check backflow prevention device should be installed above ground.

The commission responds that double check valves may be installed below ground per industry standards. In order to be in compliance with §344.50(e)(2), test cocks on double checks installed below ground are to be made of non-ferrous material. Irrigation systems that do not have chemicals injected into the system are a non-health hazard, so a double check valve is acceptable. Local areas may have more stringent standards. The commission did not make any changes to the rules based on these comments.

Some commenters stated backflow devices should be tested annually. One commenter requested clarification of why an irrigation system was not considered a high hazard. Another commenter requested language that would clearly state all backflow devices had to be tested at installation.

The commission responds that in a health hazard situation where there is the potential to introduce a substance into the potable water supply that could cause death or illness, spread diseases, or that has a high probability of causing death, illness, or spreading diseases, the backflow prevention device must be inspected annually. Backflow prevention devices that are used in situations that are identified as non-health hazard must be tested upon installation. Local areas may adopt more stringent standards that would require a test annually or at another interval. The Chapter 344, Landscape Irrigation rules are consistent with the requirements of the Public Drinking Water in Chapter 290 rules which identify irrigation systems without chemical additives as non-health hazards. The commission did not make any changes to the rules as a result of these comments.

A commenter asked for clarification of why other backflow prevention devices are allowed if a chemical is added to an irrigation system. An individual questioned if §344.51(a) had always been a reduced pressure principle. A commenter stated that "chemical" should be defined.

The commission responds that a reduced pressure principle backflow prevention assembly device is the most effective mechanical assembly. The reduced pressure principle backflow prevention assembly device is required when a chemical is added to an irrigation assembly. The definition of "chemical" has not been added to the rules since it is taught in basic irrigation training course. The commission did not make any changes to the rules as a result of these comments.

Cross-Connections

A commenter stated that the definition of "cross connection" in §344.1 and §290.8 were different and that an actual or potential connection is not the same as a physical connection.

The commission responds that the definitions found in Chapter 344 are specific to the Landscape Irrigation Program. The definitions found in Chapter 290 apply to Public Drinking Water Systems. Certain terms are defined in both chapters, but due to the different focus of these chapters, the definitions have been tailored to either landscape irrigation or public drinking water systems. When evaluating compliance with the regulations of these two chapters, individuals should ensure that the definitions being used correspond to the appropriate chapter. The commission did not make any changes to the rules as a result of this comment.

Some commenters support the restrictions on cross connections. Some commenters stated that the way §344.51(b) was written would discourage rainwater harvesting and the interconnection of potable and non-potable water source should be allowed if a reduced pressure principle backflow prevention device was installed. A commenter stated that adding an isolation valve and limiting the connection to a secondary back-up supply, one source at a time should be allowed. Some commenters questioned why the language was included. A commenter requested clarification of the requirement in §344.51(b) that would prohibit the interconnection of potable and non-potable water sources in an irrigation system and stated that proposed §344.75(c) allowed the interconnection through a "high health hazard" backflow prevention device.

The commission responds that §344.75(c) will be repealed through this rulemaking. Based on these comments, however, a change was made to §344.51(b) to allow the interconnection of a potable and non-potable water source with a reduced pressure principle backflow prevention assembly or an air gap. A change was also made to remove §344.65(3) to allow the use of reclaimed water in irrigation systems connected to the potable water supply if a reduced pressure backflow prevention device or air gap is used.

A commenter stated that the difference between "aspirated" and "injected" additives should be clarified and a commenter stated that §344.51(a) should be modified to include the phrase "or injected", while another commenter stated that §344.51(c) should be modified to include the phrase "induced during the manufacturing process" to better clarify the rules.

The commission responds that the reduced pressure principle backflow prevention assembly device is the most effective backflow prevention device, therefore the reduced pressure principle backflow prevention assembly device is required whenever chemicals are added (by aspiration or injection) to an irrigation system. The commission agrees that §344.51(c) should be modified to include the phrase "aspirated, injected, or emitted from a chemical delivery system" to clarify the requirement that a reduced principle backflow prevention assembly is needed for any type of chemical used in conjunction with an irrigation system. The modified language has been added to §344.51(c) as a result of these comments.

A commenter stated that §344.75 conflicts with §344.51(b) and that the term "high health hazard" should be changed to "health hazard".

The commission responds that the language in §344.75 is repealed by this rulemaking. The commission has adopted §344.51 to replace §344.75. Section 344.51 does not contain the term "high health hazard", the commission did not make any changes to the rules as a result of this comment.

A commenter stated that "major maintenance, alteration, repair, or service" was defined but was not used in the rules and recommended using the phrase in §344.36(d)(2). Several commenters supported the requirement to require a backflow prevention device during major maintenance, alteration, repair, or service was conducted.

The commission responds that "major maintenance" was used in §344.52(a) which describes when a backflow prevention device must be installed during the maintenance, alteration, repair, or service of an irrigation system. An irrigation technician may provide on-site supervision of all maintenance activities so the term "major maintenance" was not added to §344.36(d)(2). The commission did not make any changes to the rules as a result of this comment.

A commenter stated that §344.52(c) which requires an irrigator to test the backflow prevention device prior to being placed in service, should have "in service" defined, and another commenter stated that irrigator should be given 30 days to provide the test report to the water purveyor.

The commission responds that the language in §344.52(c), the term "in service" refers to when the irrigation system is fully operational, has been successfully tested, and verified acceptable for use. The irrigator should schedule and coordinate the test of the backflow prevention device with the

backflow assembly tester to protect the water supply. The irrigator should be able to provide the test report to the water purveyor within the ten business days provided in §344.52(c). The commission did not make any changes to the rules as a result of these comments.

Design and Installation Requirements

Spacing - some commenters stated that sprinkler heads should be installed no closer than two inches from a hardscape rather than four inches and one commenter stated that the term "impervious surfaces" covers everything and the list is not needed. Some commenters supported changing the requirement that the area where the above ground emission devices shall not be installed should be four feet or less in length or width some supported five feet or less, one commenter supported eight feet or less, and some suggested clarifying the way the area would be measured. A commenter stated that watering across narrow impervious surfaces should be considered in certain situations.

The commission responds that pop-up spray or rotary emission devices that are closer than four inches to a hardscape waste water because there is some water back throw from emission devices. Allowing four inches of spray will allow more soil to absorb the water. The examples of impervious surfaces were meant to clarify and provide examples of items that the commission considers to be an impervious surface. The commission agrees that there are strip nozzles that can cover areas that are 48 inches or less without watering hardscapes and has changed the rules to allow the 48 inches requirement, but has altered the language to ensure that the measurement relates to soil and not curbs, pavement or other hard surfaces. The commission also recognizes exceptions from the requirements in some limited instances, such as narrow meandering paved walkways, jogging paths, golf cart paths, cemeteries, or other small impervious areas that should be exempted from

the requirement because more water would be used in avoiding spraying water onto the surface than the small amount that might run off the paved surface. The commission changed §344.62(b)(2) and added §344.62(b)(3) to address the concerns. The commission made changes to the rule based on these comments.

Water pressure - Some commenters requested clarification of the water pressure requirement related to emission devices.

The commission responds that the intent of the rules is to clearly state that the installation of an emission device that operates below the minimum or above the maximum sprinkler head pressure published by the manufacturer is a violation of the Chapter 344 requirements. Flow control valves, a pressure regulator, or pressure compensating spray heads are methods that could be used if the pressure is too low. The commission did not make any changes to the rules as a result of these comments.

Piping - One commenter stated that the requirement should be completely revised to reflect mainline and lateral line piping. Another commenter disagreed with the preamble's phrase "thus wasting water". A commenter stated that main line and lateral piping would have to be sized.

The commission responds that the purpose of the limit is to minimize the surge damage done to pipes, which can lead to breaks and leaks which lead to wasted water. The accepted limit in irrigation design is five feet per second for PVC pipe. The national IA's "Foundations of Landscape Irrigation Design" states that the velocity limit technique is the most common method to size pipe.

Placing the commonly accepted industry practice in the rules will lead to long term water conservation. The commission did not make any changes to the rules as a result of these comments.

Zones - Some commenters asked for clarification of "hydrological requirements", "plant material", "microclimate", and "topographic". A commenter opposed requiring separate zones based on plant and soil type. Some commenters stated that irrigation zones should not be based on microclimate, hydrological requirements, and soil conditions. One commenter stated that the rules would create more zones than were needed. Another commenter stated that the requirement is too vague from an enforcement standpoint.

The commission responds that HB 4/SB 3 directed the commission to adopt rules that address the design and installation of irrigation systems and water conservation. Correctly addressing the hydrological, plant material, microclimate, and topographic requirements are key components of design, installation, and water conservation. The commission considers microclimate to be items like structures, paved areas, shade, wind conditions, or direct sunlight. Topographic conditions refer to the slope (which can influence the pressure of the sprinkler system) and the elevation (related to runoff) and grade (a slope in connection with drainage). Hydrological requirements are the groupings of like emission devices so that the maximum gallons per minute of available flow is not exceeded and performing the calculations to determine that the system will operate efficiently. The IA's "Foundations of Landscape Irrigation Design" manual dated March 2002 states that the basic information that should be discussed with the owner (or owner's representative) includes hydrozones and microclimates (page 4 and 5). The document explains that a hydrozone is an area containing plants that will be irrigated on the same schedule using the same irrigation method. The

commission considers turf, trees, and flower beds as areas that should be on different zones. The manual explains that the information may be obtained from a planting plan or an actual site survey. The manual also states that "microclimates are relatively easy to identify" and that the variations in environmental conditions are important to sprinkler selection, zoning and scheduling. These concepts are taught in basic irrigation courses and continuing education courses that are required to maintain irrigation licenses in Texas. These items can be observed and documented, so they can be enforced. A trained inspector will be able to tell the difference between a poorly designed and installed irrigation system that would have trees and turf on the same zone. A trained inspector can observe differences in a microclimate and determine if the system has been zoned appropriately. The commission did not make any changes to the rules as a result of this comment.

Matched precipitation rates - A commenter stated that the requirement should include a performance standard, such as within 20%.

The commission responds that §344.62(f) requires that zones must be designed and installed so that all of the emission devices in that zone irrigate at the same precipitation rate to ensure uniform application of water. Not having a matched precipitation rate will result in over watering or under watering areas of the zone. The commission did not make any changes to the rules as a result of this comment.

Spraying water - A commenter stated that the requirement should be removed because on-the-job training would address the requirement. Two commenters said the rule would be impossible to enforce. One

commenter recommended not allowing a design with overspray in a zero wind condition. Another commenter stated that a tolerance factor should be provided.

The commission responds that any violation that can be observed and documented can be enforced.

Trained inspectors know that even well-designed and installed systems may overspray when it is windy. They will also know that the law is intended to address systems which are designed and installed poorly without regard to surrounding impervious surfaces. An example of a poorly designed and installed irrigation system would have a full circle emission device located next to a driveway or sidewalk and spraying on the driveway or sidewalk compared to a well designed and installed irrigation system that has a quarter circle emission device located next to a driveway but spraying on the driveway. The agency removed minimum wind derating standards from the adopted rules because the requirement was dated and new technology can address the issue. The commission agrees that on the job training will help improve the quality of the irrigation systems installed. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that the requirement should be modified to not allow water to run into a municipal storm drain.

The commission responds that the adopted rules will reduce the runoff to municipal storm drains by minimizing the spray of water on sidewalks, streets and other paved surfaces as contained in §344.62(g). The commission did not make changes to the rules as a result of this comment.

Master Valve - Some commenters supported requiring master valves, other commenters requested clarification of the requirement (if any) and suggested alternative language, some commenters stated that the rule could not be enforced. An individual stated that the language in §344.62(h) should be changed from "if required" to "when required" to correctly reflect where the master valve should be located. Another commenter stated that the master valve does not conserve or protect the water supply.

The commission responds that a master valve closes when leaking water is detected. There are instances where a master valve may be installed, such as when an irrigation system is installed at a second home or when the owner is a frequent traveler and would not see that the irrigation system is malfunctioning. When leaking water is detected, a master valve controls the flow of water to the remainder of the irrigation system. When the irrigation system does not operate, the master valve is closed, so the irrigation system is not under pressure. Since the irrigation system is not subject to constant pressure, the system should last longer. This conserves water. In response to these comments §344.62(h) has been changed to read, "When provided, a master valve shall be installed on the discharge side of the backflow prevention device on all new installations".

PVC pipe primer solvent - Numerous commenters supported removing the requirement, a commenter stated that on-the-job training would address the requirement and another commenter stated that requirement was not enforceable. Some commenters suggested making the requirement optional. Some commenters supported the requirement with some changes such as in accordance with manufacturer's guidelines or in accordance with plumbing codes. A few commenters did not support requiring the use of purple primer. IA commented that colored primer should not be required on any pipes that are above ground. A commenter stated that colored primer will not promote water conservation.

The commission responds that primer helps to prepare PVC pipe for cement to ensure a long-lasting connection. If primer is not used, the connection may degrade faster and cause leaks that lead to wasted water. Some manufacturers have stated that primer may not be needed in some instances. To be consistent with various manufacturers recommendations, the rule language is being changed to reflect that primer should be used in accordance with either the Uniform Plumbing Code (Section 316) or the International Plumbing Code (Section 605). The use of colored primer on pipes that are above ground could be unsightly if the primer is not applied correctly. The correct application of primer will result in a faint purple cast less than an inch wide on the pipe. The use of colored primer will allow an inspector to easily identify that primer has been used. Changes were made to §344.62(i) as a result of these comments.

A commenter stated that the correct reference should be "primer and solvent".

The commission responds that the correct term is "primer and solvent" however, the industry jargon is "primer solvent" so that term was used. The commission did not make any changes to the rules as result of this comment.

Rain or moisture shut-off device - A commenter stated that automatic weather or sensor based controllers should be used on all installed systems and that a large system should be solar powered and isolated from the electrical grids if possible and provided suggested alternative language. A commenter suggested a definition of "weather or sensor based irrigation controller".

The commission responds that there is insufficient information on the EPA's WaterSense program's expectations or specifications for controllers at this time, and is therefore reluctant to mandate their required use until the specification is developed. The commission supports the use of solar powered controllers, and encourages governmental entities to consider their use when practicable. Since weather or sensor based irrigation controllers are not required, a definition is not needed. The commission did not make any changes to the rules as a result of this comment.

Commenters suggested deleting the requirement for rain or moisture sensor or other technology because on-the-job training can address the requirement and it would be impossible to enforce. A commenter supported the requirement to install rain sensors. Other commenters stated that sensors should be required but not in the El Paso or West Texas area because of the area receives little rainfall. Another commenter stated that language could be added that would allow areas of the state with extreme climates dictate the type of sensor used.

The commission responds that the counties of El Paso, Hudspeth, Culberson, Jeff Davis, Presidio, Brewster, Terrell, Loving, Winkler, Ward, Reeves, Ector, Crane and Pecos have low annual rainfalls (according to the 2006-2007 Texas Almanac) and have been exempted from the requirement to have a rain or moisture shut-off device or other technology. A trained inspector can verify that a rain or moisture shut-off device or other technology is installed and operational so it can be documented and is enforceable. The commission has changed §344.62(j) based on this comment.

Some commenters supported a rain/freeze sensor on every irrigation system.

The commission responds that the requirement for a freeze sensor was considered. The use of a freeze sensor is more responsive to safety issues than to water conservation. The determination to require a freeze sensor is best made at the local level. The commission did not make any changes to the rules as a result of this comment.

A few commenters stated that rain moisture or shut-off devices should be required on irrigation systems that are repaired as well as those that are replaced.

The commission responds that an irrigator should inform customers of the potential water and cost savings involved in adding sensors to systems that are repaired. Because adding sensors can include laying additional wire from the sensor to a controller, the addition of a rain or moisture shut-off device or other technology could cost the consumer much more than the original requested repair. A requirement to retrofit irrigation systems was not included in the proposal. Local areas may have requirements that would require the installation of a rain or moisture or other shut-off device. The commission did not make any changes to the rule as a result of this comment.

A commenter stated that it should be clarified that water purveyors could require other devices.

The commission responds that the rules are minimum standards and water purveyors may require other technology. The commission did not make any changes to the requirements as a result of this comment.

A commenter stated that excess flow sensors should be required as shut-off sensors for large systems (greater than or equal to one acre).

The commission responds that while there may be a benefit for some systems, an excess flow sensor is not being mandated state wide. The sensors may be mandated locally as necessary to help ensure water conservation goals and objectives are met. The commission did not make any changes to the rules as a result of this comment.

Isolation Valve - Some commenters supported requiring an isolation valve, some supported requiring all irrigation systems to have an isolation valve. Some commenters said that training could replace the requirement and that the requirement could not be enforced. A commenter suggested requiring that the isolation valve have a "lock out" feature. One commenter stated that an isolation valve does not conserve water. One commenter requested a definition of "isolation valve".

The commission responds that local government representatives strongly supported the requirement to have an isolation valve so that water to the residence or commercial building would not be interrupted while turning off the water to a malfunctioning irrigation system. Local areas can require a "lock out" feature on isolation valves. An "isolation valve" is a shut off point for all water in the irrigation system. The isolation valve will allow a system owner to easily turn off water to the irrigation system when leaks are detected. This will conserve water. A requirement to retrofit a system to add an isolation valve was not included in the proposal because it could increase the cost of repairs or maintenance or alteration to the irrigation system. However, local areas may have more stringent requirements. Trained inspectors will be able to observe the isolation valve and

determine compliance with the requirement. The commission agrees that on-the-job training will be needed to respond to the new rules. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that an additional main shutoff valve be required if the system is not on a separately valved meter or if the backflow prevention device does not have a shut off valve. A commenter stated that the requirement should specify whether or not the required isolation valve can be supplied as part of the backflow assembly.

The commission responds that the rule requires only an isolation valve between the water meter and the backflow prevention device so that the water can be turned off to the irrigation system if the backflow prevention device is being repaired or replaced or the irrigation system is malfunctioning. The commission did not make any changes to the rules as a result of this comment.

Depth Coverage of Pipe - A commenter stated that parts of Texas have very rocky or even solid rock a few inches below the existing soil and that mounding dirt over the pipe and wire should be allowed. IA commented that a better definition of "returned to grade" was needed.

The commission responds that the purpose of requiring the fill material to be returned to the original grade was to prevent a safety hazard with fill material that was not level. In the instance described by the comment, mounding the dirt to provide adequate coverage would be sufficient. The contract and as-built drawing should contain information clearly identifying the reason that the dirt would be mounded over the pipe or wire. The irrigator should also consider whether or not

there would be any additional maintenance requirements or recommendations for the irrigation system owner as a result of the mounding. The irrigator should also work with the irrigation system owner to address all safety concerns related to mounding dirt over the pipe or wires. The term "returned to grade" is the highest (pre-installed irrigation system) ground level immediately adjacent to the pipe or wire being covered and should be compacted sufficiently to be at grade at the time the irrigation system is completed. Changes were made to the depth of pipe coverage requirements in §344.62(1)(1) as a result of this comment.

Commenters suggested a definition of "select backfill". A commenter stated that a definition of "compaction" was needed.

The commission responds that the definition of backfill, "free of building debris and rocks larger than two inches" is an industry standard and is taught in basic irrigation training courses and in continuing education courses needed to maintain irrigator licenses. "Compaction" or compressing backfill is taught in basic irrigation courses and continuing education courses that are required to be licensed to perform irrigation work in Texas. The commission did not make any changes to the rules as a result of these comments.

Wiring irrigation systems - A commenter stated that the wording related to electrical wiring splices, should be changed to "which may be exposed".

The commission responds that §344.62(m)(3) has been made to change the phrase to "which may be exposed" in response to the comment. The change to the rule has been made in response to the comment.

Water in piping - A commenter stated that §344.62(n), relating to water in the piping of an irrigation system being non-potable, was too long and provided an alternative layout.

The commission appreciates the comment. Since the language did not change, the commission did not make any changes to the rules.

Completion of irrigation system installation - A commenter stated that the definition of "Completion of Irrigation System" was not needed since the definition was standard business practice.

The commission responds that the definition is needed to provide clarity to §344.63, Completion of Irrigation System Installation. The commission did not make any changes to the rules as a result of this comment.

Maintenance, Alteration, Repair, or Service of an Irrigation System

Several commenters stated that the requirement in §344.64 to add an isolation valve when repair is done at the water meter or backflow device is unenforceable. A commenter stated that the installation of an isolation valve should be limited to instances when the backflow prevention device is replaced. One commenter stated that §344.64 would require a repair for one broken head to result in a y-type strainer,

backflow device, master valve, isolation valve, rain/freeze sensor, select materials, etc. and would result in lost business.

The commission responds that a change has been made to §344.64(d) to clarify that an isolation valve should be installed when a repair requiring excavation is made at the water meter or backflow prevention device, if an isolation valve is not present. The intent of the rule is that when performing any work on the meter or backflow prevention device that requires excavation, an isolation valve should be installed. This would include situations where excavation work is performed at the meter or backflow prevention device during repair or replacement. An isolation valve will allow water to be shut off to an irrigation system while allowing water to go to a residence or building. Being able to turn off water to a malfunctioning irrigation system will conserve water. The rule does not require a y-type strainer, backflow device, isolation valve, master valve, or a rain/freeze sensor if one broken head is repaired. Instances of non-compliance reported or noted during inspections can be verified by review of homeowner or irrigator records. The adopted section, §344.64(d), was revised to state that excavation work at the meter or backflow device will trigger the installation of an isolation valve on an existing system. The commission made a change to the rule as a result of this comment.

A commenter stated that §344.64 should be changed so that an irrigator would not be held responsible for negligence by the irrigation system owner, another commenter stated the requirement does not adequately place responsibility for the work performed.

The commission responds that the irrigator does not violate §344.64 if the owner is negligent. The irrigator is responsible for all work performed under the irrigator's supervision. The commission did not make any made changes to the rule as a result of these comments.

A commenter stated that §344.64(c) should include "solvent used when solvent welding PVC pipes and fittings" because some components do not require primer or cement.

The commission responds that §344.64(c) has been changed to reflect the modifications made to §344.62(i). Changes were made to the rules as a result of this comment.

Reclaimed Water

A commenter questioned the form of Spanish was required on the sign to comply with §344.65(6), Reclaimed Water. Another commenter stated the actual text should be included in the rule.

The commission responds that the actual Spanish language would be "Agua de recuperación - no beber". The commission made changes to §344.65(b) as a result of the comment.

A commenter stated that §344.65 should have two sections - one for reclaimed water and one for gray water. A commenter stated that §344.65 needed to be revised to address retrofitting an existing system. Some commenters suggested adding new definitions for "well water, recycled water, gray water, rain harvesting and reused water".

The commission responds that gray water and retrofitting of irrigation systems to use reclaimed water were not addressed in the proposed rules. Including changes at this point could be considered increasing the scope of the rules which would have a significant impact on the regulated industry and citizens. The Administrative Procedure Act precludes making such changes without adequate public notice and giving parties an opportunity to comment on such issues. The definitions for recycled water, gray water, rain harvesting, and reused water are not needed since they are not used in Chapter 344. The term well water, as used in the irrigation industry, is any water that is located beneath the surface of the ground and is not under the direct influence of surface water. The commission did not make any changes to the rules as a result of this comment.

Advertisement, Contracts, and Warranty

Commenters recommended deleting the requirement that the name, address, and telephone number of the TCEQ be displayed at the structure where irrigation business was conducted. Some commenters stated that if required, the sign should be provided by TCEQ.

The commission responds that the requirement to display commission contact information is required in the current rules (§344.93(d)), but was slightly modified to indicate the sign should be located at the "irrigation business" rather than at the "business". The requirement is for the purpose of directing complaints. To clarify the requirements, §344.70(c) was modified to include the phrase "for the purpose of addressing complaints". HB 4/SB 3 directed the commission to adopt and enforce rules related to landscape irrigation. In order to properly enforce rules, the public must know that the commission regulates irrigation services in Texas. Other businesses that

have signs for directing complaints are physicians' offices, barber, and beauty shops. The commission made changes to the rule as a result of this comment.

A commenter stated that there is no mention of a license number on a trailer in §344.93 but it was mentioned in §344.70. Some commenters stated trailers should be removed from the rules because they are often rented, another commenter stated that the license number should be required for vehicles and trailers used in the installation, maintenance, alteration, repair, service, permitting or connection of an irrigation system to a water supply. A commenter stated that the advertising requirements should be changed to read "irrigator-in-charge" rather than "irrigator". A commenter requested clarification when multiple irrigators worked for one company.

The commission responds that the license number on a trailer containing advertisements of irrigation services is a requirement of the adopted rules that will be effective January 1, 2009. The language in §344.93 has been repealed. The language in §344.70(a) was changed to clarify the services that the requirement applies to. All vehicles used in the performance of irrigation system installation, maintenance, alteration, repair, or service must display the irrigator's license number. A licensed irrigator will desire to use the trailer to advertise services and would want to make the license number available. An unlicensed irrigator will be unable to provide the license number. Companies with multiple irrigators may comply with the requirement in one of two ways: use the license number of one employee in all advertisements, on all vehicles, etc. or may use any or all of the licensed irrigators' number in advertisements or on vehicles. Changes were made to §344.70(a) and (b) as a result of these comments.

A commenter asked if magnetic signs were allowed.

The commission responds that magnetic signs are acceptable. The commission did not make any changes to the rule as a result of this comment.

Some commenters stated that contracts for the installation of irrigation systems should not be required to be in writing as outlined in §344.71.

The commission responds that HB 4/SB 3 required the commission to adopt rules that address the design, installation, and operation of an irrigation system, the conservation of water, and the duties and responsibilities of an irrigator. A written contract is a responsibility of an irrigator because it clarifies the terms and conditions for the design, installation and operation of the irrigation system. The IA's Handbook states that a written contract is a guarantee of professional work and urges the consumer to insist on a written contract, "no matter what the amount". The commission did not make any changes to the rules as a result of this comment.

Some commenters asked how the "pass-through contract" provisions would be enforced against non-irrigation companies

The commission responds that it is a violation of the Chapter 344 rules for anyone other than a licensed irrigator or exempt person to sell, design, consult, maintain, alter, repair, or service an irrigation system. The commission or locality would take appropriate enforcement action against the unlicensed individual installing an irrigation system. In addition, the definition of "pass-

through contract" in §344.1(36) has been changed to provide clarity to the rule. The commission did not make any changes to the rules as a result of this comment.

Some commenters recommended deleting the requirement that the contract must include the dates the warranty is valid.

The commission responds that it is sufficient to tie the warranty to a specific event, such as 365 days after the maintenance checklist is provided to the irrigation system owner or representative or 180 days after the backflow prevention device is tested. The commission did not make any changes to the rules as a result of the comment.

A commenter stated that the pass-through contract provision prohibiting monetary compensation be changed to clearly indicate that only a licensed irrigator can perform irrigation services.

The commission responds that the pass-through contract provision prohibiting monetary compensation has been removed. Chapter 344 states that only a licensed irrigator can perform irrigation services so it would be redundant to add language to the section. The commission made changes to §344.71(c) as a result of these comments.

Some commenters stated that a written warranty should not be provided to new irrigation system owners and that if provided, the warranty should not contain the irrigator's name, license number, business address, confirmation that the owner received a copy of the warranty and notification that irrigation is regulated by the TCEQ. IA supported removing the warranty requirement since some providers will not

provide a warranty due to site conditions or due to other concerns. Some commenters stated that warranty requirements should be optional. Other commenters stated that the commission should require that the owner be advised whether or not there is a warranty. Some commenters stated that a warranty should be provided. Some commenters stated that a warranty period should be defined. Some commenters stated that irrigation system's owner or owner's representative should not have to sign the receipt of the warranty.

The commission responds that the requirement for a warranty for a new installation has been in the rules for several years (see §344.96). The irrigation system owner or operator must know how to contact the irrigator in order to obtain repairs or adjustments to the irrigation system. The commission agrees that the license number of the irrigator is not needed on the warranty since the irrigator's license number is on the seal and the owner should possess several items with the irrigator's license number and has deleted that requirement from §344.72(b). The commission was directed by HB 4/SB 3 to adopt and enforce rules that relate to the design, installation, and operation of the system, water conservation, and the duties and responsibilities of irrigators. It is appropriate that owners or operators of irrigation systems be able to contact the commission if there are complaints or concerns about the irrigation system. The warranty provides the irrigation system owner or operator an assurance that the new system will operate as efficiently as possible, and that if problems are encountered, that the irrigator will make the repair. Timely repairs will help conserve water. In addition, the IA's Handbook states that a good irrigation contractor will offer a one year written warranty on work performed. Commercial grade irrigation system components are generally warranted by the manufacturer for a period of one, three, or five years. An irrigation system will last twenty years or longer. A system that does not perform as efficiently

as possible will use extra water for the life of the irrigation system. It is acceptable to provide the length of time that the warranty is valid if there is an easily determined trigger date such as the date the Maintenance checklist is signed by the irrigator or the date the backflow prevention device is tested. The commission made a changes to §344.72(b) as a result of these comments to remove the requirement to include the license number in some documents.

Some commenters stated that the warranty requirements should be removed and the seal serve as the guarantee. Other commenters stated that the City of El Paso required a bond and license be submitted to the city or for some occupations to the state as part of license registration requirements.

The commission responds that the requirement for a warranty has been in the rules for several years (see §344.96, Warranties). The warranty provides details and duration to the system owner or operator. The seal would not provide this information. The irrigation system owner or operator must know how to contact the irrigator in order to obtain repairs or adjustments to the irrigation system. The commission is not granted authority under Texas Occupations Code, Chapter 1903.053 to require bonds for irrigators as a condition of license. The commission did not make any changes to the rules as a result of these comments.

Some commenters stated that a warranty will not help water conservation.

The commission responds that a system warranty should represent a commitment for extended service after the sale. Prompt repairs and corrections will help conserve water. There may not be one single item that will help conserve water, but it is the combination of various efforts that

include warranties that will accomplish this objective. The commission did not make any changes to the rules as a result of this comment.

IA commented that breaking down materials and labor when a repair is made will require an accounting change to account for changes in sales tax liability and will create a burden to small businesses. Some commenters stated that time and materials should not be required for service, that TCEQ should not dictate billing procedures, and that time and material details should not be provided. A commenter stated that time and material cannot be determined before hand.

The commission responds that any of the parts that were used in the maintenance, alteration, repair, or service of the irrigation system should be clearly identified on the invoice. This may help the irrigation system owner and irrigator with historical parts records and also help the system owner identify replacement parts to ensure the irrigation system is efficiently maintained and operated. If the irrigation system owner knows that a 30-foot spray emission device was installed, the owner will be less likely to replace it with a 20-foot spray emission device. It is possible to use a "lump sum" invoice and still identify the parts that were used in the repair. Changes to §344.72(c) have been made to not require labor to be included in irrigator documents provided to the irrigation system owner. The change includes requiring the parts that are used to be clearly identified in the invoice provided to the irrigation system owner or operator. Changes were made to §344.72(c) as a result of these comments.

Some commenters stated that a warranty should not be required for maintenance, alteration, repair, or service of an irrigation system, some commenters support optional warranties, and other commenters

support requiring a warranty. Other commenters stated that the owner should be advised that there will or will not be a warranty. Some commenters stated that not all equipment warranties pass-through to the consumer and are a trade warranty obligation only to the provider. IA commented that irrigators could provide a clear statement of whether or not a warranty exists and provide the details of the warranty.

The commission responds that it may be difficult to provide a warranty for items such as reprogramming the controller, performing a water audit, completing an operation inspection or other items. The requirement to provide a warranty for maintenance, alteration, repairs, or service to an existing irrigation system has been removed. Changes were made to §344.72(c) as a result of these comments.

Some commenters stated that the commission should have no authority to require warranties and that warranties and business practices should not be adjudicated by the commission.

The commission responds that one of the most common complaints received by the commission relates to warranty work on irrigation systems. The warranty requirement helps conserve water. A system owner that has warranty coverage is more likely to call the irrigator when the irrigation system malfunctions. Small leaks or over watering is more likely to continue if the owner has no system warranty. Providing a warranty is not only good business practice, it can also result in saving water. The warranty requirement was in the previous rules (see §344.96, Warranties.). The legislature passed extensive laws with regard to the landscape irrigation program, but did not make any changes pertaining to that particular rule. The commission did not make any changes to the rules as a result of these comments.

A commenter requested clarification of "remodeling and renovation" related to warranties.

The commission responds that warranties are required for new system installations. However, the commission would encourage an irrigator to provide a warranty on a remodeling or renovation project that would involve significant new parts and redesign of the irrigation system that was a significant financial investment to the irrigation system owner. The commission did not make any changes to the rules as a result of this comment.

Irrigator Advisory Council

IA stated that excluding individuals involved in leadership in local and state irrigation associations limits the pool of irrigators and could explain some of the resistance to the rules. Some commenters stated that the word "practicing" should be added to §344.80(b). Another commenter stated that "and active in the business" should be added. Some commenters stated that "or consanguinity" should be removed from §344.80(d). A commenter asked for clarification of "officer of a trade association" and asked if a board of trustees' member is eligible for membership.

The commission responds the rule has been changed to be consistent with 30 TAC Chapter 5. The change will be effective January 1, 2009. A board trustee is considered to have some control of decisions made by an association and is considered to be an officer. The rule does not distinguish between statewide and local associations. The term "practicing" was not included in the rule because the language in the Texas Occupations Code, §1903.151(a)(1) does not require "practicing" irrigators. The commission made changes to §344.80 as a result of these comments.

A commenter stated that some council members have not acted fairly or ethically, controlled the flow of information, and will reap financial gain upon adoption of the rules.

The commission responds that there was an August 10, 2007 meeting held in Austin for communicating concerns or thoughts for the rules revision. The council accepted written comments prior to, and after the meeting. The commenters did not provide information to support the allegation that some members of the council will reap financial gain. Volunteer members of the Council canvassed the state for input into the rules process. During a multi-week period two council members visited over ten cities around the state to obtain local input from local associations and irrigators. The council members donated their business and personal time to conduct this outreach effort. The commission did not make any changes to the rules as a result of these comments.

No Authority

A commenter stated that there should be incentives for conserving water and discounts for utilizing devices such as smart controllers, master valves, rain sensors, low-volume and xeriscape designs or water restrictions. These measures would correctly place the responsibility of conserving water on the user since the public is responsible for over watering, watering out of season, and out of ignorance because water costs are so low. A commenter stated that requiring a person to sign a form stating that they are aware that a licensed irrigator must install the system and if an unlicensed individual installs the irrigation the system that the owner and installer can be fined a minimum of \$500.00 and the installer more on each following illegal installation. IA stated that an additional means to protect the public would be to establish an insurance requirement that would define necessary coverage and limits. IA commented that TCEQ should

be added as a certificate holder to each irrigator's insurance policy to facilitate notification of changes or voids in required coverage. IA further stated that if a void, lapse, or a deficiency in coverage happened, the irrigator's license would be revoked. A commenter stated that the majority of defective irrigation systems were designed and installed by unlicensed individuals, and that the commission should restrict the sale of PVC piping in sections longer than four feet to licensed irrigators only, because it would stop illegal installations and asked if the commenter could get credit or a reward for the idea. A commenter stated that new neighborhoods should be required to install reclaimed, gray water and untreated water systems with the sewer lines and that treated water should not be used to water landscapes. A commenter suggested using home owner associations to collect fees to be used to inspect, repair, or replace sprinklers to meet new standards.

The commission appreciates the suggestions but does not have the authority to mandate or implement the suggestions. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that homeowners should not be allowed to install their own irrigation system and stated that homeowners could not perform electrical, plumbing, or even air conditioning without a license.

The commission responds that homeowners that install an irrigation system on their own properties are exempt from the licensing requirements of Texas Occupations Code, §1903.002 but are not exempt from the requirements of Chapter 344, Landscape Irrigation. The commission did not make any changes to the rules as a result of these comments.

Local Authority

An individual commented that the "minimum precipitation rates", including the precipitation rate zone map, be included because some emission devices, installed with low nozzle flow rates, will meet the head to head coverage requirements but will not be able to place enough water on plant material. There are nozzle selections available from manufacturers that would allow someone to create an inefficient system. An individual stated that the minimum standards for precipitation rates should not be removed because they provide a historical benchmark. A commenter stated that irrigated sites that are larger than five acres should be audited once every three years to see if the systems are still effective and efficient in their water use. A commenter stated that the commission should require an annual inspection for irrigation systems similar to the inspection for motor vehicles. A commenter stated that meter readers could verify that inspections had been performed. A commenter stated that more stringent restrictions are needed on new irrigation systems in residential neighborhoods and that low volume/drip systems should be mandatory for flowerbeds in these situations. A commenter stated that major repairs of irrigation systems should necessitate compliance with minimum design and installation requirements. A commenter stated that inefficient water waste of existing systems should be addressed in the rules.

The commission responds that the adopted rules provide minimum standards for irrigation systems statewide and local governmental entities may adopt more stringent requirements. The commission did not make any changes to the rules as a result of these comments.

Administrative Procedure Act

An individual commented that a common source of leaks on irrigation systems is pipe breakage at the base of the sprinkler head and that mandating flexible pipe or swing joint risers below a sprinkler head in

an area subject to vehicular traffic or pedestrian activity would help prevent leaks. A commenter stated that there should be rules for irrigation system operators and that in order to enhance conservation the commission should prohibit the operation of irrigation systems with broken components. An allowance for testing and repair was suggested. A commenter stated that the conversion to irrigation technician should be reconsidered and an assistantship be implemented that would provide more knowledgeable people at the job site. Another commenter recommended implementing an apprentice/journeyman program.

The commission appreciates the suggestions; however, the recommendations are outside the scope of the proposed rulemaking and including these changes at this point could be considered increasing the scope of the rules and would add costs to the irrigation system or to the irrigation system order. The Administrative Procedure Act requires that the public be given the opportunity to comment on rules that might impact them. The public was not notified in the February 1, 2008, *Texas Register* notice that the commission was considering the suggested changes. The public might have commented on any of these suggestions. The commission did not make any changes to the rules as a result of these comments.

Costs

A commenter stated that the increased cost of \$350 to \$580 seemed to be an arbitrary 15% increase. A commenter asked if the cost covered: maintaining records; purchasing permits; buying stickers; design software; training; increased labor costs; etc. A commenter stated that the costs would just about cover the drawing. A commenter speculated that the cost would be greater if the rules are enforced. A commenter stated that fewer rules were needed and that items that add costs or are unenforceable will hurt honest

business owners and will force consumers to seek unlicensed or non-complying contractors and may ultimately discourage compliance.

The commission responds that the costs were calculated by assuming two scenarios – a low and high range. The costs for the "low range" are isolation valve and box - \$14, a rain or moisture sensor - \$28, a y-type strainer - \$27, sticker - \$1, maintenance checklist - \$50, irrigation plan \$210, and miscellaneous costs \$20. The costs for the "high range" are isolation valve and box - \$20, a rain or moisture sensor - \$50, a y-type strainer - \$50, sticker - \$2, maintenance checklist - \$85, irrigation plan \$345, and miscellaneous costs \$28. There will be some up-front costs associated with purchasing stickers; the cost referenced is a cost per job. Many irrigators already perform most of the requirements, so the cost should not increase significantly for items such as colored primer solvent, backflow devices, etc. Market forces will drive the price that is being charged for irrigation systems. If there is a demand for irrigation systems, there will be legitimate irrigators who will comply with the rules. The requirement to maintain irrigation system records is consistent with the requirement for other business records. The commission did not make any changes to the rules as a result of this comment.

Some commenters stated that a customer will be charged \$125 to \$150 to perform the maintenance checklist items.

The commission responds that the irrigator has a business cost associated with the checklist and walk through. Homeowner education and guidance does have a cost. However, the consumer would save money on the cost of water used in irrigation and that would offset any charges that some

irrigators might choose to charge customers. Lower Colorado River Authority provided comments that by operating an irrigation system twice a week, the summer outdoor water use would be decreased by 25% to 50% and would reduce peak demand on water treatment facilities. Those cost savings would be passed on to customers in the form of lower water bills. The IA's Handbook stated that a good contractor will provide full instructions on how to care for the irrigation system and how to use the mechanical components of the irrigation system. The Handbook further stated that "the contractor should know how to manage water and install an irrigation system that will provide the desired look while minimizing your use of water". Many irrigators are already providing these services to their customers. Costs can vary widely across the state depending on factors that affect the local economy. The commission did not make any changes to the rule as a result of these comments.

Some commenters stated that the additional costs were low and that the commission did not specify the water that would be saved.

The commission responds that the commenters did not provide any specific information regarding which costs were low or any alternative findings about cost. The preamble stated that if it was assumed that 25% of water used for irrigation was wasted, a homeowner, on average, could save an estimated \$194 per year when an irrigation system that complies with the rules is installed. Over a five year period the estimated savings could be as much as \$970. The annual water savings was assumed to be 38,000 gallons per system. Another commenter provided detailed drawings and material takeoffs with pricing. The commenter's finding is that the additional materials required as a result of the rule would cost an irrigator \$166.47 and require less than one hour of additional

labor. If the system conserved 25% more water and watered twice a week for ten minutes, the system would save \$20 a month. The commission did not make any changes to the comment based on these comments.

A commenter stated that based on initial startup a permit would cost \$1,000 because employees would have to be hired, trained, and initiate a permit processing system for irrigation. A commenter stated that the cost that had been proposed by the commission was ridiculous and the cost to the municipality for a landscape irrigation program would be high.

The commission responds that the commenter did not provide any additional information to support the claims that the cost to a municipality would be high. When the cities of El Paso and San Antonio adopted more stringent irrigation requirements several years ago, costs for irrigation systems did not increase significantly and many irrigators have installed irrigation systems that meet these requirements for years. El Paso's permitting program cost for a commercial system ranges from \$80 to \$120. San Antonio has proposed a new fee structure that would require an \$85 annual registration fee for irrigation contractors, a \$50 residential permit fee, a \$100 commercial permit fee, \$100 for a commercial irrigation plan review, with an allowance for charging for additional reviews, and a \$50 inspection fee.

El Paso has been inspecting commercial irrigation systems for several years and has simplified the process so that the inspector has an approved irrigation plan and has knowledge of the irrigator's previous performance history. The inspection is based on a local ordinance and the International Plumbing Code 2003 (2008 will be adopted in the future).

The inspector inspects water spraying on impervious surfaces, slopes or small areas. The irrigator may be present during the inspection or if the controller is accessible, the system is turned on and inspected for overspray and for coverage, verifying that the installation is according to the approved plan.

The inspector inspects the master, isolation, or zone valve. The valve locations are shown on the approved plan and are located in valve boxes. The inspector can verify several items at one location - the depth of the incoming pipe, primer, wiring, waterproof connectors, and any additional equipment such as regulators or filters.

The inspector locates and inspects the backflow device for proper installation and use.

The inspector checks that the controller and verifies that the controller is powered and programmed.

The inspector verifies that sleeves are installed and is able to verify that primer is used in that location.

The inspector reviews the approved plan and verifies that the installation has been made in accordance with the city plan.

The inspector has the authority to ask at any time to unearth a specific area or the complete system if noncompliance is expected. El Paso has found improper piping, deleterious backfill, no primer or solvent on pipes, and improper wiring when irrigation systems were uncovered. El Paso has the ability to flag an irrigator based on past occurrences or typical code violations, such as failure to close a permit or failure to call for an inspection. Inspections often occur when the inspector is in the area which allows the inspector to view the installation as it progresses. Irrigators sometimes ask for in-progress inspections. El Paso's permitting system allows the inspector to monitor permits in various stages such as issued, inspected, or final, and plan inspections accordingly. The rules are written so that municipalities and water districts have the ability to implement the landscape irrigation program in an efficient manner, such as phasing-in requirements or conducting more thorough reviews or inspections on higher risk projects. Municipalities and water districts may choose to contract elements of the program to avoid an initial up-front cost. A commercial irrigation system permit in El Paso usually costs \$80 to \$120. The cost is calculated using a base rate and then a per item or per measurement fee. The commenter did not provide any information to support the claim that a permit would cost \$1,000. The commission did not make any changes to the rules based on these comments.

A commenter stated that the fiscal note stated that a controller could be replaced for \$50 to \$100 and stated a cost savings of \$30 to \$50 every time the controller is interrupted, then it should be required because it would conserve water.

The commission responds that §344.62(i) requires the installation of sensors or other technology designated to inhibit or interrupt irrigation system operation during periods of moisture or rainfall

when replacing an existing automatic controller. The example in the fiscal note is that of a very large commercial irrigation system that would have automatic controllers and inhibiting devices that could save the entity \$30 to \$50 per interrupted water schedule. These savings are not representative of a small residential system. The commission did not make any changes to the rules as a result of this comment.

Enforcement

Numerous commenters stated that enforcement of irrigation rules should be a priority. Commenters stated that the current rules should be enforced. A commenter stated that every irrigator wanted a true enforcement program. A commenter requested an analysis of state rules to identify if there is an alternate place in the Texas Administrative Code where rules can be developed that will provide meaningful consequences for individuals practicing without a license. Numerous commenters stated the commission should respond to complaints more timely and with more serious consequences.

The commission responds that these comments are beyond the scope of the Chapter 344 rulemaking. The commission's enforcement's actions are governed by 30 TAC Chapter 70 and the commission's Enforcement Initiation Criteria, and the Penalty Policy. There is no federal standard for landscape irrigation programs. The commission has and continues to pursue enforcement actions against licensed and unlicensed individuals that do not follow landscape irrigation rules. Many irrigation system owners have been reluctant to provide documentation that would prove that an unlicensed person installed their irrigation system. Most of the enforcement actions taken by the state are administrative in nature and in some instances include a minimum penalty. Cities and water districts that adopt landscape irrigation programs will greatly enhance the ability to

pursue rules and violations. The commission did not make any changes to the rules as a result of these comments.

Other comments

A commenter asked TCEQ to "fully" clarify all changes to the rules in an effort to eliminate any loopholes in the system.

The commission responds that the purpose of the preamble is to fully clarify all changes. The commission did not make any changes to the rules as a result of these comments.

Several commenters stated the rules lacked verbiage to be enforceable and that rules should be easy to verify and fairly enforced.

The commission responds the adopted rules improve on the existing rules and provide better clarity and improves enforcement. The rules clearly state the minimum performance expectations for landscape irrigation systems in Texas and clearly define the duties and responsibilities of irrigators, installers, irrigation technicians, and irrigation inspectors. Trained inspectors will be able to take appropriate actions to make sure irrigation systems are designed and installed in a manner that will conserve water. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that the Chapter 344 rules revisions had little to do with water conservation.

The commission responds that the rules adopted comply with the requirements of HB 4/ SB 3 that are intended to increase water conservation. The rules address the design, installation, and operation of irrigation systems, water conservation, the duties and responsibilities of irrigators. The rules also address the requirement that municipalities with a population of 20,000 must adopt a landscape irrigation program and provide a new license type, irrigation inspector. The rules as adopted and their implementation will conserve water. The commission did not make any changes to the rules as a result of this comment.

Several commenters stated that illegal installers will be able to charge homeowners less for an irrigation system and that small firms could not compete with unlicensed firms or individuals who would not follow the rules. Other commenters stated that there will be fewer legitimate irrigators. Some commenters stated that the rules provide a disadvantage to small businesses. Some commenters stated that the cost of irrigation systems will increase. Some commenters stated that the small business and micro-business assessment contained in the preamble underestimated the impact on small and micro businesses.

The commission responds that San Antonio has adopted many of the requirements that have been adopted in Chapter 344, and has found that the number of illegal and poor installations has decreased and that as a result, business for good installations has increased. In San Antonio the price that "good" irrigators charged did not change significantly but the price of marginal irrigation systems did increase. All businesses that perform irrigation work will have to comply with the adopted rules. The commenters did not provide any additional cost information to support the claims. The commission did not make any changes to the rules as a result of these comments.

IA commented that efficiency should be developed on an individual site basis to keep enforcement practical.

The commission responds that governmental entities that implement landscape irrigation programs may develop criteria for water conservation. Local entities have the authority to enforce rules or ordinances that address excess water usage. Implementing a system on a statewide basis that includes many areas that are not required to implement and enforce landscape irrigation programs would be difficult to enforce. The commission did not make any changes to the rules as a result of this comment.

Some commenters stated that irrigation systems could be turned off without affecting the health of the public because inadequate systems could be turned off.

The commission responds that in many municipalities and water districts, inadequate irrigation systems are not being turned off because turning off the water to the irrigation system also turns off the water to the residence or commercial building. The inclusion of an isolation valve on new irrigation systems will allow owners or government officials to turn off malfunctioning or inadequate irrigation systems. The commission did not make any changes to the rules as a result of this comment.

Some commenters stated that the irrigator could be brought to account for an inadequate installation and civil law can be used to recover damages and/or require changes.

The commission responds that HB 4/SB 3 require the commission to adopt rules that address the design, installation, and operation of irrigation systems; water conservation; and the duties and responsibilities of licensed irrigators. The adopted rules address those requirements. The commission did not make any changes to the rule as a result of these comments.

A commenter stated that the commission should be held accountable that the rules have been thoroughly reviewed and that licensed irrigators will be held accountable for complying with the rules.

The commission responds that the rules have been thoroughly reviewed and are enforceable. Local governmental entities and the state will hold licensed irrigators accountable for following state and local rules or ordinances. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that TCEQ should prepare an example form for the information required in the rules change. A commenter asked that a hypothetical example, or mock contract, be provided to show the contractual requirements in §344.71(c).

The commission responds that TCEQ is planning to update the Landscape Irrigation webpage with a Frequently Asked Questions section for use by irrigators, homeowners, and exempt businesses. A Regulatory Guidance Document is also being planned that would provide example forms and language for use by irrigators. The commission did not make any changes to the rules as a result of these comments.

Several commenters questioned asked how much water would be saved by the rules; specifically, how much will be saved by the as-built plan, the maintenance checklist, seasonally adjusted ET schedule, and the three minute flow test.

The commission responds that an estimated water savings for the as built plan, the maintenance checklist, the seasonally adjusted ET schedule, and the three-minute flow test has not been calculated. The zone flow measurement test has been modified in §344.1(45) as a result of this comment. The requirements relate to operating a more efficient irrigation system, and any savings will be based on the irrigator or irrigation technician providing information to the irrigation system owner or owner's representative during the walk through. The information will explain the irrigation system operation and maintenance and provide details to adjust the controller to reflect the seasonal watering requirements in Texas. Both can lead to more efficient system operation. The as-built plan will allow repairs to be made more quickly, allow the homeowner to replace emission devices or other parts with the same type of component, and thus help insure the integrity of the irrigation system. These items will ultimately operate to conserve water. The commission made changes to §344.1(45) has been changed in response to the comment.

A commenter stated that the rules do not promote water conservation but they would result in a defined, uniform method of irrigation installation in Texas.

The commission responds that overall the rules do promote water conservation. The various design and installation requirements coupled with improved contractual and warranty requirements will encourage irrigation system owners to have repairs made in a more timely fashion. The information

provided to irrigation system owners will help promote efficient irrigation system operation. The commission did not make any changes to the rules as a result of this comment.

Some commenters stated the state was micro managing.

The commission responds that HB 4/SB 3 require the commission to adopt rules that address the design, installation, and operation of irrigation systems, water conservation, and the duties and responsibilities of licensed irrigators. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that some commercial property owners asked to have irrigation systems installed without proper design and backflow devices which does not meet state mandates.

The commission responds that the current rules have requirements for a design and backflow device. The new rules have given more specificity to the requirements of the design and are consistent with the Public Drinking Water rules. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that many of the rules and regulations are restrictions of free trade and commerce as governed by the Uniform Commercial Code.

These rules are based on clearly articulated and expressed state legislative policy to regulate landscape irrigation in the state of Texas. HB 4/SB 3 directed the commission to adopt rules that

govern: 1) the connection of an irrigation system to any water supply; 2) the design, installation, and operation of irrigation systems; 3) water conservation; and 4) the duties and responsibilities of irrigators. HB 1656 adds a new landscape irrigation license classification, irrigation inspector, and directs municipalities with populations of 20,000 or more to adopt ordinances that require irrigation inspectors be licensed by the commission and that irrigators obtain a permit before installing an irrigation system. Municipalities must adopt standards and specifications for designing, installing, and operating irrigation systems and include any rules adopted by the agency that are related to landscape irrigation. As required by HB 4 §19 and SB 3, the commission must adopt standards no later than June 1, 2008, with an effective date of January 1, 2009. The landscape irrigation program is actively monitored and supervised by the state through the TCEQ's Landscape Irrigation program. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that the proposed changes needed more input from irrigators.

The commission responds that there was a significant notice of the proposed rule and a 30-day comment period allows for public comment on rules. The commission published the proposed rules on the agency's web site in December 2007. The proposed rules were published in the *Texas Register* on February 1, 2008. The Texas Turf and Irrigation Association (TTIA) home page published a notice about the proposal. TTIA also sent post cards to all members notifying them of the proposed rules, public hearing date, and comment period. The IA sent an e-mail to all Texas members related to the rules. Austin Lawn and Sprinkler Association sent an e-mail to 59 people informing them of the public hearing on the Chapter 344 rules. A public hearing was held on February 26, 2008. All of

these efforts were directed to encourage input from irrigators and other interested parties. In addition, during a multi-week period two Irrigator Advisory Council members visited over ten cities around the state to obtain local input from local associations and irrigators. A stakeholders meeting was held in Austin on August 10, 2007. Written comments were accepted prior to and after the meeting. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that the rules go on and on and try to keep irrigators busy with paperwork and that the rules should be more user friendly. A commenter stated that the commission continued inept governance over the irrigation industry and that the commission thinks that more rules and oversight is the answer to everything. Another commenter stated that business owners have to multi-task and that should be considered in adopting any rules. Another commenter stated that the rules would waste man hours and create unneeded paperwork and would force some irrigators out of business. A commenter stated that changes should be made so that it would not negatively impact 90% of the contractors. A commenter stated that some of the rules proposed were wrong.

The commission responds that the commenters did not provide information to support the general claims. The commission was directed by HB 4/SB 3 to adopt rules that address the design, installation and operation of irrigation systems, water conservation, and the duties and responsibilities of irrigators. The commission created a new irrigation technician license with expanded responsibilities that will greatly assist the irrigator in complying with these rules. San Antonio implemented a program that includes many of the requirements that have been adopted in Chapter 344. San Antonio found that the number of illegal and poor installations has decreased. The adopted rules balance the needs of the irrigator to multi-task and earn money, with the need to

implement business practices to support water conservation, to provide information that will educate irrigation system owners about the importance of water conservation when using their irrigation system and maintain business records. The commission did not make any changes to the rules as a result of these comments.

A commenter questioned why the Backflow Prevention Assembly Tester (BPAT) licensees were not required to have rubber stamps.

The commission responds that the BPAT requirements were not considered as part of the rulemaking for landscape irrigation. The suggestion was forwarded to the appropriate staff for consideration. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that most of the rules were not new but were already on the books.

The commission agrees. The rules were reorganized, so rules that were already on the books had to be repealed and the existing (reorganized) and new (added) rules proposed for public comment. The adopted rules are a mix of old and new rules. The commission did not make any changes to the rules as a result of this comment.

Some commenters stated that regulations do not conserve water.

The commission responds that no single element of the rule, by itself, accomplishes water conservation, but it is the combination of various elements of the adopted rules that will accomplish

this objective. The emphasis on proper design, installation, application of components, warranties, new irrigation licenses, homeowner education, etc. all contribute toward achieving the goal of HB 4/SB 3 which is ultimately to conserve water for current and future generations. The commission did not make any changes to the rules as a result of this comment.

A commenter stated that IA's 1990 Water Conservation Policy emphasized economic incentives and that SB 3 clearly defines BMPs as voluntary.

The commission responds that several sources of information were considered in the rules including, the IA's BMPs (2005) related to design, pressure regulation, technology, installation and water conservation; IA's consumer information (www.irrigation.org/Rsrcs); and IA's materials used for design training. Ordinances, rules and irrigation system information from Texas, Colorado, California, Minnesota, Oregon and Florida were reviewed. The EPA's WaterSense program was considered. Basic irrigation textbooks used in Texas were consulted. The references to voluntary BMPs in HB 4/SB 3 are not directly related to irrigation, but to the Water Resource Council's duties and responsibilities in reviewing new technology related to water conservation. HB 4/SB 3 directed the commission to adopt rules that irrigation systems be designed, installed, maintained, repaired, and serviced in a manner that would promote water conservation. HB 4/SB 3 also directed the commission to adopt rules related to an irrigator's duties and responsibilities. The commission did not make any changes to the rules as a result of these comments.

A commenter supported the repeal of Chapter 344 in its entirety with replacement of new language but did not provide any proposed changes to Subchapter B, Standard of Conduct and Subchapter H, Irrigator

Advisory Council. A commenter supported retaining, not repealing, Subchapter D (§§344.70 - 344.73, 344.75 and 344.77).

The commission responds that HB 1656 requires municipalities of 20,000 or more to adopt landscape irrigation programs thus the language in §344.70 and §344.71 is no longer applicable. HB 4/SB 3 directed the commission to adopt rules related to water conservation, thus the repeal of §344.72, which only generally addressed water conservation. The adopted rules provide specific requirements to promote water conservation. Section 344.73 addressed backflow prevention methods and §344.75 addressed cross-connections. The adopted rules provide additional and updated information concerning backflow and cross connections. Section 344.77 contained outdated minimum design and installation standards. The adopted rule addresses new technology and standards. The commission did not make changes to the rules based on these comments.

Some commenters stated that irrigation was not as important as plumbing but the irrigator and technician seem to be equated to a Master and Journeyman plumber and that the requirement to be on-site indicates an importance of the irrigator or technician that should not be required since irrigation does not rise to the importance of potable water plumbing.

The commission responds that HB 4, SB 3, and HB 1656 directed the commission to address the standards for the design, installation, and operation of irrigation systems, water conservation, and the duties and responsibilities of irrigators. The adopted rules address standards for design, installation, and operation of irrigation systems and provide more efficient irrigation systems. In addition to water conservation, an irrigation system could subject the water supply to potential

contamination if proper controls are not installed. Since irrigation systems can waste water and there is potential contamination of the public water supply from an irrigation system, it is important to have either a trained and licensed irrigator or irrigation technician on-site at all times. There were no changes to the rules as a result of these comments.

Some commenters stated that builders and large contractors do not always abide by any rules and that builders should be educated. Other commenters stated that the commission should undertake an education effort. Some commenters stated that many people think it is acceptable to hire their lawn maintenance company to repair their sprinkler system. Other commenters stated that site designers and landscape architects should be held responsible for the design of landscape irrigation systems.

The commission responds that upon adoption of the rules, the commission will initiate an education program that will target irrigation system owners, irrigators, home builders, and exempt businesses to stress the importance of following all landscape irrigation program rules. The commission will update the website to include a Frequently Asked Questions section for irrigation system owners, irrigators and exempt businesses. The commission will develop brochures to communicate the importance of landscape irrigation. The commission will inform exempt business organizations of the adopted rules and ask their assistance in informing members that the design, installation and operation standards apply to everyone. The commission did not make any changes to the rules as a result of these comments.

A commenter stated that the rules should set minimum standards not methods, process, or equipment because those rules would be flawed.

The commission responds that the adopted rules set minimum standards for the performance of irrigation activities. The rules were adopted in compliance with HB 4/SB 3. The adopted rules build upon rules that have been in place for a number of years but have been updated to reflect new technology. The commission did not make any changes to the rules as a result of this statement.

IA commented that the increased cost of the irrigation system relate to process and administrative expense with no established metrics to measure the effectiveness of the mandates. IA stated that the citizens of Texas should receive tangible data as a reassurance that the added cost results in increased landscape irrigation efficiency. IA suggested a shift in focus on outcome.

The commission responds that the citizens of Texas will receive an enhanced guarantee of available water resources during their lifetime. If an efficient irrigation system can reduce water consumption by 25% over the 20 year usable lifespan, the system can potentially save over 0.75 million gallons of water. The increased costs are related to the requirement to install an isolation valve and box, a rain/moisture sensor or other technology, a y-type strainer, stickers, providing a maintenance checklist, putting the design on paper and other miscellaneous costs. A shift in focus to outcome measurements would, in fact, increase the cost of the irrigation system to the irrigation system owner since additional measurement equipment (such as a water meter or flow meter) would need to be installed. Governmental entities would be responsible for gathering, analyzing and providing the data to irrigation system owners which would be an additional cost. The commission did not make any changes to the rules as a result of these comments.

SUBCHAPTER A: GENERAL PROVISIONS

§344.1, §344.4

STATUTORY AUTHORITY

These repeals are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; TWC, §5.105, concerning General Policy; and TWC, §5.107, concerning Advisory Committees, Work Groups, and Task Forces. These repeals are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These repeals are also adopted under Texas Occupations Code (TOC), §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; TOC, §1903.151, concerning Council Membership; TOC, §1903.152, concerning Eligibility of Public Members; TOC, §1903.155, concerning Presiding Officer; TOC, §1903.157, concerning Meetings; TOC, §1903.158, concerning Per Diem Reimbursement; TOC, §1903.159, concerning Council Duties; and TOC, §1903.251, concerning License Required. Finally, these repeals are also adopted under Texas Health and Safety Code (THSC), §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted repeals implement TWC, §§5.013, 5.102, 5.103, 5.105, 5.107, and 37.001-37.015; TOC, §§1903.001, 1903.002, 1903.053, 1903.151, 1903.152, 1903.155, 1903.157, 1903.158, 1903.159, and 1903.251; THSC, §341.033 and §341.034.

§344.1. Definitions.

§344.4. License Required.

SUBCHAPTER A: DEFINITIONS

§344.1

STATUTORY AUTHORITY

This new section is adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; TWC, §5.105, concerning General Policy; and TWC, §5.107, concerning Advisory Committees, Work Groups, and Task Forces. This new section is also adopted under TWC, §§37.001-37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. This new section is also adopted under TWC, §49.238, concerning Irrigation Systems. This new section is also adopted under Local Government Code, §401.006, concerning Irrigation Systems. This new section is also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; TOC, §1903.151 concerning Council Membership; TOC, §1903.152, concerning Eligibility of Public Members; TOC, §1903.155, concerning Presiding Officer; TOC, §1903.157, concerning Meetings; TOC, §1903.158 concerning Per Diem Reimbursement; TOC, §1903.159, concerning Council Duties; and TOC, §1903.251, concerning License Required. This new section is also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

This adopted new section implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.107, 37.001 - 37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, 1903.151, 1903.152, 1903.155, 1903.157, 1903.158, 1903.159, and 1903.251; THSC, §341.033 and §341.034.

§344.1. Definitions.

The following words and terms, when used in this chapter, 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 nonpotable 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 emission devices, 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.

(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 manufacturer's 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 this title (relating to Occupational Licenses and Registrations).

(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 this title (relating to Occupational Licenses and Registrations).

(19) **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.

(20) **Irrigation services**--Selling, designing, installing, maintaining, altering, repairing, servicing, permitting, providing consulting services regarding, or connecting an irrigation system to a water supply.

(21) **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.

(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, 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 this title (relating to Occupational Licenses and Registrations).

(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 sand, loam, clay, or combination) or for hydrological control.

(24) **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 this title.

(25) **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.

(26) **Landscape irrigation**--The science of applying the necessary amount of water to promote or sustain healthy growth of plant material or turf.

(27) **License**--An occupational license that is issued by the commission under Chapter 30 of this title to an individual that authorizes the individual to engage in an activity that is covered by this chapter.

(28) **Mainline**--A pipe within an irrigation system that delivers water from the water source to the individual zone valves.

(29) **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.

(30) **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.

(31) **Master valve**--A remote control valve located after the backflow prevention device that controls the flow of water to the irrigation system mainline.

(32) **Matched precipitation rate**--The condition in which all sprinkler heads within an irrigation zone apply water at the same rate.

(33) **New installation**--An irrigation system installed at a location where one did not previously exist .

(34) **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.

(35) **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.

(36) **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.

(37) **Potable water**--Water that is suitable for human consumption.

(38) **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.

(39) **Reclaimed water**--Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.

(40) **Records of landscape irrigation activities**--The , irrigation plans, contracts, warranty information, invoices, copies of permits, and other documents that relate to the installation, maintenance, alteration, repair, or service of a landscape irrigation system.

(41) **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.

(42) **Static water pressure**--The pressure of water when it is not moving.

(43) **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.

(44) **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.

(45) **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.

(46) **Zone valve**--An automatic valve that controls a single zone of a landscape irrigation system.

**SUBCHAPTER B: GENERAL PROVISIONS AFFECTING
THE IRRIGATOR ADVISORY COUNCIL**

§344.10

STATUTORY AUTHORITY

This repeal is adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; TWC, §5.105, concerning General Policy; and TWC, §5.107, concerning Advisory Committees, Work Groups, and Task Forces. This repeal is also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. This repeal is also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; TOC, §1903.151, concerning Council Membership; TOC, §1903.152, concerning Eligibility of Public Members; TOC, §1903.155, concerning Presiding Officer; TOC, §1903.157, concerning Meetings; TOC, §1903.158, concerning Per Diem Reimbursement; TOC, §1903.159, concerning Council Duties; and TOC, §1903.251, concerning License Required. Finally, this repeal is also adopted under THSC, §341.033, concerning Protection of Public Water Supplies and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

The adopted repeal implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.107, and 37.001 - 37.015;

TOC, §§1903.001, 1903.002, 1903.053, 1903.151, 1903.152, 1903.155, 1903.157, 1903.158, 1903.159,
and 1903.251; THSC, §341.033 and §341.034.

§344.10. Irrigator Advisory Council.

**SUBCHAPTER B: STANDARDS OF CONDUCT FOR
IRRIGATORS, INSTALLERS, IRRIGATION TECHNICIANS, AND IRRIGATION
INSPECTORS, AND LOCAL REQUIREMENTS**

§§344.20 - 344.24

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These new sections are also adopted under TWC, §49.238, concerning Irrigation Systems. These new sections are also adopted under Local Government Code, §401.006, concerning Irrigation Systems. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 37.001 - 37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; THSC, §341.033 and §341.034.

§344.20. Purpose of Standards.

(a) The correct practice of irrigation as a science and profession is essential for the protection and conservation of the water resources of the state and should be conducted by individuals who are held to the highest ethical standards. The legislature has vested the commission with the authority and duty to establish and enforce standards of professional conduct and ethics for practitioners in the irrigation industry.

(b) Every applicant for an irrigator, installer, irrigation technician, or irrigation inspector license must become fully informed of the obligations and responsibilities inherent in the practice of irrigation as outlined by these standards of conduct. Each licensed irrigator, installer, irrigation technician, or irrigation inspector is deemed to have notice of these standards of conduct and is required to abide by the standards.

§344.21. Intent.

(a) These standards of conduct are established to prescribe responsibility on the part of an irrigator, an installer, an irrigation technician, an irrigation inspector, and a qualifying exempt business owner to aid in governing the irrigation industry.

(b) The commission will determine what actions constitute violations of the standards in accordance with Chapter 70 of this title (relating to Enforcement) and Texas Water Code, Chapter 7 and institute appropriate disciplinary action, which may lead to monetary penalties or the suspension or revocation of a license in accordance with the applicable state statutes.

§344.22. Proficiency in the Field of Irrigation; Representation of Qualifications.

(a) All irrigators, installers, irrigation technicians, and inspectors shall be knowledgeable of the current industry standards regarding selling, designing, providing consulting services, installing, maintaining, altering, repairing, or servicing irrigation systems, including the connection of such a system to any source of water and water conservation. All irrigators, installers, irrigation technicians, and inspectors shall conform to the current adopted version of these rules and any local rules that do not conflict with these rules, or that are more stringent than these rules, when performing these activities.

(b) All irrigators, installers, irrigation technicians, irrigation inspectors, and exempt business owners shall accurately and truthfully represent to prospective clients their qualifications to perform the services requested and shall not perform services for which they are not qualified by experience, knowledge, or license in the technical field involved.

(c) All irrigators, installers, irrigation technicians, and inspectors shall be knowledgeable of local requirements related to landscape irrigation systems.

§344.23. Irrigation Practice.

False, misleading, or deceptive practices by an irrigator, installer, irrigation technician, or irrigation inspector relating to bidding, advertising, selling, installation, maintenance, alteration, repair, servicing, or inspection of irrigation systems are prohibited.

§344.24. Local Regulation and Inspection.

(a) Where any city, town, county, special purpose district, other political subdivision of the state, or public water supplier requires licensed irrigators, installers, irrigation technicians, or irrigation inspectors to comply with reasonable inspection requirements, ordinances, or regulations designed to protect the public water supply, any of which relates to work performed or to be performed within such political subdivision's territory the licensed irrigator, installer, irrigation technician, or irrigation inspector must comply with such requirements, ordinances, and regulations.

(b) Any city, town, county, other political subdivision of the state, or public water supplier that is not required to adopt rules or ordinances regulating landscape irrigation may adopt a landscape irrigation program by ordinance or rule and may be responsible for inspection of connections to its public water supply system up to and including the backflow prevention device.

(c) Municipalities with a population of 20,000 or more and a water district that chooses to implement a landscape irrigation program must verify that the irrigator that designs and installs an irrigation system holds a valid irrigator's license and has obtained a permit before installing a system within its territorial limits or if a municipality, its extraterritorial jurisdiction. Inspectors must verify that

the design and installation meet the requirements of this chapter and local ordinances or rules that do not conflict with this chapter, or that are more stringent than this chapter.

(d) 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.

(e) An inspector may not inspect a landscape irrigation system that is an on-site sewage disposal system, as defined by Texas Health and Safety Code, §366.002.

(f) An inspector may not inspect an irrigation system that is used on or by an agricultural operation as defined by Texas Agricultural Code, §251.002; or is connected to a groundwater well that is used by the property owner for domestic use.

**SUBCHAPTER C: REQUIREMENTS FOR LICENSED IRRIGATORS
AND LICENSED INSTALLERS**

§§344.49, 344.58 - 344.63

STATUTORY AUTHORITY

These repeals are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These repeals are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These repeals are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these repeals are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted repeals implement TWC, §§5.013, 5.102, 5.103, 5.105, and 37.001 - 37.015; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.49. Display of License.

§344.58. Unauthorized Use of License.

§344.59. Seal Required.

§344.60. Seal and Rubber Stamp Facsimile Design.

§344.61. Authorized Use of Seal and Rubber Stamp facsimile.

§344.62. Unauthorized Use of Seal or Rubber Stamp.

§344.63. Required Use of Seal.

**SUBCHAPTER C: REQUIREMENTS FOR LICENSED
IRRIGATORS, INSTALLERS, IRRIGATION TECHNICIANS, AND IRRIGATION
INSPECTORS
§§344.30 - 344.38**

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These new sections are also adopted under TWC, 49.238, concerning Irrigation Systems. These new sections are also adopted under Local Government Code, §401.006, concerning Irrigation Systems. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 37.001 - 37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.30. License Required.

(a) An irrigator is an individual who:

(1) sells, designs, provides consultation services, installs, maintains, alters, repairs, or services an irrigation system, including the connection of such system to any water supply;

(2) advertises or represents to anyone that the individual can perform any or all of these functions; and

(3) is required to hold a valid irrigator license issued under Chapter 30 of this title (relating to Occupational Licenses and Registrations).

(b) Through December 31, 2009, an installer is an individual who connects an irrigation system to any water supply.

(c) Beginning January 1, 2009, an irrigation technician is an individual who:

(1) connects an irrigation system to a water supply;

(2) under the supervision of a licensed irrigator, installs, maintains, alters, repairs, or services a landscape irrigation system;

(3) represents to anyone that the individual can perform any or all of these functions; and

(4) is required to hold a valid irrigation technician license issued under Chapter 30 of this title.

(d) All irrigators, installers, and irrigation technicians shall comply with the rules contained in this chapter when performing any or all of the functions listed in this section.

(e) An individual who inspects irrigation systems and enforces a municipality's landscape irrigation ordinance must:

(1) hold a valid irrigation inspector license issued according to Chapter 30 of this title; or

(2) hold a valid plumbing inspector license.

(f) An individual who inspects irrigation systems and enforces a water district's rules related to landscape irrigation systems must:

(1) hold a valid irrigation inspector license issued according to Chapter 30 of this title;

(2) hold a valid plumbing inspector license;

(3) be the district's operator; or

(4) be another regulatory authority with jurisdiction over landscape irrigation.

(g) An inspector shall comply with the rules contained in this chapter when performing any or all of the functions listed in this section.

(h) A property owner is not required to be licensed in accordance with Texas Occupations Code, Title 12, §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 home. A home or property owner who installs an irrigation system must meet the standards contained in §344.62(b) Spacing, §344.62(c) Water pressure, §344.62(g) related to spraying water over impervious materials, §344.62(j) Rain or moisture shut-off devices or other technology, and §344.62(k) Isolation valve. Municipalities or water districts may adopt more stringent requirements for a home or property owner who installs an irrigation system.

§344.31. Exemption for Business Owner Who Provides Irrigation Services.

Under Chapter 30 of this title (relating to Occupational Licenses and Registrations), a business owner who employs a licensed irrigator as an irrigator-in-charge to provide consulting services or to supervise or conduct the exempt business's operations relating to the design, installation, maintenance,

alteration, repairing, and servicing of irrigation systems is exempt from the licensing requirements of Texas Occupations Code, Chapter 1903.

§344.32. Responsibilities of a Business Owner Who Provides Irrigation Services.

An exempt owner who provides landscape irrigation services shall ensure that all irrigation services are supervised by a licensed irrigator, according to the requirements of this subchapter. An exempt business owner who engages in landscape irrigation is responsible for verifying the validity of the license belonging to all irrigators, installers, and irrigation technicians performing irrigation services for the business. An exempt business owner who engages in landscape irrigation is responsible for designating an irrigator-in-charge.

§344.33. Display of License.

(a) Irrigators, installers, and irrigation technicians shall prominently display their license certificate at the place of irrigation business or employment and shall present their license upon request by any regulatory authority, irrigation system's owner, or prospective owner.

(b) Irrigation inspectors shall present their license, when requested by any entity that is regulated under this chapter, and when that request is made while an irrigation inspector is conducting business.

§344.34. Use of License.

(a) No one other than the irrigator, installer, irrigation technician, or irrigation inspector to whom a license is issued shall use or attempt to use the license, which includes the license number.

(b) An individual who uses or attempts to use the license or license number of someone else who is a licensed irrigator, licensed installer, licensed irrigation technician, or licensed irrigation inspector is in violation of Texas Occupations Code, Chapter 1903, and this chapter.

(c) An irrigator's license or license number may be used at only one entity as the irrigator-in-charge. An irrigator may work for other entities, but not as the irrigator-in-charge.

(d) It is a violation of this chapter for an irrigator, installer, irrigation technician or irrigation inspector to authorize or allow another person or entity to use the irrigator's, installer's, irrigation technician's, or irrigation inspector's license or license number in a manner inconsistent with this chapter.

§344.35. Duties and Responsibilities of Irrigators.

(a) An irrigator shall comply with the rules contained in this chapter when performing any or all of the functions described in this section.

(b) An irrigator who performs work for an entity or for an exempt business owner who performs or offers to perform irrigation services shall be knowledgeable of and responsible for all permits, contracts, agreements, advertising, and other irrigation services secured and performed using the irrigator's license.

(c) A licensed irrigator who is employed by an exempt business owner as defined by §344.31 of this title (relating to Exemption for Business Owner Who Provides Irrigation Services) shall supervise all irrigation services of the business, in accordance with this chapter.

(d) A licensed irrigator is responsible for:

- (1) using the stamp or rubber seal in accordance with this chapter;
- (2) obtaining all permits and inspections required to install an irrigation system;
- (3) complying with local regulations;
- (4) determining the appropriate backflow prevention method for each irrigation system installation and installing the backflow prevention device correctly;
- (5) maintaining landscape irrigation systems records;
- (6) conserving water;
- (7) developing and following irrigation plan for each new irrigation system;
- (8) designing an irrigation system that complies with the requirements of this chapter;

(9) providing on-site supervision of the installation of an irrigation system beginning January 1, 2010;

(10) providing supervision to an irrigation technician while connecting an irrigation system to a water supply; installing, maintaining, altering, repairing, or servicing an irrigation system;

(11) providing supervision to an installer connecting an irrigation system through December 31, 2009;

(12) completing the irrigation system including the final "walk through," completing the maintenance checklist , placing a permanent sticker on the controller or on the maintenance checklist if the irrigation system does not have an automatic controller, and providing a copy of the design plan;

(13) selling, consulting, performing maintenance, alteration, repair, and service of irrigation systems that complies with the requirements of this chapter;

(14) providing advertisements, contracts, and warranties that comply with the requirements of this chapter; and

(15) installing an irrigation system that complies with the requirements of this chapter.

§344.36. Duties and Responsibilities of Installers and Irrigation Technicians.

(a) A licensed installer may connect an irrigation system to a water supply through December 31, 2009. This includes installing an approved backflow prevention method pursuant to §344.50 of this title (relating to Backflow Prevention Methods) when connecting an irrigation system to a potable water supply. Beginning January 1, 2009, a licensed irrigation technician may connect an irrigation system to a water supply, including installing an approved backflow prevention method pursuant to §344.50 of this title and may maintain, alter, repair, service, or direct the installation of irrigation systems under the supervision of an irrigator.

(b) If an installer or irrigation technician connects an irrigation system to a potable water supply, the connection and installation of the backflow prevention method must be as indicated on the site irrigation plan or as directed by the licensed irrigator and documented on the site irrigation plan.

(c) Through December 31, 2009, an installer is responsible for the connection of an irrigation system to a water supply under the supervision of a licensed irrigator.

(d) Beginning January 1, 2009, an irrigation technician, under the supervision of a licensed irrigator, is responsible for:

(1) connecting an irrigation system to a water supply; and

(2) providing on-site supervision of the installation, maintenance, alteration, repair, service of an irrigation system including the final walk through with the irrigation system owner or owner's representative to explain the maintenance and operation of the irrigation system.

§344.37. Duties and Responsibilities of Irrigation Inspectors.

(a) A licensed irrigation inspector shall enforce the applicable irrigation rules or ordinance of the employing governmental entity.

(b) A licensed irrigation inspector, licensed plumbing inspector, a water district's operator or other governmental entity shall be responsible for:

(1) verifying that the appropriate permits have been obtained for an irrigation system and that the irrigator and installer or irrigation technician, if applicable, are licensed;

(2) inspecting the irrigation system;

(3) determining that the irrigation system complies with the requirements of this chapter;

(4) determining that the appropriate backflow prevention device was installed, tested, and test results provided to the water purveyor;

(5) investigating complaints related to irrigation system installation, maintenance, alteration, repairs, or service of an irrigation system and advertisement of irrigation services; and

(6) maintaining records according to this chapter.

§344.38. Irrigator, Installer, and Irrigation Technician Records.

Upon the licensed irrigator obtaining the seal or rubber stamp, in accordance with this chapter, an impression of the seal or rubber stamp will be made on letterhead, or other business stationary, and maintained on file for review by the commission. Archival copies of all records given to the irrigation system's owner or owner's representative shall be maintained by the irrigator. Records will be maintained by the irrigator for a period of three years from the date installation, maintenance, alteration, repair or service was completed. Irrigators, installers, and irrigation technicians shall make all records of landscape irrigation services available within ten business days of any request made by authorized representatives of the commission or the local regulatory authority with jurisdiction over landscape irrigation issues.

SUBCHAPTER D: STANDARDS FOR LANDSCAPE IRRIGATION

§§344.70 - 344.73, 344.75, 344.77

STATUTORY AUTHORITY

These repeals are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These repeals are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These repeals are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these repeals are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted repeals implement TWC, §§5.013, 5.102, 5.103, 5.105, and 37.001 - 37.015; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.70. Local Regulation.

§344.71. Local Inspection.

§344.72. Water Conservation.

§344.73. Backflow Prevention Methods.

§344.75. Specific Conditions and Backflow Prevention Devices.

§344.77. Minimum Standards for Design and Installation of Irrigation Systems.

SUBCHAPTER D: LICENSED IRRIGATOR SEAL

§§344.40 - 344.43

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, and 37.001 - 37.015; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.40. Seal Required.

Each irrigator, upon being licensed with the commission, shall obtain a seal, as described in §344.41 of this title (relating to Seal Design). Licensed irrigators shall not engage in any landscape irrigation services without physical possession of the seal and the license. The irrigator is responsible for the security of the seal.

§344.41. Seal Design.

(a) The required seal must be:

(1) circular; and

(2) not less than 1-1/2 inches in diameter.

(b) The required seal must display:

(1) the words "State of Texas" at the top between the knurled circles;

(2) the words "Licensed Irrigator" at the bottom; and

(3) the irrigator's name and license number, excluding leading zeros, horizontally in the circular field.

§344.42. Seal Display.

(a) On every document requiring an irrigator's seal, the seal shall be clearly visible and legible on the original document and all copies or reproductions of the original document.

(b) An irrigator may use an electronic or other format seal and signature if the seal, signature, and date are clearly visible and legible on the original document and all copies or reproductions of the original document.

§344.43. Seal Use.

(a) Irrigators shall:

(1) sign their legal name;

(2) affix the seal above the irrigator's signature; and

(3) include the date of signing (month, day, and year) of each document to which the seal is affixed.

(b) The presence of the irrigator's seal displayed above the irrigator's signature and date on any document constitutes the acceptance of all professional responsibility for the document and the irrigation services performed in accordance with that document .

(c) The irrigator will maintain, for three years, a copy of each document bearing the irrigator's seal.

(d) Once a document containing a seal is issued, the seal may not be altered.

(e) Irrigators shall not use or authorize the use of a seal on any plan or specification created by another irrigator unless the irrigator:

(1) Reviews and makes changes to adapt the plan or specification to the specific site conditions and to address state and local requirements; and

(2) Accepts full responsibility for any alterations to the plan or specification and any downstream consequences.

(f) If an irrigator prepares a portion of a plan or specification, that portion of the design or specification prepared by the irrigator, or under the irrigator's supervision and seal, should be clearly identified.

(g) Irrigators shall sign, seal and date the irrigation plan and specifications, contract, addenda or change orders, warranty, and the maintenance checklist.

**SUBCHAPTER F: STANDARDS OF CONDUCT FOR LICENSED
IRRIGATORS AND INSTALLERS**

§§344.90 - 344.96

STATUTORY AUTHORITY

These repeals are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These repeals are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. These repeals are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these repeals are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted repeals implement TWC, §§5.013, 5.102, 5.103, 5.105, and 37.001 - 37.015; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.90. Purpose of Standards.

§344.91. Intent.

§344.92. Proficiency in Field of Irrigation; Representation of Qualifications.

§344.93. Advertisement.

§344.94. Contracts.

§344.95. Design.

§344.96. Warranties.

SUBCHAPTER E: BACKFLOW PREVENTION AND CROSS CONNECTIONS

§§344.50 - 344.52

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001-37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively.

These new sections are also adopted under TWC, §49.238, concerning Irrigation Systems. These new sections are also adopted under Local Government Code, §401.006, concerning Irrigation Systems. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 37.001-37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.50. Backflow Prevention Methods.

(a) 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.

(b) If conditions that present a health hazard exist, one of the following methods must be used to prevent backflow;

(1) An air gap may be used if:

(A) there is an unobstructed physical separation; and

(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:

(A) 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

(B) drainage is provided for any water that may be discharged through the assembly relief valve.

(3) Pressure vacuum breakers may be used if:

(A) no back-pressure condition will occur; and

(B) 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.

(4) Atmospheric vacuum breakers may be used if:

(A) no back-pressure will be present;

(B) there are no shutoff valves downstream from the atmospheric vacuum breaker;

(C) 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;

(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) 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:

(1) a local regulatory authority does not prohibit the use of a double check valve;

(2) 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

(3) test cocks are used for testing only.

(e) 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.

§344.51. Specific Conditions and Cross-Connection Control.

(a) 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.

(b) 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.

(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 this title (relating to On-Site Sewage Facilities), 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 §285.91(10) of this title (relating to Minimum Required Separation Distances for On-Site Sewage Facilities);

(2) 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 §344.50 of this title (relating to Backflow Prevention Methods); 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.

§344.52. Installation of Backflow Prevention Device.

(a) If an irrigation system is connected to a potable water supply and 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 as defined in this title before any major maintenance, alteration, repair, or service is performed.

(b) 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.

(c) The irrigator shall ensure the backflow prevention device is tested 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.

**SUBCHAPTER F: STANDARDS FOR DESIGNING, INSTALLING, AND MAINTAINING
LANDSCAPE IRRIGATION SYSTEMS**

§§344.60 - 344.65

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively.

These new sections are also adopted under TWC, §49.238, concerning Irrigation Systems. These new sections are also adopted under Local Government Code, §401.006, concerning Irrigation Systems. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 37.001 - 37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.60. 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 §344.1(44) of this title (relating to Definitions).

§344.61. Minimum Standards for the Design of the Irrigation Plan.

(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 chapter; 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;

(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 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.

§344.62. Minimum Design and Installation 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 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. El Paso, Hudspeth, Culberson, Jeff Davis, Presidio, Brewster, Terrell, Loving, Winkler, Ward, Reeves, Ector, Crane and Pecos are excluded from this requirement.

(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.

(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 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.

§344.63. 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 and include:

(4) The irrigation plan indicating the actual installation of the system must be provided to the irrigation system's owner or owner representative.

§344.64. 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) 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.

§344.65. 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 §290.47(i) of this title (relating to Appendices);
- (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 regulations of the water purveyor.

SUBCHAPTER G: ADVERTISING, CONTRACT, AND WARRANTY

§§344.70 - 344.72

STATUTORY AUTHORITY

These new sections are adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; and TWC, §5.105, concerning General Policy. These new sections are also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively.

These new sections are also adopted under TWC, §49.238, concerning Irrigation Systems. This new section is also adopted under Local Government Code, §401.006, concerning Irrigation Systems. These new sections are also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; and TOC, §1903.251, concerning License Required. Finally, these new sections are also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

These adopted new sections implement TWC, §§5.013, 5.102, 5.103, 5.105, 37.001-37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, and 1903.251; and THSC, §341.033 and §341.034.

§344.70. Advertisement.

(a) All vehicles used in the performance of irrigation installation, maintenance, alteration, repair, or service must display the irrigator's license number in the form of "LI_____" in a contrasting color of block letters at least two inches high, on both sides of the vehicle .

(b) All forms of written and electronic advertisements for irrigation services must display the irrigator's license number in the form of "LI_____." Any form of advertisement, including business cards, and estimates which displays an entity's or individual's name other than that of the licensed irrigator must also display the name of the licensed irrigator and the licensed irrigator's license number. Trailers that advertise irrigation services must display the irrigator's license number.

(c) The name, mailing address, and telephone number of the commission must be prominently displayed on a legible sign and displayed in plain view for the purpose of addressing complaints at the permanent structure where irrigation business is primarily conducted and irrigation records are kept.

§344.71. Contracts.

(a) All contracts to install an irrigation system must be in writing and signed by each party and must specify the irrigator's name, license number, business address, current business telephone numbers, the date that each party signed the agreement, the total agreed price, and must contain the statement, "Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ), MC-178,

P.O. Box 13087, Austin, Texas 78711-3087. TCEQ's website is: www.tceq.state.tx.us." All contracts must include the irrigator's seal, signature, and date.

(b) All written estimates, proposals, bids, and invoices relating to the installation or repair of an irrigation system(s) must include the irrigator's name, license number, business address, current business telephone number(s), and the statement: "Irrigation in Texas is regulated by the Texas Commission On Environmental Quality (TCEQ) (MC-178), P. O. Box 13087, Austin, Texas 78711-3087. TCEQ's web site is: www.tceq.state.tx.us."

(c) An individual who agrees by contract to provide irrigation services as defined in §344.30 of this title (relating to License Required) shall hold an irrigator license issued under Chapter 30 of this title (relating to Occupational Licenses and Registrations) unless the contract is a pass-through contract as defined in §344.1(36) of this title (relating to Definitions). If a pass-through contract includes irrigation services, then the irrigation portion of the contract can only be performed by a licensed irrigator. If an irrigator installs a system pursuant to a pass-through contract, the irrigator shall still be responsible for providing the irrigation system's owner or through contract, the irrigator shall still be responsible for providing the irrigation system's owner or owner's representative a copy of the warranty and all other documents required under this chapter. A pass-through contract must identify by name and license number the irrigator that will perform the work and must provide a mechanism for contacting the irrigator for irrigation system warranty work.

(d) The contract must include the dates that the warranty is valid.

§344.72. Warranties.

(a) On all installations of new irrigation systems, an irrigator shall present the irrigation system's owner or owner's representative with a written warranty covering materials and labor furnished in the new installation of the irrigation system. The irrigator shall be responsible for adhering to terms of the warranty. If the irrigator's warranty is less than the manufacturer's warranty for the system components, then the irrigator shall provide the irrigation system's owner or the owner's representative with applicable information regarding the manufacturer's warranty period. The warranty must include the irrigator's seal, signature, and date. If the warranty is part of an irrigator's contract, a separate warranty document is not required.

(b) An irrigator's written warranty on new irrigation systems must specify the irrigator's name, , business address, and business telephone number(s), must contain the signature of the irrigation system's owner or owner's representative confirming receipt of the warranty and must include the statement:
"Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ), MC-178, P.O. Box 130897, Austin, Texas 78711-3087. TCEQ's website is: www.tceq.state.tx.us."

(c) On all maintenance, alterations, repairs, or service to existing irrigation systems, an irrigator shall present the irrigation system's owner or owner's representative a written document that identifies the materials furnished in the maintenance, alteration, repair, or service. . If a warranty is provided, the irrigator shall abide by the terms . The warranty document must include the irrigator's name, , and business contact information.

SUBCHAPTER H: IRRIGATOR ADVISORY COUNCIL

§344.80

STATUTORY AUTHORITY

This new section is adopted under Texas Water Code (TWC), §5.013, concerning the General Jurisdiction of the Commission; TWC, §5.102, concerning General Powers; TWC, §5.103, concerning Rules; TWC, §5.105, concerning General Policy; and TWC, §5.107, concerning Advisory Committees, Work Groups, and Task Forces. This new section is also adopted under TWC, §§37.001 - 37.015, concerning: Definitions; Rules; License or Registration Required; Qualifications; Issuance and Denial of Licenses and Registrations; Renewal of License or Registration; Licensing Examinations; Training; Continuing Education; Fees; Advertising; Complaints; Compliance Information; Practice of Occupation; Roster of License Holders and Registrants; and Power to Contract, respectively. This new section is also adopted under TWC, §49.238, concerning Irrigation Systems. This new section is also adopted under Local Government Code, §401.006, concerning Irrigation Systems. This new section is also adopted under TOC, §1903.001, concerning Definitions; TOC, §1903.002, concerning Exemptions; TOC, §1903.053, concerning Standards; TOC, §1903.151 concerning Council Membership; TOC, §1903.152, concerning Eligibility of Public Members; TOC, §1903.155, concerning Presiding Officer; TOC, §1903.157, concerning Meetings; TOC, §1903.158 concerning Per Diem Reimbursement; TOC, §1903.159, concerning Council Duties; and TOC, §1903.251, concerning License Required. Finally, this new section is also adopted under THSC, §341.033, concerning Protection of Public Water Supplies; and THSC, §341.034, concerning Licensing and Registration of Persons Who Perform Duties Relating to Public Water Supplies.

This adopted new section implements TWC, §§5.013, 5.102, 5.103, 5.105, 5.107, 37.001 - 37.015, and 49.238; Local Government Code, §401.006; TOC, §§1903.001, 1903.002, 1903.053, 1903.151, 1903.152, 1903.155, 1903.157, 1903.158, 1903.159, and 1903.251; and THSC, §341.033 and §341.034.

§344.80. Irrigator Advisory Council.

(a) The Irrigator Advisory Council is composed of nine members that are appointed by the commission. Appointments to the council will be made without regard to race, creed, sex, religion, or national origin of the appointees. The purpose of the council is to give the commission the benefit of the members' collective business, environmental, and technical expertise and experience with respect to matters relating to landscape irrigation. The council has no executive or administrative powers or duties with respect to the operation of the commission, and all such powers and duties rest solely with the commission.

(b) Six members of the council must be licensed irrigators who are residents of the State of Texas, experienced in the irrigation business, and familiar with irrigation methods and techniques.

(c) Three members must be representatives of the public. A person is not eligible for appointment as a public member if the person or the person's spouse:

(1) is licensed by an occupational regulatory agency in the field of irrigation; or

(2) is employed by, participates in the management of, or has, other than as a consumer, a financial interest in a business entity or other organization related to the field of irrigation.

(d) It is grounds for removal from the council by the commission if a member:

(1) does not meet, at the time of the appointment, the qualifications that are required by subsection (b) or (c) of this section for appointment to the council;

(2) does not maintain, during service on the council, the qualifications that are required by subsection (b) or (c) of this section for appointment to the council; or

(3) misses three consecutive regularly scheduled meetings or more than half of all the regularly scheduled meetings in a one-year period.

(e) The members of the council serve six-year terms, with the terms expiring February 1 of each odd-numbered year.

(f) A member of the council is entitled to per diem as appropriated by the Texas Legislature for each day that the member engages in the business of the council. A member is entitled to reimbursement

for travel expenses, including expenses for meals and lodging, as provided for in the General Appropriations Act.

(g) The council shall hold meetings at the call of the commission or chairman.

(h) A majority of the council constitutes a quorum for conducting business.

(i) The council will elect a chairman by a majority vote.