VERONA SPECIAL UTILITY DISTRICT

408 W. FM 545 Suite 400
Blue Ridge, Texas 75424
(972) 752-4016

RATE ORDER

CERTIFICATE OF CONVENIENCE AND NECESSITY NO. 10184

COLLIN COUNTY, TEXAS

Amended and Restated February 11, 2021
Last Amended August 20, 2024

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ARTICLE A

ADOPTION & AUTHORITY

1. **Effective Date.** This amended and restated Rate Order was adopted on February 11, 2021, by the board of directors of the Verona Special Utility District by passage of Ordinance No. 2021-001. This Rate Order supersedes all district service policies, rates, rules and tariffs adopted or passed by the board prior to the date of its adoption.

2. **Preexisting Penalties and Vested Rights.** The adoption of this Rate Order shall not affect any offense or act committed or done, or any penalty or forfeiture incurred, or any contract or vested right established or accrued prior to the effective date or adoption of this Rate Order.

3. **Original Rate Order.** An original of this Rate Order shall be maintained in the official records of the district and all additions, deletions, and amendments hereto shall be clearly indicated.

4. **Copies Available.** An official copy of the Rate Order, as amended, shall be available to the public for examination at the district's regular offices during regular office hours. A copy of the Rate Order shall be made available upon request and payment of a reproduction charge.

5. **Conflicts.** Rules and regulations of state and federal agencies having applicable jurisdiction, promulgated under any applicable state or federal law, shall supersede all terms of this Rate Order that directly conflict with such state and federal rules or regulations. If any section, paragraph, sentence, clause, phrase, word or words of this Rate Order are declared unconstitutional or in violation of law, the remainder of this Rate Order shall not be affected thereby and shall remain in full force and effect.

ARTICLE B

STATEMENTS

1. **Organization**. The district was formed on May 16, 2002, by Order of the Texas Commission on Environmental Quality granting the request of Verona Water Supply Corporation for conversion to and creation of Verona Special Utility District under the authority of Article XVI, Section 59 of the TEXAS CONSTITUTION and TEXAS WATER CODE, Chapters 49 and 65. Said Order grants to the district all of the rights, powers, privileges, authority, and functions conferred by the Commission and the general laws of the State of Texas relating to special utility districts, including the right and authority to furnish potable water service and sewer service to the public. The district is governed by a board of directors responsible for adopting all district policies, rates and regulations. Members of the board are elected at-large by qualified voters residing within the boundaries of the district.

2. **Non-discrimination Policy**. Service is provided to all applicants that comply with the provisions of this Rate Order regardless of race, creed, color, national origin, sex, disability or marital status.

3. **Application of Policies and Regulations.** The policies, rules and regulations set forth in this Rate Order apply to all service provided by the district unless expressly excepted by the board. Failure on the part of any customer or applicant to observe these policies, rules and regulations gives the district the authority to deny or discontinue service.

4. **Fire Protection.** It is not a primary responsibility of the district to provide "fire-flows" from the district's water system. The district does not guarantee fire flows within the service area. As the water system undergoes growth and transitions to a more urban system, it shall be district policy that water system infrastructure be constructed to accommodate "fire-flows" in accordance with applicable municipal, county or state regulations. All hydrants or flush valves are for the operation and maintenance of the water system and may be used for refill only by authorized fire departments. The district reserves the right to remove any hydrant due to improper use or detriment to the water system, as determined by the district, at any time and without notice, refund or compensation to the contributor, if any, unless such hydrant was installed in accordance with a Nonstandard Service Contract, in which event the terms and conditions of the contract shall apply.

5. **Damage Liability.** Pursuant to state law, the district is not liable for damages caused by service interruptions due to system failure, tampering by third persons or district customers, system maintenance or repairs, or other events beyond the district's control; nor is the district liable for damages caused by negligent acts of the district or the district's employees, designated representatives, agents or contractors.

6. **Public Information Disclosure.** The records of the district shall be kept at the district's regular offices at 408 W FM 545 Suite 400, Blue Ridge, TX 75424. All information collected, assembled or maintained by or for the district shall be disclosed to

the public in accordance with the Texas Public Information Act. An individual customer may request in writing that the district keep the customer's name, address, and telephone number confidential. Such confidentiality does not prohibit the district from disclosing this information to an official or employee of the state or a political subdivision of the state acting in an official capacity, or to an employee of the district acting in connection with the employee's duties. The district may assess a reasonable charge, as authorized by the Texas Public Information Act, for copies of district records requested by any person.

7. **Notice of Change in Rates.** The district will give written notice of a change to monthly water rates by publication or mail to all affected customers at least thirty (30) days prior to the effective date of the new rate. The notice shall state the old rates, the new rates and their effective date, the date of board authorization, and the name and telephone number of the district representative designated to address inquiries about the rate change. Failure of the district to give such notice shall not invalidate a rate change or any charge based on the new rate.

8. **Customer Service Inspections.** The district requires that a customer service inspection certificate be completed prior to providing continuous water service to new construction and for all new customers as part of the activation of standard and some non-standard service. Customer service inspections are also required on any existing service when the district has reason to believe that a cross-connection or other potential contaminant hazard exists, or after any material improvement, correction or addition to a customers' water distribution facilities. This inspection is limited to the identification and prevention of cross connections, potential contaminant hazards and illegal lead materials. [30 TAC § 290.46(i-j)].

9. **Public Works Standards.** The district adopts applicable sections of the Standard Specifications for Public Works Construction (5th Edition), as amended, promulgated by the North Central Texas Council of Governments, as guidance in the design, installation and maintenance of line extensions and service facilities.

10. **Submetering Responsibility**. Submetering and non-submetering by Master Metered Accounts may be allowed in the district's water or sewer system provided the Master Metered Account customer registers with the Texas Commission on Environmental Quality and complies with Commission regulations contained in Texas Administrative Code, Title 30, Chapter 291, Subchapter H. The district has no jurisdiction over or responsibility to tenants receiving water under a Master Metered Account, and such tenants are not considered customers of the district. Any interruption or impairment of water service to the tenants is the responsibility of the Master Metered Account customer. Any complaints regarding submetering should be directed to the Commission.

11. **District Forms Policy.** The District has promulgated official forms for various administrative and customer service purposes. Official forms must be used when applicable. The District reserves the right to amend, revise and discontinue use of any form, and to create and use new forms for any reason including compliance with federal state laws and regulations, improving administrative efficiency, preparing for future system demands, and meeting the unique service needs of developers and non-standard service applicants or customers.

ARTICLE C

DEFINITIONS

The following words and terms, when used in this Rate Order, shall have the following definitions unless the context clearly indicates otherwise:

Applicant — A person applying to the district for service

Board of Directors (or) **Board** — The governing body of the district elected by qualified voters residing within the district's boundaries in accordance with applicable election laws.

Certificate of Convenience and Necessity (or) **CCN** — The authorization granted by the Texas Commission on Environmental Quality under Chapter 13, Subchapter G of the Texas Water Code authorizing a retail public utility to furnish potable water or sewer utility service within a defined territory. The district has been issued CCN No. 11376 to provide retail water utility service. The district does not possess a sewer CCN.

Certificated service area (or) **service area** — The district's potable water service territory defined in CCN No. 10184 defined by the district's political boundaries. [See Article D. Geographic Areas Served].

Customer — Any person receiving service from the district

Designated representative — A district employee, agent or contractor engaged in carrying out the terms of, or performing services prescribed by, this Rate Order pursuant to either general authorization or specific authorization by the general manager or board of directors.

Developer — Any person that subdivides land, requests two (2) or more water or sewer service connections on a single contiguous tract of land, or is engaged in developing a tract of land for non-residential use with water demands that cannot be served through a standard residential water meter. [See Water Code § 13.2502(e) (1)]

Development Review Committee (DRC) — A committee composed of District staff, as selected by the District's General Manager, together with a representative(s) from the Board of Directors and the District's engineer and/or attorney as deemed necessary by the General Manager that will meet on an as needed basis with developers to review and determine the requirements for providing non-standard service.

Disconnection of service — The discontinuance of water or sewer service to a customer of the district.

District — The Verona Special Utility District of Collin County, Texas

Easement — A perpetual right-of-way on land granted or dedicated to the district for purposes of constructing, installing, replacing, repairing, operating, using, inspecting,

reconstructing, modifying, removing, abandoning and maintaining one or more waterlines and/or sewer service lines and all appurtenances thereto. Easements must be exclusive to the district unless otherwise agreed to by the general manager.

Final plat — A complete and exact plan for the subdivision or development of a tract of land which has been approved by all local governments having jurisdiction pursuant to Chapters 212 or 232 of the Texas Local Government Code. The district shall determine if a plat submitted under this Rate Order qualifies as a final plat. [See 30 TAC § 291.85].

General Manager — A person employed by the board to perform such services as general manager for the district that the board may from time to time specify.

Hazardous condition — A condition that jeopardizes the health and welfare of district customers or employees as determined by the district or any other regulatory authority with jurisdiction.

Master Meter — A meter that serves two or more connections installed with district permission by a Master Metered Account customer that has registered with the Commission and complied with this Rate Order and Commission regulations contained in Texas Administrative Code, Title 30, Chapter 291, Subchapter H.

Person — Any natural person, firm, corporation, cooperative, limited liability company, partnership, unincorporated association, public agency or governmental entity, or any other public or private organization or entity of any type or character.

Re-Service — Providing service to an applicant at a location with an existing meter setting or tap that was previously served by the district. The cost of such re-servicing shall be as established in this Rate Order or based on justifiable expenses in connection with such re-servicing.

Service application and agreement (or) **service agreement** — A written agreement on the current service application and agreement form between a service applicant and the district defining the specific type of service requirements requested and the responsibilities of each party regarding the service to be provided.

Service classification — The type of water service required by an applicant as may be determined by the district based on specific criteria such as usage, meter size, demand, type of application, and other relevant factors related to the nature of service requested by an applicant.

Service unit — The base service unit used by the district in facilities design and rate making in this Rate Order is a standard 5/8” x 3/4" water meter for domestic use (sometimes referred to as a "residential meter").

Service — Any act performed, anything furnished or supplied, and any facilities or lines committed or used by the district in the performance of its duties under the Texas Water Code, the Texas Administrative Code or this Rate Order to its customers, employees,

other retail public utilities and the public, as well as the interchange of facilities between the district and one or more retail public utilities.

Service Investigation Fee — A fee paid to the district for the purpose of having the district determine the feasibility of providing water service to a proposed subdivision or non-residential project or of a construction, line extension and/or expansion project. The service investigation fee is due with the submission of a non-standard service application to the district. The fee covers administrative expenses, engineering fees, and legal fees incurred by the district to process the service application and determine feasibility of providing the requested service.

Subdivide — To divide the surface area of land into lots or tracts. [See Local Gov't Code § 232.021(11)].

Subdivision — An area of land that has been subdivided into lots or tracts. [See Local Gov't Code § 232.021(13)].

Temporary service — The classification for non-standard water service assigned to an applicant that is in the process of constructing a residential or commercial structure. The district may also apply this classification to other nonpermanent service uses (e.g., agricultural, road construction, drilling, livestock, etc.). The district may provide temporary water service for up to six (6) months from the date of application for temporary service. Temporary service may be extended upon request and approval of the district's general manager on a case-by-case basis. As a prerequisite to receiving temporary service, an applicant must pay applicable temporary service charges as set forth in Article G of this Rate Order.

Texas Commission on Environmental Quality (or) **TCEQ** (or) **Commission** — The state regulatory agency having jurisdiction over water and sewer service utilities and appellate jurisdiction over the rates and fees charged by the district.

North Texas Municipal Water District (or) **NTMWD** — A regional conservation and reclamation district created pursuant to Article XVI, Section 59 of the Texas Constitution that supplies wholesale treated surface water and wholesale sewer treatment. The district is located within the NTMWD's regional service area.

Water system — The potable water supply, treatment, storage and distribution facilities operated by, or constructed by or for, the district, and any water system extensions, improvements or facilities that may be built within the district's boundaries or service area in the future.

ARTICLE D

GEOGRAPHIC AREA SERVED

1. **Water Service Area.** The district's water service area is defined by CCN No. 10184, which is valid until amended or revoked by the Public Utility Commission of Texas. A copy of CCN No. 10184 including a map of the water service area is attached to this Article D.

Public Utility Commission of Texas

By These Presents Be It Known To All That

VERONA WATER SUPPLY CORPORATION

having duly applied for certification to provide water utility service for the convenience and necessity of the public, and it having been determined by this Commission that the public convenience and necessity would in fact be advanced by the provision of such service by this Applicant, is entitled to and is hereby granted this

Certificate of Convenience and Necessity

numbered 10184, to provide water utility service to that service area or those service areas designated by final Order or Orders duly entered by this Commission, which Order or Orders are on file at the Commission offices in Austin, Texas; and are matters of official record available for public inspection; and be it known further that these presents do evidence the authority and the duty of this Grantee to provide such utility service in accordance with the laws of this State and the Rules of this Commission, subject only to any power and responsibility of this Commission to revoke or amend this Certificate in whole or in part upon a subsequent showing that the public convenience and necessity would be better served thereby.

Issued at Austin, Texas, this 1st day of November, 1979.

Philip F. Ricketts
SECRETARY OF THE COMMISSION

ARTICLE E

SERVICE RULES AND REGULATIONS

[Amended June 18, 2024, Ord 2024-002; Amended Aug. 20, 2024, Ord 2024-003]

1. **Service Entitlement.** An applicant requesting service to real property located within the district's service area shall be considered qualified and entitled to water or sewer service when proper application has been made, the terms and conditions of service have been met and continue to be met, and all fees have been paid as prescribed. An applicant requesting service to real property located outside the boundaries of the district's water service area or political boundaries shall be considered for service in accordance with current district policies governing the provision of service outside district boundaries.

2. **Application Procedures and Requirements.**

(a) Service Classifications. Applications to the district for service shall be divided into the following two (2) classes:

(1) *Standard Service.* Standard service is defined as service from an existing service line where line or service facility extensions are not required and special design and/or engineering considerations are not necessary. Standard water service is provided through a standard (5/8" x 3/4") meter set on an existing waterline. Standard sewer service is provided via minimum 4" gravity sewer taps with pressure collection facilities installed or connected to collection lines at a maximum depth of five feet (5').

(2) *Non-Standard Service.* Non-standard service is defined as any service request that requires a 3/4" meter or larger for service, temporary water service, service to a Master-Metered Account pursuant to Section E.2(c)(4) below, or an addition to or extension of the district's water system or sewer system. Except for temporary service applicants, a non-standard service applicant must comply with the service requirements prescribed by Article F of this Rate Order prior to receiving service.

(b) Requirements for Standard and Non-Standard Service.

(1) The applicant shall complete and sign a Service Application and Agreement or Non-Standard Service Application as applicable.

(2) As a condition for service, the applicant shall complete and execute an Easement and Right-of-Way, Sanitary Control Easement or such other easement forms as required by the district to obtain a dedicated easement(s) to allow the district a right of access to construct, install, maintain, replace, upgrade, inspect or test any facility necessary to serve the applicant as well as the district's purposes in providing system-wide service. [Tex Water Code §49.218]. This requirement may be delayed for non-standard service

applicants. New meters shall be located within a utility easement at or near the boundary line of the property designated for service.

(3) The applicant shall provide proof of ownership or proof of the right to occupy the real property designated to receive service by warranty deed, contract for deed or other recordable documentation of fee simple title, or by a lease document in the instance of a right to occupy land.

(4) At the request of a property owner or an owner's authorized agent, the district shall install individual meters owned by the district in an apartment house, manufactured home rental community, multiple use facility, or condominium on which construction begins after January 1, 2003, unless the district determines that the installation of individual meters is not feasible. If the district determines that installation of individual meters is not feasible, the property owner or manager shall install a plumbing system that is compatible with the installation of submeters or individual meters. The district shall be entitled to the payment of reasonable costs to install individual meters pursuant to 30 TAC § 291.122(d) and Section F of this Rate Order. The cost of individual meter installations shall be prepaid by the property owner as well as the cost of any additional facilities or system improvements required to satisfy the total water service demand of the property at full occupancy, as determined by the district under applicable provisions of Article F. The district shall consider master metering or furnishing non-standard sewer service to apartments, condos, trailer/RV parks, or business centers and other similar type enterprises at an applicant's request provided the total number of units to be served are all:

(A) owned by the same person, partnership, cooperative, corporation, agency, or public or private organization of any type, but not including a family unit;

(B) directly inaccessible to a public right-of-way; and

(C) considered a commercial enterprise (i.e., for business, rental or lease purposes).

(5) Notice of application approval and costs of service as determined by the district shall be presented to the applicant in writing and shall remain in effect for a period not to exceed thirty (30) days. After that time, the applicant must re-apply for service. [30 TAC § 291.81(a)(1)].

3. **Activation of Standard Service.**

(a) <u>New Service Connection</u>. The district shall charge a nonrefundable Connection Fee and other applicable fees as required under Article G of this Rate Order. The Connection Fee and other applicable charges fees shall be quoted in writing to the applicant. An applicant must pay all required fees prior to installation of the new service connection.

(b) Re-service. On property where service previously existed, the district shall charge a deposit and all fees applicable to restoration of service. When re-service is requested by an applicant owing any delinquent charges on previous service received from the district, all delinquent charges must be paid before re-servicing procedures can begin. In no event will a capital improvement fee or contribution or capital impact fee be charged for a re-service event.

(c) Performance of Work. After approval is granted by proper authorities, all tap and equipment installations specified by the district shall be completed by the district personnel or designated representative. No person, other than a properly authorized agent of the district, shall be permitted to tap or make any connection with the mains or distribution pipes of the district's water system, or to make any repairs or additions to or alterations in any tap, pipe, cock or other fixture connected with the water service pipe. The tap shall be completed within five (5) working days when ever practical but not later than ten (10) working days after approval and receipt of payment of quoted fees for the property designated to receive service. This time may be extended for installation of facilities and equipment necessary to serve a request for non-standard service.

(d) Customer Service Inspections. The district shall require a customer service inspection of an applicant's property and private water distribution facilities to ensure compliance with state required Minimum Acceptable Operating Practices for Public Drinking Water Systems as promulgated by the Commission. [Section B.8]. As a result of such an inspection, the district may require that a customer properly install a backflow prevention device, and thereafter, inspect, test and maintain the device, and provide all required documentation to the district, all at the customer's expense. [30 TAC § 290.46(j)].

4. **Activation of Non-Standard Service.**

(a) Activation of Non-Standard Service. Activation of non-standard service shall be conducted pursuant to Section F of this Rate Order.

(b) Re-service. The provisions applicable to standard re-service requests under the previous subsection 3(b) shall also apply to non-standard re-service requests.

5. **Changes in Service Classification.** If at any time the district determines that the service classification of a customer has changed from that originally applied for and that additional or different facilities are necessary to provide adequate service, the district shall require the customer to re-apply for service under the terms and conditions of this Rate Order. Customers failing to comply with this provision shall be subject to Disconnection with Notice under Section E.14 (a) below.

6. **Owners and Tenants.** The owner of property designated to receive service according to the terms of this Rate Order is responsible for all fees and charges due the district for service provided to such property. If an owner has signed an Alternate Billing Agreement for Rental Accounts, the district may bill a tenant for service as a third party,

but the owner remains fully responsible for any and all unpaid fees and charges of the tenant. The district may notify an owner of a tenants' past due payment status subject to service charges.

7. **Refusal of Service.** The district may refuse to serve an applicant for the following reasons:

(a) failure of an applicant to complete all required easement forms and pay all required fees and charges;

(b) failure of an applicant to comply with the rules, regulations and policies of the district, including but not limited the failure to pay amounts due the district for at another location in the district.

(c) existence of a hazardous condition at the applicant's property which would jeopardize the welfare of other customers of the district upon connection;

(d) failure of an applicant to provide representatives or employees of the district reasonable access to property, for which service has been requested;

(e) failure of an applicant to comply with all rules and regulations of the district which are in this Rate Order on file with the state regulatory agency governing the service applied for by the applicant; or

(f) the district has determined that the applicant's service facilities are known to be inadequate or of such character that satisfactory service cannot be provided.

(g) failure to provide the district with proper picture ID i.e authorized governmental driver's license, passport, authorized governmental ID card.

8. **Applicant's Recourse.** In the event the district refuses to serve an applicant under the provisions of this article, the district shall inform the applicant in writing of the basis of its refusal and that the applicant may file a written complaint pursuant to the District's grievance procedures. (See Section E.18).

9. **Insufficient Grounds for Refusal of Service.** The following shall not constitute sufficient cause for the refusal of service to an applicant:

(a) delinquency in payment for service by a previous owner or tenant of the property designated for service;

(b) failure to pay a bill to correct previous under billing more than six (6) months prior to the date of application;

(c) violation of the district's rules pertaining to operation of non-standard equipment or unauthorized attachments which interferes with the service of others, unless the customer has first been notified and been afforded reasonable opportunity to comply with said requirements;

(d) failure to pay a bill of another customer as guarantor thereof unless the guarantee was made in writing to the district as a condition precedent to service;

(e) failure to pay the bill of another customer at the same address except where the change of customer identity is made to avoid or evade payment of a utility bill;

(f) failure to comply with regulations or rules for anything other than the type of utility service specifically requested including failure to comply with on-site sewage disposal regulations requirements.

10. **Deferred Payment Agreement.** The District may enter into a deferred payment agreement, not to exceed a term of 6 months, with a customer who cannot pay an outstanding balance in full and is willing to pay the balance in reasonable installments as determined by the District, including any late payment penalties or interest on the monthly balance to be determined as per the agreement. The District may require payments under a deferred payment agreement to be made by automatic bank draft or credit card. Failure to make a timely payment will cause the outstanding balance to become immediately due.

11. **Charge Distribution and Payment Application.**

(a) Service Fee. The applicable base rate shall be charged for each monthly billing period from the first day to the last day of the monthly billing cycle. The base rate shall be prorated for meter installations and service terminations that occur during the monthly billing period. Billings for this amount shall be mailed on or about the twenty-fifth (25th), first (1^{st}), or the eighth (8^{th}) day of the month depending on the customers billing cycle preceding the month for which this charge is due. The service fee shall be charged to all service connections whether or not there is use of service.

(b) Gallonage Charge. A gallonage charge shall be billed at the rate specified in Article G and shall be calculated in one thousand (1000) gallon increments. Charges for water and sewer usage are based on monthly meter readings and are calculated from reading date to reading date. The district shall take all meter readings used in calculating billing.

(c) Posting of Payments. All payments shall be posted against previous balances prior to posting against current billings.

12. **Due Dates, Delinquent Bills, and Service Disconnection Date.** The district shall mail all monthly bills on or about the twenty-fifth (25th) day of the month. All bills shall be due and payable upon receipt and are past due beyond the date indicated on the bill (allowing a minimum of 15 days to pay), after which time a penalty shall be applied as described in Article G. Payments made by mail will be considered late if postmarked after the past due date. A five (5) day grace period may then be allowed for delayed payments prior to mailing of final notices. Final notices shall be mailed allowing ten (10) additional days for payment prior to disconnection. The ten (10) additional days shall begin on the

day the final notice is deposited with the U.S. Postal Service with sufficient postage. If the past due date for the regular or final billing is on a weekend or holiday, the past due date for payment purposes shall be the next day the district office is open for business after said weekend or holiday. For all disputed payment deadlines, the date postmarked on each bill will determine the beginning of each billing cycle or final notice mailings.

13. **Rules for Disconnection of Service.**

(a) Disconnection with Notice. Water service may be disconnected after proper notice for any of the following reasons:

(1) failure to pay a delinquent account for service provided by the district, failure to timely provide a deposit, or failure to comply with the terms of a deferred payment agreement;

(2) violation of the district's rules pertaining to the use of service in a manner which interferes with the service of others;

(3) the operation of non-standard equipment, if a reasonable attempt has been made to notify the customer and the customer is provided with a reasonable opportunity to remedy the situation;

(4) failure to comply with the terms of a service agreement, Non-Standard Service Contract or this Rate Order;

(5) failure to provide district personnel or designated representatives access to a meter or to property at which water service is received for purposes of inspecting and verifying the existence of potential hazardous conditions or policy violations;

(6) any misrepresentation of fact by an applicant or customer on any form, document or agreement required by the district;

(7) or failure to re-apply for service upon notification by the district that customer no longer meets the service classification originally applied for under the original service application.

(b) Disconnection Without Notice. Water service may be disconnected without prior notice for the following reasons:

(1) where a known dangerous or hazardous condition exists for which service may remain disconnected for as long as the condition exists, including but not limited to a violation of Chapter 341 of the Health and Safety Code and regulations adopted pursuant thereto, or where the district has reason to believe a dangerous or hazardous condition exists and the customer refuses to allow access for the purpose of confirming the existence of such condition and/or removing the dangerous or hazardous condition [Sections E.3(d), E.20: 30 TAC § 290.46 (j)];

(2) where service is connected without authority by a person who has not made application for service;

(3) where service has been reconnected without authority following termination of service for nonpayment; or

(4) in instances of tampering with the district's meter or equipment, by-passing the meter or equipment, or other diversion of service.

(c) Disconnection Prohibited. Water service may not be disconnected for any of the following reasons:

(1) failure to pay for merchandise or charges for non-utility service provided by the district, unless there is an agreement whereby the customer guaranteed payment of non-utility service as a condition of service or the district has a contract with another governmental unit to collect for services rendered to the customer by such other government unit such as water, sewer, or solid waste services, etc.;

(2) failure to pay for a different type or class of utility service unless a fee for such service is included in the same bill;

(3) failure to pay charges arising from an under billing due to any misapplication of rates more than six (6) months prior to the current billing;

(4) failure to pay the account of another customer as guarantor thereof, unless the district has in writing the guarantee as condition precedent to service;

(5) failure of the customer to pay charges arising from an under billing due to any faulty metering, unless the meter has been tampered with or unless such under billing charges are due under the subsection concerning "Inoperative Meters" below;

(6) failure of the customer to pay estimated bill other than a bill rendered pursuant to an approved meter reading plan, unless the district is unable to read the meter due to circumstances beyond its control; or

(7) in response to a request for disconnection by an owner of rental property where the tenant is billed directly by the district and the renter's account is not scheduled for disconnection under the rules for disconnection of service in this Rate Order.

(d) Disconnection on Holidays and Weekends. Unless a dangerous condition exists or the customer requests disconnection, service shall not be disconnected on a day, or on a day preceding a day, when district personnel are not available to the public for the purpose of making collections and reconnecting service.

(e) Disconnection Due to Utility Abandonment. The district may not abandon a customer or a certificated service area without written notice to its customers and all similar neighboring utilities, and obtained approval from the Commission.

(f) Disconnection Due to Illness or Disability. The district may not discontinue service to a delinquent residential customer permanently residing in an individually metered dwelling unit when that customer establishes that discontinuance of service will result in some person at that residence becoming seriously ill or more seriously ill if service is discontinued. Each time a customer seeks to avoid termination of service under this subsection, the customer must have his or her attending physician call or contact the district with sixteen (16) days of issuance of the bill, and the district must receive an original written statement from a treating physician within twenty-six (26) days of the issuance of the monthly bill. The prohibition against service termination shall last sixty-three (63) days from the issuance of the monthly bill or such lesser period as may be agreed upon by the district and customer's physician. The customer shall enter into a Deferred Payment Agreement.

(g) Disconnection of Master-Metered Accounts. When a bill for service to a master-metered account customer is delinquent, the following shall apply:

(1) The district shall send a notice to the Master-Metered Account customer as required. This notice shall also inform the customer that notice of possible disconnection will be provided to the customer's tenants or occupants of the master metered property in five (5) days if payment is not rendered before that time.

(2) At least five (5) days after providing notice to the Master-Metered Account customer, and at least five (5) days prior to disconnection, the district shall post notices stating "Termination Notice" in public areas of the master-metered property to notify tenants or occupants of the scheduled date for disconnection of service.

(3) The tenants or occupants may pay the district for any delinquent bill in behalf of the customer to avert disconnection or to reconnect service to the master-metered property.

(h) Disconnection of Temporary Service. When an applicant with temporary service fails to comply with the conditions stated in the service agreement or provisions of this Rate Order, the district may terminate temporary service with notice.

(i) Payment During Disconnection. The district is not obligated to accept payment of a bill when a district employee or designated representative is at the customer's property for the purpose of disconnecting service.

14. **Returned Check Policy.** Payment by check or ACH which has been rejected for insufficient funds, closed account, or for which a stop payment order has been issued is not deemed to be payment to the district. The district shall mail, via the U.S. Postal

Service, a Notice of Returned Check or ACH requiring that a returned instrument be redeemed at the district's regular offices within ten (10) days of the date of the notice. Redemption of the returned instrument shall be made by cash, money order, or certified check. Failure to meet these terms shall result in disconnection of service. A customer shall be considered a bad credit risk for having an instrument returned as insufficient or non-negotiable for any reason for any two billing periods within a 12-month period, and shall be placed on a "cash-only" basis for a 12-month period during which the district will only accept payment by means of a certified check, money order or cash. [See Article G.10; Returned Check Fee].

15. **Billing Cycle Changes.** The district reserves the right to change its billing cycles if the workload requires such practice. After a billing period has been changed, bills shall be sent on the new change date unless otherwise determined by the district.

16. **Back-billing.** If a customer was undercharged, the district may back-bill the customer for the amount which was under billed. The amount back-billed shall not exceed six (6) months service unless such undercharge was the result of meter tampering, bypass, or diversion of service by the customer as defined in Section E.22 below.

17. **Disputed Bills.** In the event of a dispute between a customer and the district regarding any monthly bill, the dispute shall be resolved or disposed of in accordance with the Grievance Procedures set forth in the following Section E.18, except as follows:

(a) Notice of the bill dispute must be submitted to the district, in writing, and a payment equal to the customer's average monthly usage at current rates must be received by the district prior to the due date posted on the disputed bill.

(b) The customer shall not be required to pay the disputed portion of a bill which exceeds the amount of that customer's average monthly usage at current rates pending the completion of the determination of the dispute. For purposes of this subsection, the customer's average monthly usage shall be the average of the customer's usage for the preceding 12-month period. Where no previous usage history exists, consumption for calculating the average monthly usage shall be estimated on the basis of usage levels of similar customers under similar conditions.

(c) Notwithstanding any other section of this Rate Order, a customer's utility service shall not be subject to discontinuance for nonpayment of that portion of a bill under dispute pending the completion of the determination of the dispute. The customer is obligated to pay any undisputed amounts billed as established in Section E.13 of this Rate Order relating to Disconnection of Service.

18. **Grievance Procedures.** Any customer of the district or person demonstrating an interest under the policies of this Rate Order in becoming a customer shall have an opportunity to voice concerns or grievances to the district by the following means and procedures:

(a) The aggrieved party must first submit written notice to the general manager or authorized staff member stating the concern or grievance and the

desired result. The general manager shall investigate the matter and provide a response to the aggrieved party within fourteen (14) days after receipt the written notice of grievance.

(b) If the general manager does not resolve the grievance to the satisfaction of the aggrieved party, the party may appeal the general manager's decision, in writing, to the president of the board of directors for disposition. The written notice of appeal must be submitted to the district within seven (7) days after the date of the general manager's written response to the notice of grievance.

(c) Upon receipt of an appeal, the president of the board of directors shall review the request and determine the best means by which the grievance shall be resolved. The president may direct that a grievance be heard by the board for final disposition or by district staff appointed by the president and serving in an advisory capacity to the board. The president shall also determine a reasonable time and place for the grievance to be heard, but such hearing shall take place within sixty (60) days of the date that the president received the written notice of appeal. Final disposition by the board of directors shall be reported to the aggrieved party in writing.

(d) If under this subsection an aggrieved party contests a charge or fee as sole or partial basis of a grievance, the contested charge or fee shall be suspended until such time as the grievance is satisfactorily resolved by the general manager, the deadline for delivering an appeal to the president of the board has passed, or the board of Directors has rendered its final disposition of the dispute. This provision does not apply to disputed monthly bills pursuant to Section E.17 above.

19. **Inoperative Meters.** Water meters found inoperative will be repaired or replaced by the district within a reasonable time. If a meter is found not to register for any period, unless by-passed or tampered with, the district shall make a charge for units used, but not metered, for a period not to exceed three (3) months, based on amounts used under similar conditions during the period preceding or subsequent thereto, or during corresponding periods in previous years.

20. **Bill Adjustment Due To Meter Error.** The district shall test any customer's meter upon written request of the customer. In the event the meter tests within the accuracy standards of The American Water Works Association (AWWA), a meter test fee as prescribed in Article G of this Order shall be imposed. In the event the test results indicate that the meter is faulty or inaccurate, the test fee shall be waived, the meter shall be calibrated or replaced, and a billing adjustment may be made as far back as six (6) months. The billing adjustment shall be made to the degree of the meter's inaccuracy as determined by the test. The customer must complete and sign a Meter Test Authorization and Test Report prior to the test.

21. **Leak Adjustment Policy.**

(a) A single-family residential customer who receives a water bill showing metered consumption that exceeds the customer's expected volume at that service

address for up to two consecutive billing periods may apply for a bill adjustment under this section provided that:

(1) the General Manager determines that the volume exceeding the customer's expected volume was due to one or more water leaks at the service address that were not within the customer's control;

(2) the customer exercised due diligence in repairing the leak(s); and

(3) the customer has not received any billing adjustment under this section within the preceding 12 months.

(b) Within 60 days of having the leak(s) repaired, the customer must submit documentation in a form acceptable to the General Manager showing all water leaks on the customer's property that contributed to the excess volume have been repaired.

(c) For purposes of this section, the General Manager will determine a customer's expected volume for a given billing period by averaging the customer's bill for the previous 12 months.

(d) If the General Manager determines that the customer qualifies for a billing adjustment pursuant to this section, the General Manager will recalculate the bill for up to two consecutive billing periods and charge the customer for the expected monthly volume and one-half (½) of the excess volume at the district's standard rates.

(e) A customer who applies for and receives an adjustment pursuant to this section may not appeal the amount of the adjusted bill to the Board of Directors.

(f) A customer who applies for but does not receive an adjustment pursuant to this section may appeal the General Manager's final decision to the Board of Directors.

22. **Meter Tampering and Diversion of Service.** All meters connected to the district's water system shall be provided, owned, installed and maintained by the district. Meter-tampering, by-pass and diversion of service are prohibited. For purposes of this Rate Order, meter tampering, bypass, or diversion shall be defined as tampering with a district meter or service equipment causing damage or unnecessary expense to the district, bypassing the same, or other instances of diversion of service, such as:

(a) removing or altering district equipment, including locks or shut-off devices installed by the district to discontinue service;

(b) physically disorienting a meter;

(c) attaching objects to a meter to divert service or to by-pass;

(d) inserting objects into a meter;

(e) other electrical and/or mechanical means of tampering with, by-passing, or diverting service;

(f) connecting or reconnecting service without district authorization; or

(g) connecting to the service line of adjacent customers or of the district.

The burden of proof of meter-tampering, by-passing or diversion is on the district. In addition to any other penalties or remedies provided for in this Rate Order or under Texas civil law, persons who tamper with meters or divert service and unauthorized users of district services may be prosecuted to the extent allowed by law under Texas Penal Code § 28.03 (Criminal Mischief) or § 31.04 (Theft of Service) as appropriate.

23. **Damage to District Facilities.**

(a) Damage to Meter and Appurtenances. No person other than a duly authorized employee or agent of the district shall be permitted to tap or make any connection to the district's water system, except for emergency fire-fighting purposes, or to make any repairs or additions to or alterations to any meter, meter box, tap, pipe, cock or other fixture connected with the water system. The district reserves the right, immediately and without notice, to remove the meter or disconnect water service to any customer who damages district facilities and to assess an equipment damage fee under Section G.13 of this Rate Order.

(b) Right to Repair. The district reserves the right to repair any damage to the water and sewer systems without prior notice and to assess a charge equal to the cost to repair the damage against any customer that caused the damage, in addition to any such penalties as are provided for by law and this Rate Order.

24. **Meter Relocation.** The district shall permit the relocation of meters or services provided that:

(a) an easement for the proposed location has been granted to the district;

(b) service capacity is available at the proposed location;

(c) service was previously provided by the district at the proposed location;

(d) the property has to be a continuous piece of property; and

(e) the customer pays a Meter Relocation Fee [See Section G.16].

25. **Prohibition of Multiple Connections to a Single Tap.** No more than one (1) residential, commercial or industrial service connection is allowed per meter. The district may permit the owner of an apartment building, mobile home/RV park or other commercial account to apply for a single meter as a "Master-Metered Account" pursuant to Section E.2(b)(4) of this Rate Order. Any unauthorized sub metering or diversion of service shall be considered a "multiple connection" and subject to disconnection of service. If the district has sufficient reason to believe a multiple connection exists, the

district shall discontinue service under the Disconnection with Notice provisions in Section E.13(a) above.

26. **Customer Responsibilities.**

(a) District Access to Meters. Customers shall allow district employees and designated representatives access to meters for the purpose of reading, testing, installing, maintaining and removing meters and using utility cutoff valves If access to a meter is hindered so that the district is prevented from the reading of the meter, an estimated bill shall be rendered to the customer for the month and a notice of the hindrance shall be sent to the customer. If access is denied for three (3) consecutive months after notice to the customer, then service shall be discontinued and the meter removed with no further notice. [Section E.3(d)].

(b) Compliance with On-Site Service and Plumbing Requirements. Customers shall be responsible for complying with all district, local, state and federal codes, requirements and regulations concerning on-site service and plumbing facilities.

(1) All connections shall be designed to ensure against back-flow or siphonage into the district's water system. In particular, livestock water troughs shall be plumbed above the top of the trough with an air space between the discharge and the water level in the trough. [30 TAC § 290.46].

(2) The use of pipe and pipe fittings that contain more than 8.0% lead or solder and flux that contain more than 0.2% lead is prohibited for any plumbing installation or repair of any residential or non-residential facility providing water for human consumption and connected to the district's facilities. Customer service pipelines shall be installed by the applicant. [30 TAC § 290.46].

(3) Service shall be discontinued without further notice when installations of new facilities or repair of existing facilities are found to be in violation of this regulation until such time as the violation is corrected.

(c) Payment on Multiple Accounts. A customer owning more than one service connection shall keep all payments current on all accounts. Failure to maintain current status on all accounts shall be enforceable as per Service Application and Agreement executed by the customer.

(d) Extent of District Ownership and Maintenance. The district's ownership and maintenance responsibility of water distribution and metering equipment shall end at a customer’s meter. Therefore, all water usage registering upon and/or damages occurring to the metering equipment owned and maintained by the district shall be subject to charges pursuant to this Rate Order.

(e) Cut-off Valve Requirement. The district shall require each customer to have a cut-off valve on the customer's side of the meter for purposes of isolating the customer's service pipeline and plumbing facilities from the district's water pressure.

The valve shall meet AWWA standards (a ball valve is preferred). The customer's use of the district's curb stop or other similar valve for such purposes is prohibited. A customer shall be subject to charges for any damage to the district's meter or other service equipment. A cut-off valve may be installed as a part of the original meter installation by the district.

27. **Prohibited Plumbing Practices.**

(a) No direct connection between the public drinking water supply and a potential source of contamination is permitted. Potential sources of contamination will be isolated from the public water system by an air gap or an appropriate backflow prevention device.

(b) No cross-connection between the water supply and a private water system is permitted. These potential threats to the public drinking water supply must be eliminated at the service connection by the installation of an air-gap or a reduced pressure-zone backflow prevention device.

(c) No connection which allows water to be returned to the public drinking water supply is permitted.

(d) No pipe or pipe fitting which contains more the eight percent (8.0%) lead may be used for the installation or repair of plumbing at any connection which provides water for human use.

(e) No solder of flux which contains more than two-tenths of one percent (0.2%) lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

28. **Water Service Connections.**

(a) Applications for water service connections shall be filed with the district on approved forms. Applicants shall meet all district requirements for service, including the grant of any necessary water and sewer easements (as determined by the district) and the installation of a cut-off valve at the expense of the service applicant.

(b) No person, other than district employees or designated representatives, shall be permitted to tap or make any connection with the mains or service lines of the district’s water system, or make any repairs or additions to or alterations in any tap, pipe, cock or other fixture connected to a water service line.

(c) A customer must allow his or her property to be inspected for possible cross-connections and other undesirable plumbing practices. These inspections will be conducted by the district prior to initiating service and may be conducted periodically thereafter. All inspections will be conducted during the district’s normal business hours.

(d) The customer must, at the customer’s expense, properly install a backflow prevention device as required by the district.

(e) All costs to extend or oversize district water mains or service lines to serve any residential or commercial user or any undeveloped area within the district shall be the sole responsibility of the property owner and/or developer requesting service.

29. **Standards for Customer Service Lines.** The following standards govern the installation of customer service lines for water service to residences or commercial buildings within the district:

(a) All new residential or commercial connections to the district's water system shall be made in accordance with previous Section E.28 and the Rules and Regulations for Public Water Systems issued by the Commission as set forth in Subchapter D, Chapter 290, Title 31 of the Texas Administrative Code. In the event of a conflict between the provisions of Section E.28 and the Commission's Rules and Regulations for Public Water Systems, the more stringent requirements shall apply.

(b) A district-owned water meter and a district-approved meter box shall be installed by the district or its designated representative.

(c) Potable water supply piping, water discharge outlets, backflow prevention devices, or similar equipment shall not be located so as to make possible the submergence of such equipment in any contaminated or polluted substance.

(d) Lawn sprinkling systems shall be equipped with an approved Reduced Pressure Zone Assembly (RPZ) installed in the customer side of the meter. The RPZ shall be installed at least twelve (12") above the surrounding ground.

(e) The district's water system shall be protected from swimming pool makeup water (evaporation or leakage) by means of an approved backflow prevention device or an adequate air gap.

30. **Standard Details for Service Facilities.** All water and sewer service facilities shall be constructed in accordance with the Water Standard Details as may be adopted and revised from time to time. In the event of a conflict between these standard details and any other provision of this Rate Order, the standard details shall apply.

31. **Penalties and Enforcement.**

(a) Penalties. Any person violating any provision of this Section E, as amended, may be subject to a fine of not more than $500.00 for each violation. Each day that a violation of this Section E is permitted to exist shall constitute a separate violation. A penalty under this section is in addition to any other penalty or remedy provided by the laws of the State of Texas or this Rate Order.

(b) Other Penalties. The district may disconnect water or sewer service to any customer discharging prohibited wastes. .

(c) Liability for Costs. Any person violating any provision of this Section E, as amended, shall become liable to the district for any expense, loss or damage

occasioned by the district by reason of such violation and the district's enforcement thereof. If the district prevails in any suit to enforce these rules and regulations, it may, in the same action, recover any reasonable fees for attorneys, expert witnesses, and other costs incurred by the district before the court.

(d) No Waiver. The failure on the part of the district to enforce any section, clause, sentence, or provision of this Rate Order shall not constitute a waiver of the right of the district later to enforce any section, clause, sentence, or provision of this Rate Order.

32. **Minimum Waterline Size.** All new waterlines installed and connected to the District's water system must have a minimum internal diameter of 6 inches unless smaller diameter pipe is recommended by the District's engineer and approved by the District's General Manager.

ARTICLE F

DEVELOPER, SUBDIVISION AND NON-STANDARD SERVICE REQUIREMENTS

[Amended Aug 15, 2023, Ord 2023-002]

1. **District Limitations.** All applicants shall recognize that the district must comply with state and federal laws and regulations as promulgated from time-to-time, and with covenants of current indebtedness. The district is not required to extend retail utility service to any applicant requesting standard service to a lot or tract in a subdivision where the developer responsible for the subdivision has failed to comply with the requirements of the district's subdivision service extension policies and non-standard service requirements set forth in this section.

2. **Purpose.** It is the purpose of this section to define the process by which the specific terms and conditions for service to subdivisions and other kinds of non-standard service are determined, including the non-standard service applicant's and the district's respective costs. For purposes of this section, the term "applicant" shall refer to a developer or person that desires to secure non-standard service from the district. The applicant must be the same person or entity that is authorized to enter into a contract with the district setting forth the terms and conditions pursuant to which non-standard service will be furnished to the property. In most cases, the applicant will be the owner of the property for which non-standard service is sought. An applicant other than the property owner must furnish evidence to the district that the applicant has authority to request non-standard service on behalf the owner, or that it otherwise has authority to request non-standard service for the property.

3. **Application of Rules.** This section is applicable to subdivisions, additions to subdivisions, commercial, industrial and governmental developments, and any situation where additional service facilities are required to serve a single tract of property. Examples of non-standard service to a single tract of land include, without limitation, service requests that require road bores, extensions to the district's distribution system, service lines exceeding two inches (2") internal diameter in size, service lines exceeding twenty feet (20') in length, or which require a meter larger than 5/8 x 3/4" for service. Most nonresidential service applications will be considered non-standard by the district at its sole discretion. For purposes of this Rate Order, applications subject to this section shall be defined as "non-standard." This section may be altered or suspended for facility expansions constructed by the district at its expense. The district's general manager shall interpret, on an individual basis, whether or not an applicant's service request shall be subject to all or part of the conditions of this section. For purposes of this section the term "project" includes subdivisions, additions to subdivisions, and commercial, industrial and governmental developments.

This section sets forth the general terms and conditions pursuant to which the district will process non-standard service requests. The specific terms and conditions pursuant to which the district will provide non-standard service in response to any request will depend upon the nature of such request and may be set forth in a contractual

agreement to be entered between the district and applicant. Unless specifically approved by the district's Board of Directors, a non-standard service contract may not contain any terms or conditions that conflict with this Rate Order.

4. [Reserved For Future Use]

5. **Non-Standard Service Application.** The applicant shall meet the following requirements prior to entering into a Non-Standard Service Contract with the district:

(a) The applicant shall complete and submit a Non-Standard Service Application to the district, while giving special attention to that portion entitled "Special Service Needs of the Applicant."

(b) Simultaneous with submission of the Non-Standard Service Application, the applicant must submit three (3) copies of the proposed final plat showing the applicant's requested service area for approval by the district. The final plat must be approved by all governmental authorities exercising jurisdiction over lot sizes, sewage control, drainage, right-of-way, and other service facilities except to the extent Section E.4 above is applicable. Plans, specifications, and special requirements of such governmental authorities shall be submitted with the plat. Applicants for single taps that require an extension or oversizing of district facilities shall be required to submit maps or plans detailing the location of the requested extension and details of demand requirements.

(c) The applicant shall pay a Service Investigation Fee to the district in accordance with the requirements of Section G for purposes of paying the district's administrative, legal and engineering fees. In the event such a fee is not sufficient to pay all expenses incurred by the district, the applicant shall pay to the district all remaining expenses that have been or will be incurred by the district, and the district shall have no obligation to complete processing of the request until all remaining expenses have been paid.

(d) If after completing its service investigation the district determines that the applicant's service request is for property located wholly or partially outside the district's certificated service area, the district may still extend service provided that:

(1) the requested service area is not in an area receiving similar service from another retail utility;

(2) the requested service area is not within another retail utility's certificated service area; and

(3) the district's boundaries and/or CCN, as appropriate, shall be amended to include the entirety of the applicant's property for which service is requested and the applicant shall pay all costs incurred by the district in amending its CCN, including but not limited to engineering and professional fees. If the service location is contiguous to or within one-fourth (¼) mile of the district's certificated service area, the district may extend service prior to

completing the amendment to its CCN, but will do so only upon applicant's legally enforceable agreement to fully support such amendment (including but not limited to payment of all professional fees, including legal, surveying and engineering fees incurred by district in securing the amendment).

6. **Facilities Design.**

(a) Design Requirements. Upon receipt of a completed Non-Standard Service Application and Service Investigation Fee, the district shall study the design requirements of the applicant's required facilities before preparing a Non-Standard Service Contract in accordance with the following:

(1) The district's consulting engineer shall design, or review and approve, plats and plans for all on-site and off-site service facilities for the applicant's requested service in accordance with the district's specifications and any applicable municipal or other governmental codes and specifications. The consulting engineer shall notify the applicant in writing of any necessary changes to applicant's proposed plats and/or plans. Allow a minimum of thirty (30) days for the review process.

(2) The consulting engineer shall ensure all facilities for any applicant meet the demands for service as platted and/or requested in the plans or plat submitted by the applicant. The district reserves the right to upgrade and/or oversize the planned service facilities to meet future customer demands on condition that the applicant shall be reimbursed the additional expense of such upgrading and/or oversizing in excess of the applicant's facility requirements.

(3) Water and sewer line size and location will be determined by the district, whose determination is final.

(4) All water line material fittings shall conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) standard 61 and must be certified by an organization accredited by ANSI and not less than DR18 C900 PVC.

(5) Any water line extensions constructed by an Applicant shall be constructed completely across (property line to property line) the side of the subdivision or development which is contiguous and adjacent to the road or street on which the main entrance to the project is located.

(6) The water system shall be designed to afford effective circulation of water with a minimum of dead ends. All dead-end mains shall be provided with acceptable flush valves and discharge piping. All dead-end lines less than two inches (2") in diameter will not require flush valves if they end at a customer service connection. The district may permit dead ends when necessary as a stage in the growth of the water system, but they shall be located and arranged to ultimately connect the ends to provide circulation. [30 TAC § 290.44(d)(6)].

7. **Prepayment of Certain Fees Required.** An applicant for non-standard service shall pre-pay certain fees in accordance with the following:

(a) On or before the date that a Non-Standard Service Contract or a Three Way Contract is executed for the construction of service facilities required to provide service to the applicant's project or a phase thereof, the applicant shall deposit with the district a sum of money equal to one-half (½) of the Connection Fee required under Section G.5 of this Rate Order multiplied by the total number of lots to be developed for the project or phase, as applicable, pursuant to the approved final plat. Payment of the foregoing sum is a mandatory prerequisite to the commencement of construction of the project.

(b) Before the applicant's project or a phase thereof is approved and accepted by the district, the applicant shall pay to the district the remaining fees due the district which have not been paid by the applicant, including without limitation the remaining balance of the fees due under the previous Section F.7(a) of this Rate Order. This requirement is a mandatory prerequisite to the initiation of water service to the project pursuant to a Non-Standard Service Contract. Upon acceptance of the Project by the district, the district shall apply any Reserved Service Fee deposited by the applicant pursuant to this Rate Order.

(c) Subsequent purchasers of individual lots shall pay the Deposits, required under Section G.3 of this Rate Order, upon applying to the district for activation of service to individual lots.

8. **Non-Standard Service Contract.** Applicants requesting or requiring non-standard service shall be required to execute a written Non-Standard Service Contract prepared by the district. The district shall prepare and deliver the Non-Standard Service Contract to the Applicant within a reasonable time period as determined by the complexity of the project. The Non-Standard Service Contract shall define the terms of service prior to construction of required service facilities for the project and may include, without limitation, provisions for the following:

(a) payment of all costs associated with required administration, design, construction and inspection of facilities for water and/or sewer service to the project;

(b) procedures by which the applicant shall accept or deny a contractor's bid, thereby committing to continue or discontinue the project;

(c) amount and payment of capital contributions required by the district in addition to other costs required under this section;

(d) reservation of service capacity for the applicant and duration of reserved service with respect to the impact the applicant's service demand will have upon the district's system capability to meet other service requests;

(e) terms by which the applicant shall indemnify the district from all third party claims or lawsuits arising from or related to the project;

(f) terms by which the applicant shall dedicate all constructed service facilities to the district and by which the district shall assume operation and maintenance responsibility, including any enforcement of warranties related to construction of the service facilities;

(g) terms by which the applicant shall grant title or easements to the district for rights-of-way, constructed service facilities, and service facility sites, and/or terms by which the applicant shall provide for the securing of required rights-of-way and sites;

(h) terms by which the Board of Directors shall review and approve any applicable Non-Standard Service Contract and any other contract related to the project pursuant to current rules, regulations and policies of the district; and

(i) terms by which the district shall administer the applicant's project with respect to:

(1) the design of the applicant's service facilities;

(2) securing and qualifying bids;

(3) execution of the contract;

(4) selection of a qualified bidder for construction;

(5) dispensing advanced funds for construction of facilities required for the applicant's service;

(6) inspecting construction of facilities; and

(7) testing facilities and closing the project.

The district and Applicant must execute a Non-Standard Service Contract before construction of service facilities for the project is commenced. In the event that the Applicant commences construction of any such facilities prior to execution of the contract, the district may refuse to provide service to the applicant (or require full costs of replacing/repairing any facilities constructed without prior execution of the contract from any person buying a lot or home from applicant), require that all facilities be uncovered by the applicant for inspection by the district, require that any facilities not approved by the district be replaced, or take any other lawful action determined appropriate by the Board of Directors.

9. **Property and Right-of-Way Acquisition.** With regard to construction of facilities, the district shall require private utility easements on private property as per the following conditions:

(a) If the district determines that easements or facility sites outside the Applicant’s property are required, the Applicant shall use all due diligence to secure easements or facility sites in behalf of the district. All easements and property titles

shall be researched, validated, and recorded by the district at the expense of the Applicant.

(b) All costs associated with facilities that must be installed in public rights-of-way on behalf of the Applicant, due to the inability of the applicant to secure private utility easements, shall be paid by the Applicant. The district reserves the right to secure utility easements or facility sites by eminent domain on its own initiative. The Applicant shall pay all costs, including legal and other professional fees, and the condemnation award in the event the district determines that a public necessity exists to secure private utility easements or facility sites in order to provide service to the Applicant's project through eminent domain proceedings.

(c) The district shall require an exclusive dedicated utility easement on the applicant's property (as required by the size of the planned facilities and as determined by the district) and title to property required for other on-site facilities.

(d) Easements and facilities sites shall be prepared for the construction of the district's pipeline and facility installations in accordance with the district's requirements and at the expense of the Applicant.

10. **Contractor Selection & Qualification.**

(a) Selection. The district shall choose one of the following methods for selection of a contractor to construct line extensions and/or water distribution facilities required by the district to serve a development:

(1) The district reserves the right to use its approved contractor for the facilities project.

(2) The district's consulting engineer shall advertise for bids for the construction of the applicant's proposed facilities in accordance with generally accepted practices. The applicant shall provide the district with a sufficient number of plans and specifications, without charge, for prospective bidders. The district reserves the right to reject any bid or contractor, the district shall generally award the contract to the lowest and best bidder in accordance with the criteria set forth in the following subsection 11(b). After the applicant has executed the Non-Standard Service Contract, the applicant shall pay to the district all costs necessary for completion of the project's service facilities prior to construction and in accordance with the terms of the Non-Standard Service Contract.

(b) Qualification Criteria.

(1) the applicant shall sign the Non-Standard Service Contract noting applicant's willingness to proceed with the project and shall pay all costs in advance of construction associated with the project;

(2) the contractor shall provide an adequate bid bond under terms

acceptable to the district;

(3) the contractor shall secure adequate performance and payment bonding for the project under terms acceptable to the district;

(4) the contractor shall supply favorable references acceptable to the district;

(5) the contractor shall qualify with the district as competent to complete the work; and

(6) the contractor shall provide adequate certificates of insurance as required by the district.

11. **Construction.**

(a) All road work shall be completed in accordance with applicable state, county and/or municipal standards prior to construction of project service facilities to avoid future problems resulting from road right-of-way excavation and completion. Subject to approval of the requisite authority, road encasements may be installed prior to road construction to avoid road damage during construction of applicant's service facilities.

(b) The district shall, at the expense of the applicant, inspect the service facilities to ensure compliance with district standards.

(c) Construction plans and specifications shall be strictly adhered to, but the district reserves the right to revise any specifications by change-order due to unforeseen circumstances during the design phase or to better facilitate construction and/or operation of the project service facilities. All change-order amounts shall be charged to the applicant.

12. **Dedication and Acceptance of Service Facilities.** Upon proper completion and testing of an applicant's on-site and off-site service facilities, final inspection and approval thereof by the district, and applicant's payment to the district of all required fees and charges in connection therewith, the applicant shall dedicate the service facilities to the district by an appropriate legal instrument approved by the district's attorney, and the district shall accept the dedication. The district shall thereafter own the service facilities subject to applicant's maintenance bond in an amount of not less than twenty percent (20%) of the total construction cost of the service facilities and for a term of not less than two (2) years. The maintenance bond is subject to prior approval by the district's attorney.

13. **Service Within Subdivisions.** The district's obligation to provide service to any customer located within a project governed by this Section F is limited to the service specified in the NSC. The Applicant is responsible for paying for all costs necessary to provide non-standard service to a project as determined by the district under the provisions of this Rate Order, and in particular, the provisions of this section and the NSC. Should the applicant fail to pay these costs, the district has the right to require payment

of these costs by any one or more of the persons purchasing lots within such subdivision before the district is obligated to provide water service to the subdivision. In addition, the district may elect to pursue any remedies provided by the Non-Standard Service Contract and the laws of Texas.

14. **Service Within RV Parks.** The district's obligation to provide service to any customer located within a project governed by this Section F is limited to the service specified in the NSC. The Applicant is responsible for paying for all costs necessary to provide non-standard service to a project as determined by the district under the provisions of this Rate Order, and in particular, the provisions of this section and the NSC. Service to RV Parks will require the following:

(a) a residential house on the same property as an RV Park shall have a separate standard meter;

(b) the RV Park shall receive service from a master meter (meter size shall be approved by the District's Engineer);

(c) any RV Park with sewer facilities shall have an RPZ (Reduced Pressure Zone) backflow prevention assembly installed on the master meter to prevent a possible cross-connection (RPZ will be maintained by the applicant and will require annual testing in accordance with applicable District Policies);

(d) the RV Park property will have common ownership;

(e) the RV Park shall meet all applicable governmental rules and regulations;

(f) system improvements as may be determined by the District's Engineer may be required to provide adequate service to the master meter.

15. **Pro-Rata Reimbursement for Commercial and Institutional Developments and for Residential Subdivisions.** The district may from time-to-time negotiate and enter into a pro-rata reimbursement agreement with developers applying to the district for non-standard service to commercial or institutional developments or to residential subdivisions.

(a) The development or subdivisions must satisfy the following conditions:

(1) the developer applicant (hereinafter called the "constructing applicant") must construct a waterline extension or other off-site service facilities to receive service from the district's water system; and

(2) the waterline extension and/or off-site service facilities must be over-sized so the district has capacity to serve additional and future customers in addition to the capacity required by the constructing applicant's development or subdivision.

(b) The district shall assess a five percent (5%) administrative fee for the administration of pro-rata fees collected by the district from subsequent connecting service applicants, which shall be deducted from pro-rata reimbursements before remittance to the constructing applicant.

(c) The pro-rata reimbursement agreement shall contain the following terms:

(1) the term of the agreement shall not exceed five (5) years unless a different term is recommended by the district manager or engineer and approved by the Board of Directors;

(2) the district shall collect reimbursement funds from non-standard service applicants only because individual standard residential service applicants are exempt;

(3) total reimbursement collected from connecting service applicants shall not exceed eighty percent (80%) of the actual cost of the waterline extension and/or other off-site service facilities constructed by the constructing applicant; and

(4) the amount due to the constructing applicant from a future connecting non-standard service applicant shall be based on one of the following formulas as determined by the district's engineer:

[Formula #1 to Follow]

Formula #1:

Acres in connecting applicant's project
——————————————— **(x)** Actual cost of off-site facilities **(=)** Pro-Rata Fee
Total potential acres served by off-site
facilities of constructing applicant.
(less)
Total acres in constructing applicant's project.

EXAMPLE:

$$\frac{100\textbf{(a)}}{500\textbf{(b)} \ (-) \ 100\textbf{(c)}} \quad (x) \quad \$50{,}000.00\textbf{(d)} \quad (=) \quad \$12{,}500.00\textbf{(e)}$$

Where:

(a) = Acres in connecting applicant's project.

(b) = Total potential acres served by the off-site facilities constructed by the constructing applicant as determined by the district's consulting engineer.

(c) = Total acres in the constructing applicant's project.

(d) = Actual cost of the off-site facilities.

(e) = Pro-rata fee to be collected from any water service applicant that connects or desires to connect to the off-site facilities.

NOTE: "Off-site facilities" includes waterline extensions and/or other off-site service facilities.

[Formula #2 to Follow]

Formula #2:

The construction cost (including professional fees and other direct soft costs) of the off-site waterline extension divided by the number of meter or meter equivalents in the constructing applicant's waterline extension. The resulting quotient is the cost per meter. The cost per meter is multiplied by the quotient of the distance from the beginning point of the off-site waterline extension to the connection point of the project divided by the total length of the waterline extension. The resulting quotient is then multiplied by 100 to convert the same to a percentage. The cost per meter is multiplied by the percentage to determine the pro-rata fee due per meter in the connecting project. The pro-rata fee per meter is then multiplied times the number meters or meter equivalents in the connecting project to determine the total pro-rata fee due from the connecting project.

EXAMPLE:

C = total construction cost of the waterline extension constructed by the constructing applicant including and contribution or credits issued by the district for oversizing. Construction includes professional fees and other direct soft costs.

L = total number of meters or meter equivalents in the waterline extension constructed by the first developer.

D = the total distance from location of the connection point of the pipeline extension to the district's water distribution system or the district's sewer collection system to the point of connection to the constructing applicant's project.

D2 = the total distance from the location of the connection point of the waterline extension to the district's water distribution system or the district's sewer collection system to the connecting applicant's connection point to the waterline extension.

L2 = number of meters or meter equivalents in the connecting project.

C / L = construction cost per meter or meter equivalent constructing project (QI)

C/L x (D / D2) = pro-rata payment due for each meter or meter equivalent in the connecting project x L2 = total pro-rata fee

Assume a construction cost (C) of $250,000.00
Assume (L) is 280 meters or meter equivalents
Assume that (D) is 5,000 feet
Assume that (D2) is 2,500 feet
Assume that (L2) is 138
$250,000.00 / 280 meters = $892.86 ;

5,000' / 2,000' = 0.40 x 100 = 40%

$892.86 x 40% = $357.14 x 138 = $49,285.32 total pro-rata fee

[Remainder of page intentionally left blank.]

16. **Pro-Rata Reimbursement for Individual Standard Residential Service Applicants.** The district may from time to time negotiate and enter into a pro-rata reimbursement agreement with a standard residential service applicant who must construct a waterline extension from the district's water system to receive service (hereinafter called the "constructing applicant").

(a) The development or subdivisions must satisfy the following conditions:

(1) the constructing applicant must construct a waterline extension to receive service from the district's water system; and

(2) the waterline extension must be over-sized so the district has capacity to serve subsequent connecting service applicants in addition to the capacity required by the constructing applicant.

(b) The district shall assess a five percent (5%) administrative fee for the administration of pro-rata fees collected by the district from subsequent connecting service applicants, which shall be deducted from pro-rata reimbursements before remittance to the constructing applicant.

(c) The pro-rata reimbursement agreement shall contain the following terms:

(1) the term of the agreement shall not exceed ten (10) years unless a different term is recommended by the district manager or engineer and approved by the Board of Directors;

(2) the district shall collect reimbursement funds from all subsequent connecting service applicants including individual standard residential service applicants and non-standard service applicants;

(3) total reimbursement funds collected from connecting service applicants shall not exceed eighty percent (80%) of the actual cost of the waterline extension constructed by the constructing applicant; and

(4) the amount due to the constructing applicant from a subsequent connecting service applicant shall be based on the following formula:

[Formula to Follow]

Formula: The construction cost (including professional fees and other direct soft costs) of the off-site waterline extension divided by the number of linear feet (LF) of the waterline extension. The resulting quotient is the cost per LF. The cost per LF is multiplied 1,000 by the quotient of the distance from the beginning point of the off-site pipeline to the connection point of the project divided by the total length of the pipeline extension. The resulting quotient is then multiplied by 100 to convert the same to a percentage. The cost per meter is multiplied by the percentage to determine the pro-rata fee due per meter in the connecting project. The pro rata fee per meter is then multiplied by the number of meter equivalents requested by the connecting service applicant to determine the total pro-rata fee due.

EXAMPLE:

C = total construction cost of the waterline extension constructed by the first individual including any contribution or credits issued by the district for oversizing. Construction includes professional fees and other direct soft costs.

LF = total number of linear feet of waterline in the project constructed by the constructing applicant.

LF x 1000 = total number of 1,000 linear feet of waterline in the project constructed by the constructing applicant.

C / LF = construction cost per LF of the project

C/(LF/1000) = pro-rata payment due for each meter or meter equivalent that connects to and obtains service from the waterline extension (up to a maximum total reimbursement amount of 80% of the total waterline extension construction cost).

Assume a construction cost (C) of $450,000.00
Assume (LF) is 10,000 feet
Assume that (LF/1000) is 10

$450,000.00 / 10 = $45,000.00 total per meter pro-rata fee due to the original individual

ARTICLE G

RATES AND SERVICE FEES

[Amended May 17, 2022, Ord 2022-001 and Ord 2022-002; Amended Nov. 21, 2023, Ord 2023-003; Amended Jan. 16, 2024, Ord 2024-001; Amended Aug. 20, 2024, Ord 2024-003]

1. **Customer Classes.** All district customers shall be grouped into the following classes:

(a) Residential Customers. District customers receiving standard service to a single-family or multi-family residence are classified as residential customers.

(b) Commercial Customers. District customers receiving non-standard service to a commercial business or building are classified as commercial customers.

(c) Senior Customers. District customers 65 years of age or older who apply for or receive standard service are classified as senior customers. Senior customers shall pay the monthly Base Rate stated in Section G.6(a1). Service applicants or existing customers who qualify for this classification must show proof of age (i) by producing a valid Texas driver's license or other state issued photo identification card or (ii) by executing an Age Verification Affidavit before a Notary Public.

2. **Service Investigation Fee.** The district shall conduct a service investigation for each service application submitted to the district. An initial determination shall be made by the district, without charge, as to whether the request is for standard or non-standard service. An investigation shall then be conducted by the district and the results reported under the following terms:

(a) Standard Service Requests. All standard service requests shall be investigated without charge and all applicable costs for providing service shall be quoted in writing to the applicant within ten (10) working days of application.

(b) Non-standard Service Requests. All non-standard service requests shall be subject to a Service Investigation Fee in the following amounts, unless the district determines otherwise, in which case the district shall charge a Service Investigation Fee appropriate to the project and of sufficient amount to cover all administrative, legal and engineering costs associated with an investigation of the district's ability to provide service to the applicant's project, including an initial evaluation fee of $500.

Note: The district Engineer may determine more initial evaluation fees are required. Additionally, larger and more complex developments will require additional fees including professional fees by the district Engineer and Attorney.

3. **Deposits.**

(a) Initial Payment and Amount. At the time an application for service is

approved, the applicant shall pay a Deposit to be held by the district, without interest, until settlement of the customer's final bill. The Deposit will be used to offset unpaid charges or bills.

(1) *Residential Service Applicants:* The Deposit for residential water service is $250.00 for each service unit.

(2) *Commercial Service Applicants.* The Deposits for commercial and nonresidential water service, including Master Metered Accounts, shall not exceed an amount equivalent to one-sixth of the estimated annual billings as determined by the district. If actual monthly billings of a commercial or nonresidential customer are more than twice the amount of the estimated billings at the time service was established, a new deposit amount may be calculated and an additional deposit may be required to be made within fifteen (15) days after the issuance of written notice.

(b) Reestablishment of Deposit. Every service applicant who has previously been a customer of the district and whose service has been discontinued for nonpayment of bills, meter tampering, bypassing of meter or failure to comply with applicable state regulations or regulations of the district shall be required, before service is resumed, to pay all amounts due the district or execute a deferred payment agreement, if offered, and shall be required to pay a deposit if the district does not currently have a deposit from the customer.

(c) Refund of Deposit. If service is not connected, or after disconnection of service, the district shall refund the service applicant's or customer's deposit, if any, in excess of the unpaid bills for service furnished. In the event that a surplus of Five Dollars ($5.00) or more exists after the final bill is paid, the balance of the Deposit will be paid to the customer within forty-five (45) days provided the customer has given the district written notice of a forwarding address. All requests for Deposit refunds shall be made in writing and must be delivered to the district within ninety (90) days of termination of service. In the event that an outstanding balance exists after the Deposit is applied, the district shall attempt to collect the outstanding balance by all lawful means available.

(d) Transfer of service. A transfer of service from one service location to another within the district's service area shall not be deemed a disconnection within the meaning of this subsection, and no additional deposit may be required unless permitted by this section.

4. **Easement Fee.** When the district determines that private right-of-way easements and/or easements for facility sites are necessary to provide service to an applicant, the applicant shall be required to make a good faith effort to secure such easements on behalf of the district or pay all costs incurred by the district to validate, clear and obtain such easements, including but not limited to legal fees and court costs, in addition to a Connection Fee otherwise required pursuant to the provisions of this Rate Order. [See Sections E.2(c)(2) and F.7(a)].

5. **Connection Fees.** The district shall charge a Connection Fee for service as follows:

(a) Standard Residential and Non-Standard Service. The Connection Fee for standard residential and non-standard commercial service shall include all labor, materials for construction, installation, or inspection of a tap or connection to the district's water system, including all necessary service lines and a meter. The Connection Fee shall be charged on a per meter basis in the following amounts:

Meter Size	***Connection Fee***
5/8" x 3/4"	$ 5,000.00
1"	$ 7,500.00
1½"	$10,000.00
2"	$15,000.00

Prior to the installation of any facilities to which Non-standard Connection Fees apply, the applicant must execute a non-standard service contract with the district.

(b) Extraordinary Expenses. In addition to a Deposit and Connection Fee, the district may charge the applicant for any extraordinary expenses such as road bores, street crossings, line extensions and system improvements and pipeline relocations under Section E.2(b)(6) of this Rate Order.

(c) Development Improvements Fee. In addition to Deposits and Connection Fees, applicants developing subdivisions shall be required to contribute capital in an amount projected to defray the cost to up-grade major system facilities to meet the growth demands of developments and multiple connections. This fee shall be assessed prior to providing or reserving service on a per service connection basis and shall be assigned and restricted to the tap/lot for which the service was originally requested. The minimum Development Improvements Fee per service connection is $1,000.00.

6. **Monthly Charges.**

(a) Base Rate. The Base Rate is that portion of a customer's monthly bill which is paid for the opportunity of receiving utility service, excluding standby fees and reserved service charges, which does not vary due to changes in service consumption. The standard 5/8" x 3/4" meter (as per American Water Works Association maximum continuous flow specifications) is used as a base multiplier for the Base Rate amount. Therefore, a customer's Base Rate charge is based on the number of 5/8" x 3/4" meters equivalent to the size of that customer's meter. The district's monthly Base Rates for water service and meter size equivalents are as follows:

[Remainder of page intentionally left blank.]

METER SIZE	5/8" x 3/4" METER EQUIVALENTS	MONTHLY BASE RATE
5/8" x 3/4"	1.0	$ 35.00
1"	2.5	$ 87.50
1½"	5.0	$175.50
2"	8.0	$280.00

(a1) Senior Customer Base Rate. Senior customers shall pay a base rate fixed at $29.00 per month in addition to the Gallonage Charges set forth in Section G.6(b).

(b) Gallonage Charge. In addition to the Base Rate, all customers shall be assessed a Gallonage Charge at the following rates for water usage during any one monthly (1) billing period:

0-5,000 gallons	$ 5.50 per 1,000 gallons
5,001-10,000 gallons	$ 6.50 per 1,000 gallons
10,001-15,000 gallons	$ 8.00 per 1,000 gallons
Over 15,000 gallons	$10.00 per 1,000 gallons

(c) Regulatory Assessment. In accordance with TCEQ regulations, the district shall collect from each customer a regulatory assessment equal to 0.5% of the monthly charge for water and sewer service. [See 30 TAC § 291.76(d)(3)].

7. **Late Payment Fee.** A one-time penalty of $20.00 shall be applied to delinquent bills.

8. **Bulk Water Rates and Fees**.

(a) Deposit and Connection Fee.

(i) *District Supplies Meter and RPZ.* At the time an application for bulk water service is approved (a/k/a hydrant service), the applicant shall pay a Deposit of $2,000.00 and Connection Fee of $250.00 to the District. The Deposit will be held by the District, without interest, and applied to the customer's final bill. In the event there is a surplus of $5.00 or more after the Deposit is applied to the final bill, the balance will be paid to the customer within 45 days provided the customer has given a suitable mailing address. All requests for refunds shall be made in writing and must be filed within 90 days of settling the final bill. The customer shall pay any outstanding balance after the Deposit is applied. If necessary, the District shall attempt to collect the outstanding balance by all lawful means available.

(ii) *Applicant Supplies Meter and RPZ.* If the applicant provides a suitable hydrant meter and RPZ, the terms of subsection (i) above shall apply except the applicant shall pay a Deposit of $500.00. The District reserves the right to reject any meter or RPZ for any reason.

(b) Bulk Water Rate and Monthly Minimum. Bulk water customers shall pay a monthly Gallonage Charge at a rate of $14.00 per 1,000 gallons used with a monthly minimum of $250.00.

9. **Returned Check Fee.** In the event a check, draft, ACH, or any other similar instrument is given by any person for payment of services provided for in this Rate Order, and the instrument is returned by the bank or other similar institution as insufficient or non-negotiable for any reason, the account for which the instrument was issued shall be assessed a return check charge of $25.00.

10. **Disconnect Fee**. The district shall charge a Reconnect Fee of $50.00 during regular business hours for restoration of service after disconnection for any reason stated in this Rate Order or to restore service after disconnection at a customer's request, except for re-service under Sections E.3 (b) and E.4 (b) of this Rate Order.

11. **Service Trip Fee.** The district shall charge a Service Trip Fee of $50.00 for any service call or trip to a customer's tap as a result of a request by the customer or tenant, unless the service call concerns damage to district or customer equipment or facilities, or for the purpose of disconnecting or collecting payment for services.

12. **Equipment Damage Fee.** If the district's facilities or equipment have been damaged by tampering, by-passing, installing unauthorized taps, reconnecting service without authority or other service diversion, a fee shall be charged in an amount equal to the actual cost of all labor, materials and equipment necessary to repair or replace the damaged facilities or equipment. This fee shall be charged and paid before service is re-established. If the district's equipment has not been damaged, a fee shall be charged in an amount equal to the actual cost of all labor, materials, equipment, and other actions necessary to correct service diversions, unauthorized taps, or reconnection of service without authority. All components of this fee will be itemized, and a statement shall be provided to the customer. If the district's facilities or equipment have been damaged due to negligence or unauthorized use of the district's equipment, right-of-way, or meter shut-off valve, or due to other acts for which the district incurs losses or damages, the customer shall be liable for all labor and material charges incurred as a result of said acts or negligence. The fee shall not be less than $200.00. If the facilities or equipment have been damaged by tampering, by-passing, installing unauthorized taps, reconnecting service without authority or other service diversion with the same customer a second time, the district will contact the local sheriff’s department.

13. **Customer History Report Fee.** A fee of $5.00 shall be charged to provide a copy of the customer's record of past water purchases in response to a customer's request for such a record.

14. **Meter Profile Fee.** The district shall provide one meter profile for free during a calendar year. Additional meter profiles will be subject to a Meter Trip Fee of $50.00.

15. **Meter Test Fee.** The district shall test a customer's meter upon written request of the customer and a Meter Test Fee of $100.00 shall be imposed on the affected account.

16. **Meter Relocation Fee.** The fee for relocating a meter from one location to another under the terms of Section E.24 shall be $1,200.00. During removal of the meter intended for relocation the district shall also remove the existing service tap. Customer is responsible for connecting their own service line.

17. **Temporary Service Charges.** Temporary service shall not be allowed. Refer to applicable deposit, connection fees and water rates set forth in this Rate Order.

18. **Information Disclosure Fee**. All public information except that which has been individually requested as confidential shall be available to the public for a fee to be determined by the district based on the level of service and costs to provide such information, but not to be inconsistent with the terms of the Texas Publication Information Act: Chapter 552, Texas Government Code.

19. **Customer Service Inspection Fee.** A customer service inspection is required for each new or modified service before permanent continuous service is provided or continued. An applicant or customer may have a customer service inspection performed by a licensed inspector of their choice and submit the inspection report to the District. If the applicant or customer fails to submit an inspection report in a timely manner, the District may perform the customer service inspection and charge a fee of $100.00. For new service the customer service inspection fee is in addition to the service investigation fee and connection fee. [See Sections G.2 and G.5]

20. **Additional Assessments.** In the event any federal, state or local government imposes on the district a "per meter" fee or an assessment based on a percent of water charges, this fee or assessment will be billed and collected as a "pass through" charge to the customer.

21. **Other Fees**. All services outside the normal scope of utility operations that the district may be compelled to provide at the request of a customer shall be charged to the recipient based on the cost of providing such service.

22. **Fees Non-refundable.** All fees, rates and charges of the district contained in this Rate Order are non-refundable unless expressly stated otherwise.

23. **Free Service Prohibited.** The district shall not furnish free service to any customer.

ARTICLE H.

DROUGHT CONTINGENCY PLAN

DROUGHT CONTINGENCY PLAN

FOR THE

VERONA SPECIAL UTILITY DISTRICT

COLLIN COUNTY, TEXAS

FEBRUARY 2021

DBI ENGINEERS

DANIEL & BROWN INC.

PO BOX 606 | FARMERSVILLE, TEXAS 75442

972-784-7777 | FIRM REGISTRATION #: F-002225

DROUGHT CONTINGENCY PLAN
FOR THE
VERONA SPECIAL UTILITY DISTRICT

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the Verona Special Utility District hereby adopts the following regulations and restrictions on the delivery and consumption of water.

Water uses regulated or prohibited under this Drought Contingency Plan (the Plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section X of this Plan.

Section II: Public Involvement

Opportunity for the public and wholesale water customers to provide input into the preparation of the Plan was provided by the Verona Special Utility District by means of attendance at monthly Board of Director meetings.

Section III: Public Education

The Verona Special Utility District will periodically provide the public and wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of press releases, newsletters, or billing inserts.

Section IV: Coordination with Regional Water Planning Groups

The service area of the Verona Special Utility District is located within Region C Regional Planning Area and Verona Special Utility District has provided a copy of this Plan to the Region C Planning Group.

Section V: Authorization

The Manager, or his/her designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The Manager, or his/her designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the Verona Special Utility District. The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Definitions

For the purposes of this Plan, the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Commercial and institutional water use: water use which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

Conservation: those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

Customer: any person, company, or organization using water supplied by Verona Special Utility District.

Domestic water use: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even number address: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

Industrial water use: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

Landscape irrigation use: water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Non-essential water use: water uses that are not essential nor required for the protection of public, health, safety, and welfare, including:

(a) irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Plan;

(b) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;

(c) use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;

(d) use of water to wash down buildings or structures for purposes other than immediate fire protection;

(e) flushing gutters or permitting water to run or accumulate in any gutter or street;

(f) use of water to fill, refill, or add to any indoor or outdoor swimming pools or jacuzzi-type pools;

(g) use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;

(h) failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and

(i) use of water from hydrants for construction purposes or any other purposes other than fire fighting.

Odd numbered address: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

Section VIII: Triggering Criteria for Initiation and Termination of Drought Response Stages

The Manager, or his/her designee, shall monitor water supply and/or demand conditions on a daily basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified "triggers" are reached.

The triggering criteria described below are based on distribution capabilities and customer peak usage.

Utilization of alternative water sources and/or alternative delivery mechanisms:

Alternative water source(s) for Verona Special Utility District is: None.

Stage 1 Triggers – MILD Water Shortage Conditions

Requirements for initiation

Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses, defined in Section VII – Definitions, when continually falling treated water reservoir levels which do not refill above 100 percent overnight or on such occasion as a water well may be temporarily out of service or when water well pumping levels continue to decline.

Requirements for termination

Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Verona SUD will notify the public and wholesale customers of the termination of Stage 1.

Stage 2 Triggers – MODERATE Water Shortage Conditions

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses provided in Section IX of this Plan when continually falling treated water reservoir levels which do not refill above 90 percent overnight or on such occasion as a water well may be temporarily out of service or when water well pumping levels continue to decline.

Requirements for termination
Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Upon termination of Stage 2, Stage 1 becomes operative. Verona SUD will notify the public and wholesale customers of the termination of Stage 2.

Stage 3 Triggers – SEVERE Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 3 of this Plan when continually falling treated water reservoir levels which do not refill above 85 percent overnight or on such occasion as a water well may be temporarily out of service or when water well pumping levels continue to decline.

Requirements for termination
Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Upon termination of Stage 3, Stage 2 becomes operative. Verona SUD will notify the public and wholesale customers of the termination of Stage 3.

Stage 4 Triggers – CRITICAL Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 4 of this Plan when continually falling treated water reservoir levels which do not refill above 75 percent overnight or on such occasion as a water well may be temporarily out of service or when water well pumping levels continue to decline.

Requirements for termination
Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Upon termination of Stage 4, Stage 3 becomes operative. Verona SUD will notify the public and wholesale customers of the termination of Stage 4.

Stage 5 Triggers – EMERGENCY Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions for Stage 5 of this Plan when the Manager, or his/her designee, determines that a water supply emergency exists based on:

1. Major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; **or**
2. Natural or man-made contamination of the water supply source(s); **or**
3. One or more water wells are out of service; **or**
4. One or more water wells are experiencing dangerously declining pumping levels.

Requirements for termination
Stage 5 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Verona SUD will notify the public and wholesale customers of the termination of Stage 5.

Stage 6 Triggers – WATER ALLOCATION

Requirements for initiation
Customers shall be required to comply with the water allocation plan prescribed in Section IX of this Plan and comply with the requirements and restrictions for Stage 5 of this Plan when continually falling treated water reservoir levels which do not refill above 50 percent overnight or on such occasion as a water well may be temporarily out of service or when water well pumping levels continue to decline.

Requirements for termination
Water rationing may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of 2 consecutive days. Verona SUD will notify the public and wholesale customers of the termination of Water Allocation.

Section IX: Drought Response Stages

The Manager, or his/her designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in Section VIII of the Plan, shall determine that a mild, moderate, severe, critical, emergency or water shortage condition exists and shall implement the following notification procedures:

Notification
Notification of the Public:
The Manager, or his/ her designee, shall notify the public by means of:

- publication of notice in a newspaper of general circulation
- direct mailing to each customer.

Additional Notification:
The Manager, or his/ her designee, shall notify directly, or cause to be notified directly, the following individuals and entities:

- Fire Chief(s)
- County Emergency Management Coordinator(s)
- County Judge & Commissioner(s)
- State Disaster District / Department of Public Safety
- TCEQ (required when mandatory restrictions are imposed)
- Major water users
- Critical water users

Stage 1 Response – MILD Water Shortage Condition

Target: Achieve a voluntary 10 percent reduction in daily water demand.

Best Management Practices for Supply Management:

- none

Voluntary Water Use Restrictions for Reducing Demand:

(a) Water customers are requested to voluntarily limit the irrigation of landscaped areas to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and to irrigate landscapes only between the hours of midnight and 10:00 a.m. and 8:00 p.m to midnight on designated watering days.

(b) All operations of the Verona Special Utility District shall adhere to water use restrictions prescribed for Stage 1 of the Plan.

(c) Water customers are requested to practice water conservation and to minimize or discontinue water use for non-essential purposes.

(d) The Manager, or his/her designee, will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers voluntarily initiate implement Stage 1 or appropriate stage of the customer's drought contingency plan.

Stage 2 Response – MODERATE Water Shortage Conditions

Target: Achieve a 15 percent reduction in daily water demand.

Best Management Practices for Supply Management:

- none

Water Use Restrictions for Demand Reduction:

The Manager, or his/her designee, will request wholesale water customers to initiate mandatory Stage 2 or appropriate stage of the customer's drought contingency plan.

Under threat of penalty for violation, the following water use restrictions shall apply to all persons:

(a) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and irrigation of landscaped areas is further limited to the hours of 12:00 midnight until 10:00 a.m. and between 8:00 p.m. and 12:00 midnight on designated watering days. However, irrigation of landscaped areas is permitted at anytime if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight. Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rises. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.

(c) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or jacuzzi-type pools is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight.

(d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.

(e) Use of water from hydrants shall be limited to fire fighting, related activities, or other activities necessary to maintain public health, safety, and welfare, except that use of water from designated fire hydrants for construction purposes may be allowed under special permit from the Verona Special Utility District.

(f) Use of water for the irrigation of golf course greens, tees, and fairways is prohibited except on designated watering days between the hours 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight. However, if the golf course utilizes a water source other than that provided by the Verona Special Utility District, the facility shall not be subject to these regulations.

(g) All restaurants are prohibited from serving water to its patrons except when requested.

(h) The following uses of water are defined as non-essential and are prohibited:

1. wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
2. use of water to wash down buildings or structures for purposes other than immediate fire protection.
3. use of water for dust control;
4. flushing gutters or permitting water to run or accumulate in any gutter or street; and
5. failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s).

Stage 3 Response – SEVERE Water Shortage Conditions

Target: Achieve a 20 percent reduction in daily water demand.

Best Management Practices for Supply Management:

- Reduced or discontinued flushing of water mains.

Water Use Restrictions for Demand Reduction:

The Manager, or his/her designee, will request wholesale water customers to initiate mandatory Stage 3 or appropriate stage of the customer's drought contingency plan.

All requirements of Stage 2 shall remain in effect during Stage 3 except:

(a) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, drip irrigation, or permanently installed automatic sprinkler system only. The use of hose-end sprinklers is prohibited at all times.

(b) The watering of golf course tees is prohibited unless the golf course utilizes a water source other than that provided by the Verona Special Utility District.

(c) The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued.

Stage 4 Response – CRITICAL Water Shortage Conditions

Target: Achieve a 30 percent reduction in daily water demand.

Best Management Practices for Supply Management:

- Reduced or discontinued flushing of water mains.

Water Use Restrictions for Reducing Demand:

The Manager, or his/her designee, will request wholesale water customers to initiate mandatory Stage 4 or appropriate stage of the customer's drought contingency plan

All requirements of Stage 2 and 3 shall remain in effect during Stage 4 except:

(a) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 6:00 a.m. and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, or drip irrigation only. The use of hose-end sprinklers or permanently installed automatic sprinkler systems are prohibited at all times.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle not occurring on the premises of a commercial car wash and commercial service stations and not in the immediate interest of public health, safety, and welfare is prohibited. Further, such vehicle washing at commercial car washes and commercial service stations shall occur only between the hours of 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10 p.m.

(c) The filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools is prohibited.

(d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.

(e) No applications for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be allowed or approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.

Stage 5 Response – EMERGENCY Water Shortage Conditions

Target: Achieve a 50 percent reduction in daily water demand.

Best Management Practices for Supply Management:

- Reduced or discontinued flushing of water mains.

Water Use Restrictions for Reducing Demand:

The Manager, or his/her designee, will inform the utility director or other responsible official of each wholesale water customer by telephone or in person and suggest actions, as appropriate, to alleviate problems.

All requirements of Stage 2, 3, and 4 shall remain in effect during Stage 5 except:

(a) Irrigation of landscaped areas is absolutely prohibited.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is absolutely prohibited.

Stage 6 Response – WATER ALLOCATION

In the event that water shortage conditions threaten public health, safety, and welfare, the Manager is hereby authorized to ration water according to the following water allocation plan:

Single-Family Residential Customers

The allocation to residential water customers residing in a single-family dwelling shall be as follows:

Persons per Household	Gallons per Month
1 or 2	6,000
3 or 4	7,000
5 or 6	8,000
7 or 8	9,000
9 or 10	10,000
11 or more	12,000

"Household" means the residential premises served by the customer's meter. "Persons

per household" includes only those persons currently physically residing at the premises and expected to reside there for the entire billing period. It shall be assumed that a particular customer's household is comprised of two (2) persons unless the customer notifies the Verona Special Utility District of a greater number of persons per household on a form prescribed by the Manager. The Manager shall give his best effort to see that such forms are mailed, otherwise provided, or made available to every residential customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the Verona Special Utility District offices to complete and sign the form claiming more than two (2) persons per household. New customers may claim more persons per household at the time of applying for water service on the form prescribed by the Manager. When the number of persons per household increases so as to place the customer in a different allocation category, the customer may notify the Verona Special Utility District on such form and the change will be implemented in the next practicable billing period. If the number of persons in a household is reduced, the customer shall notify the Verona Special Utility District in writing within two (2) days. In prescribing the method for claiming more than two (2) persons per household, the Manager shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of persons in a household or fails to timely notify the Verona Special Utility District of a reduction in the number of persons in a household shall be fined not less than $100.00. Residential water customers shall pay the following surcharges:

$10.00 for the first 1,000 gallons over allocation.
$10.00 for the second 1,000 gallons over allocation.
$10.00 for the third 1,000 gallons over allocation.
$10.00 for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative

Master-Metered Multi-Family Residential Customers

The allocation to a customer billed from a master meter which jointly measures water to multiple permanent residential dwelling units (example: apartments, mobile homes) shall be allocated 6,000 gallons per month for each dwelling unit. It shall be assumed that such a customer's meter serves two dwelling units unless the customer notifies the Verona Special Utility District of a greater number on a form prescribed by the Manager. The Manager shall give his/her best effort to see that such forms are mailed, otherwise provided, or made available to every such customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the Verona Special Utility District offices to complete and sign the form claiming more than two (2) dwellings. A dwelling unit may be claimed under this provision whether it is occupied or not. New customers may claim more dwelling units at the time of applying for water service on the form prescribed by the Manager. If the number of dwelling units served by a master meter is reduced, the customer shall notify the Verona Special Utility District in writing within two (2) days. In prescribing the method for claiming more than two (2) dwelling units, the Manager shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of dwelling units served by a master meter or fails to timely notify the Verona Special

Utility District of a reduction in the number of persons in a household shall be fined not less than $100.00. Customers billed from a master meter under this provision shall pay the following monthly surcharges:

$10.00 for 1,000 gallons over allocation up through 1,000 gallons for each dwelling unit.
$10.00 thereafter, for each additional 1,000 gallons over allocation up through a second 1,000 gallons for each dwelling unit.
$10.00 thereafter, for each additional 1,000 gallons over allocation up through a third 1,000 gallons for each dwelling unit.
$10.00 thereafter for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative.

Commercial Customers

A monthly water usage allocation shall be established by the Manager, or his/her designee, for each nonresidential commercial customer other than an industrial customer who uses water for processing purposes. The non-residential customer's allocation shall be approximately 50 percent of the customer's usage for corresponding month's billing period for the previous 12 months. If the customer's billing history is shorter than 12 months, the monthly average for the period for which there is a record shall be used for any monthly period for which no history exists. Provided, however, a customer, 75 percent of whose monthly usage is less than 100,000 gallons, shall be allocated 75,000 gallons. The Manager shall give his/her best effort to see that notice of each non-residential customer's allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer's responsibility to contact the Verona Special Utility District to determine the allocation. Upon request of the customer or at the initiative of the Manager, the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the customer's normal water usage, (2) one nonresidential customer agrees to transfer part of its allocation to another nonresidential customer, or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the Board of Directors. Nonresidential commercial customers shall pay the following surcharges:

Customers whose allocation is 100,000 gallons through 1,000,000 gallons per month:

$ 5.00 per thousand gallons for the first 1,000 gallons over allocation.
$ 6.00 per thousand gallons for the second 1,000 gallons over allocation.
$ 7.00 per thousand gallons for the third 1,000 gallons over allocation.
$ 10.00 per thousand gallons for each additional 1,000 gallons over allocation.

Customers whose allocation is < 1,000,000 gallons per month or more:

1 times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.

2 times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.

3 times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.

4 times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, "block rate" means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the customer's allocation.

Industrial Customers

A monthly water allocation shall be established by the Manager, or his/her designee, for each industrial customer, which uses water for processing purposes. The industrial customer's allocation shall be approximately 90 percent of the customer's water usage baseline. Ninety (90) days after the initial imposition of the allocation for industrial customers, the industrial customer's allocation shall be further reduced to 85 percent of the customer's water usage baseline. The industrial customer's water use baseline will be computed on the average water use for the 12 month period ending prior to the date of implementation of Stage 2 of the Plan. If the industrial water customer's billing history is shorter than 12 months, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists. The Manager shall give his/her best effort to see that notice of each industrial customer's allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer's responsibility to contact Verona Special Utility District to determine the allocation, and the allocation shall be fully effective notwithstanding the lack of receipt of written notice. Upon request of the customer or at the initiative of the Manager, the allocation may be reduced or increased, (1) if the designated period does not accurately reflect the customer's normal water use because the customer had shutdown a major processing unit for repair or overhaul during the period, (2) the customer has added or is in the process of adding significant additional processing capacity, (3) the customer has shutdown or significantly reduced the production of a major processing unit, (4) the customer has previously implemented significant permanent water conservation measures such that the ability to further reduce water use is limited, (5) the customer agrees to transfer part of its allocation to another industrial customer, or (6) if other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the Board of Directors. Industrial customers shall pay the following surcharges:

Customers whose allocation is 50,000 gallons through 200,000 gallons per month:

$ 5.00 per thousand gallons for the first 1,000 gallons over allocation.
$ 6.00 per thousand gallons for the second 1,000 gallons over allocation.
$ 7.00 per thousand gallons for the third 1,000 gallons over allocation.
$ 10.00 per thousand gallons for each additional 1,000 gallons over allocation.

Customers whose allocation is < 200,000 gallons per month or more:

1 times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.

2 times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.

3 times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.

4 times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, "block rate" means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the customer's allocation.

Section X: Pro Rata Curtailment

In the event that the triggering criteria specified in Section VII of the Plan for Stage 3 – Severe Water Shortage Conditions have been met, the Manager is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code, §11.039.

Section XI: Contract Provisions

Verona SUD will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

Section XII: Enforcement

(a) During any period when either mandatory water use restrictions or pro rata allocation of available water supplies are in effect, wholesale customers shall pay the following surcharges on excess water diversions and/or deliveries:

2 times the normal water charge per gallon for water diversions and/or deliveries in excess of monthly allocation from 75 percent through 100 percent above monthly allocation.

(b) No person shall knowingly or intentionally allow the use of water from the Verona Special Utility District for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Plan, or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by Manager, or his/her designee, in accordance with provisions of this Plan.

(c) Any person who violates this Plan is guilty of a misdemeanor and, upon conviction shall be punished by a fine of not less than one-hundred dollars ($100.00) and not more than five-hundred dollars ($500.00). Each day that one or more of the provisions in this Plan is violated shall constitute a separate offense. If a person is convicted of three or more distinct violations of this Plan, the Manager shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued under such circumstances shall be restored only upon payment of a re-connection charge, hereby established at $50.00, and any other costs incurred by the Verona Special Utility District in discontinuing service. In addition, suitable assurance must be given to the Manager that the same action shall not be repeated while the Plan is in effect. Compliance with this plan may also be sought through injunctive relief in the district court.

(d) Any person, including a person classified as a water customer of the Verona Special Utility District, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a reputable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children and proof that a violation, committed by a child, occurred on property within the parents' control shall constitute a reputable presumption that the parent committed the violation, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this Plan and that the parent could not have reasonably known of the violation.

(e) Any employee of the Verona Special Utility District, police officer, or other employee designated by the Manager, may issue a citation to a person he/she reasonably believes to be in violation of this Ordinance.

Section XI: Variances

The Manager, or his/her designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance and if one or more of the following conditions are met:

(a) Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.

(b) Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Resolution shall file a petition for variance with the Verona Special Utility District within 5 days after the Plan or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the Manager, or his/her designee, and shall include the following:

(a) Name and address of the petitioner(s).

(b) Purpose of water use.

(c) Specific provision(s) of the Plan from which the petitioner is requesting relief.

(d) Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Resolution.

(e) Description of the relief requested.

(f) Period of time for which the variance is sought.

(g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.

(h) Other pertinent information.

ARTICLE I.

CROSS CONNECTION CONTROL PROGRAM

VERONA SPECIAL UTILITY DISTRICT
CROSS-CONNECTION CONTROL PROGRAM

a. General

(1) No water service connection shall be made to any establishment where a potential or actual contamination hazard exists unless the water supply is protected in accordance with the Texas Commission on Environmental Quality Commission (TCEQ) Rules (30 TAC 290) and this ordinance. The water purveyor shall discontinue water service if a required backflow prevention assembly is not installed, maintained and tested in accordance with the TCEQ Rules and this ordinance.

(2) This Cross-Connection Control Program shall be in accordance with TCEQ Regulatory Guidance RG-478 (Appendix A).

b. Backflow Prevention Assembly Installation, Testing and Maintenance

(1) All backflow prevention assemblies shall be tested upon installation by a recognized backflow prevention assembly tester and certified to be operating within specifications. Backflow prevention assemblies which are installed to provide protection against health hazards must also be tested and certified to be operating within specifications at least annually by a recognized backflow prevention assembly tester.

(2) All backflow prevention assemblies shall be installed and tested in accordance with the manufacturer's instructions, the American Water Works Association's Recommended Practice for Backflow Prevention and Cross-Connection Control (Manual M14) or The University of Southern California Manual of Cross-Connection Control.

(3) Assemblies shall be repaired, overhauled, or replaced at the expense of the customer whenever said assemblies are found to be defective. Original forms of such test, repairs, and overhaul shall be kept and submitted to the Verona Special Utility District within five (5) working days of the test, repair or overhaul of each backflow prevention assembly.

(4) No backflow prevention assembly or device shall be removed from use, relocated, or other assembly or device substituted without the approval of the Verona Special Utility District. Whenever the existing assembly or device is moved from the present location or can not be repaired, the backflow assembly or device shall be replaced with a backflow prevention

assembly or device that complies with this section, The American Water Works Association's Recommended Practice for Backflow Prevention and Cross-Connection Control (Manual M14), current addition, University of Southern California Manual of Cross-Connection Control, current addition, or the current Plumbing Code of the Verona Special Utility District, whichever is more stringent.

(5) Test gauges used for backflow prevention assembly testing shall be calibrated at least annually in accordance with The American Water Works Association's Recommended Practice for Backflow Prevention and Cross-Connection Control (Manual M14), current addition, or The University of Southern California's Manual of Cross-Connection Control, current addition. The original calibration form must be submitted to the Verona Special Utility District within five (5) working days after calibration.

(6) A recognized backflow prevention assembly tester must hold a current endorsement from the Texas Commission on Environmental Quality (Commission).

c. Customer Service Inspections

(1) A customer service inspection shall be completed prior to providing continuous water service to all new construction, on any existing service when the water purveyor has reason to believe that cross-connections or other contaminant hazards exist, or after any material improvement, correction, or addition to the private water distribution facilities.

(2) Only individuals with the following credentials shall be recognized as capable of conducting a customer service inspection:

(A) Plumbing Inspectors and Water Supply Protection Specialists that have been licensed by the Texas State Board of Plumbing Examiners.

(B) Certified Waterworks Operators, and members of other water related professional groups who have completed a training course, passed an examination administered by the Commission or its designated agent, and hold a current endorsement issued by the Commission.

(3) The Customer Service Inspection must certify that:

(A) No direct connection between the public drinking water supply and a potential source of contamination is permitted. Potential sources

of contamination shall be isolated from the public water system by a properly installed air gap or an appropriate backflow prevention assembly.

(B) No cross-connection between the public water supply and a private water source exists. Where an actual properly installed air gap is not maintained between the public water supply and a private water supply, an approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a recognized backflow prevention assembly tester.

(C) No connection exists which allows water to be returned to the public drinking water supply is permitted.

(D) No pipe or pipe fitting which contains more than 8% lead may be used for the installation or repair of plumbing at any connection that provides water for human use.

(E) No solder or flux which contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection that provides water for human use. A minimum of one lead test shall be performed for each inspection.

APPENDIX A
TCEQ Regulatory Guidance RG-478

Revised August 2016
RG-478

Establishing and Managing an Effective Cross-Connection Control Program

Water Supply Division

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Establishing and Managing an Effective Cross-Connection Control Program

RG-478
Revised August 2016

Prepared by
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Introduction

Who Should Read This Guide?

This guide is intended to help public water system (PWS) managers, operators, and program administrators implement their cross-connection control programs. The audience for this guide is Texas PWSs—for example, a water district, a water-supply corporation, or a city-owned or investor-owned PWS.

Members of the general public—customers of water systems—will also find answers in this guide to many questions they may have about cross-connection control programs. For more information, PWSs and their customers can also contact the TCEQ at 512-239-0028 to request the brochure *A Consumer's Guide to Backflow Prevention in Texas* (TCEQ publication GI-411). The brochure is also downloadable from the TCEQ's website at:

<www.tceq.texas.gov/publications/gi/gi-411.html>

In the text of this document, "you" refers to the PWS and its staff members; "program" is short for 'cross-connection control program'; and "we" refers to the TCEQ or its staff.

This publication is for general guidance only and is not a substitute for the rules or regulations governing cross-connection control and backflow prevention.

Texas Rules

Title 30 of the Texas Administrative Code (30 TAC), Chapter 290, prohibits PWSs from connecting to an actual or potential contamination hazard without first protecting the potable-water supply. The TCEQ rules require PWSs to:

- adopt a plumbing ordinance, regulations, or service agreements
- require customer-service inspections
- require backflow protection using appropriate backflow prevention assemblies
- require those assemblies to be tested to ensure that they are working correctly

This document refers to the Texas rules in the applicable sections throughout. Implementing these rules constitutes a cross-connection control program.

TCEQ rules place the responsibility for recognizing and evaluating hazards within the PWS's distribution system on the PWS. When a hazard is identified, you must ensure that your consumers are protected from contamination by that hazard. The PWS may terminate water service to any connection where an unprotected health hazard is found and only restore service when the health hazard no longer exists or after it has been properly isolated using a backflow prevention assembly.

Any hazard must be isolated from the drinking-water supply regardless of when the hazard was first created or the site was built. Because the effects of a backflow event can be so significant, there are no grandfather clauses that apply to cross-connection control and backflow prevention in the TCEQ's regulations on backflow and siphonage. However, the landscape-irrigation regulations do contain some provisions for existing irrigation systems. This is covered in section 8 of this document.

A backflow incident qualifies as an accident that has a negative impact on the delivery of safe and adequate drinking water and must be reported to the TCEQ [30 TAC 290.46(w)(5)]. The TCEQ maintains a 24-hour toll-free number for reporting backflow

incidents and other emergencies: 888-777-3186. Additionally, you should submit a detailed summary of any backflow incident to:

Coordinator, Cross-Connection Control Program
Technical Review and Oversight Team, MC 159
Texas Commission on Environmental Quality
PO Box 13087
Austin TX 78711-3087

1. Plumbing Ordinance, Regulations, or Service Agreements [30 TAC 290.46(i)]

Every PWS is required to adopt either:

- a plumbing ordinance,
- plumbing regulations, or
- service agreements.

These give the local public water supplier the authority to implement a cross-connection control program. Whichever is adopted, it must have provisions for proper enforcement in order to prohibit cross-connections and other unacceptable plumbing practices.

PWSs serve a wide variety of customers throughout Texas. The potential cross-connections found in a rural area can be very different from those found in an urban setting. Each PWS should carefully consider the types of hazards that may be present in its distribution system before adopting a plumbing ordinance, regulations, or service agreement. This will allow the PWS to tailor the adopted rules to better protect the potable-water supply against a category of specific potential hazards in the PWS's local area. *Important:* the adopted ordinance, regulations, or service agreements may be more stringent than the TCEQ regulations, but cannot be less stringent.

For example, if you supply water to residential customers who have irrigation systems and also have animals on their lot, run a business from their house, or have an auxiliary water supply—which increases the contamination hazard—you may require more rigorous testing of the backflow preventers for those customers. While TCEQ rules address the hazards posed to the potable water supply, specific requirements adopted in the local ordinance, regulations, or service agreement will strengthen your enforcement of these requirements—increasing awareness of the rules and reducing the number of questions.

Note that an investor-owned utility has only limited authority to adopt more stringent requirements than the TCEQ rules [30 TAC 291.93(5)].

Plumbing Ordinance or Regulations

An ordinance is a formal enactment by a local government, adopted by the governing body of that government (for example, a city council). Typically, a plumbing ordinance will contain the requirements for cross-connection control and backflow prevention that comply with state regulations and also meet the local, specific needs for protecting the potable-water distribution system. A sample plumbing ordinance appears in Appendix H of this guide.

Depending on the local municipality, plumbing regulations that contain requirements for cross-connection control and backflow prevention could be contained within a

plumbing ordinance that encompasses the cross-connection control program and all its specific requirements.

Service Agreements

Some public water systems do not have the regulatory or governmental structure to adopt ordinances or regulations. These must use customer-service agreements, which are agreements between the public water systems and their customers, that have provisions for protection against backflow, and cross-connections, and provide for enforcement.

A sample service agreement appears in Appendix B. If the service agreement used by your PWS has been in existence for a long time, it is likely outdated. We recommend that you review and update it, if needed, to include current requirements such as the lead levels allowable by the U.S. Environmental Protection Agency that went into effect on January 4, 2014.

You may use the sample service agreement in the TCEQ's rules or create your own. If you wish to develop your own, it must include all of the required elements.

A few critical elements of an effective service agreement include:

- **Right of entry:** The agreement must give your personnel, particularly customer-service inspectors, the authority to enter facilities in order to evaluate cross-connections, backflow risks, plumbing materials, and internal backflow prevention programs (where present).
- **Lead ban:** The agreement must have provisions for prohibiting lead in excess of the federal standards in the plumbing materials, as demonstrated by the lead test or the labeling of the plumbing.
- **Enforcement:** The agreement must give you the authority to enforce the requirements for cross-connection control and backflow prevention.

Plumbing Codes

The Plumbing License Law in Title 8, Texas Occupations Code, Chapter 1301, requires all municipalities with a population of 5,000 or greater to adopt a plumbing code; smaller municipalities and other types of PWSs may voluntarily adopt a plumbing code.

The two plumbing codes that are authorized to be adopted in the state of Texas by the Texas State Board of Plumbing Examiners are the International Plumbing Code and the Uniform Plumbing Code. These codes are revised every three years. Depending on the particular code and year of revision, the requirements related to cross-connection control and backflow prevention in the code may differ from TCEQ rules.

This very important area of cross-connection control and backflow prevention can become confusing. TCEQ regulations require that a public water supplier adopt a plumbing ordinance, regulations, or service agreements as described in this section. The Plumbing License Law requires the adoption of a plumbing code by municipalities with a population over 5,000; however, adopting a plumbing code does **not** mean that a PWS is in compliance with the TCEQ's plumbing-ordinance regulation. This distinction is critical, because the plumbing code generally governs all plumbing on the customer's side of the meter.

While the Plumbing Codes contain some very important cross-connection control and backflow prevention requirements, they do not address the authority of a cross-connection control program and are not specific to a local municipality. The plumbing ordinance

regulation allows the public water supplier to develop requirements for cross-connection control and backflow prevention specific to its distribution system and gives authority to the cross-connection control program.

2. Customer-Service Inspections

Customer-service inspections (CSIs) are the keystone of a successful cross-connection control program. After you have established an authority, a CSI is the next step in implementing such a program.

The customer service inspector is trained and licensed to examine private water-distribution facilities in order to determine the presence of cross-connections, potential contamination hazards, and illegal materials containing lead and copper, but is **not** permitted to perform plumbing inspections. A CSI can be conducted by a TCEQ-licensed customer-service inspector, a plumbing inspector, or a licensed plumber with a "water supply protection specialist" endorsement (the last two are licensed by the Texas State Board of Plumbing Examiners).

A CSI is required at all new service connections, existing service connections where the PWS has reason to believe that cross-connections or other potential contamination hazards exist, and existing service connections where a material improvement, correction, or addition has been made to the private water-distribution facilities [30 TAC 290.46(j)].

Sometimes, there is some confusion regarding the need for backflow prevention at a site. For example, Appendix F lists dental clinics as posing a health hazard requiring a reduced pressure principle backflow prevention assembly (RP) or an air gap at the meter. Modern dental chairs can be self-contained, with their own water source, and not connected to the potable-water supply. Also, taking x-rays digitally can eliminate the need for potable water to develop them. Thus, a modernized dental clinic may not pose a health hazard. If it can be documented in a CSI that the use of potable water in a dental clinic does not constitute a health hazard then, even though these clinics are named in Appendix F, backflow prevention is not required.

When necessary, the inspector has the option of using more than one CSI certificate to document the inspection results. For example, if the CSI is at a site that is very large and has several different structures, then more than one certificate should be issued to document the locations that were inspected, hazards encountered at each site, and the need for backflow prevention at each site.

The results of the customer-service inspection will identify any cross-connections or actual or potential contamination hazards and determine if backflow prevention is required at the site. More detailed information concerning CSIs will appear in the forthcoming TCEQ publication *Customer-Service Inspections: A Guide for Public Water Systems* (RG-206), which is expected to be available in 2017 at:

<www.tceq.texas.gov/publications/rg/rg-206.html>

Information on acquiring a CSI license may be obtained by contacting the TCEQ's Occupational Licensing Section at:

<www.tceq.texas.gov/goto/cust_serv_lic>

Fees and Payment for the CSI

A PWS that requires a customer-service inspection by its own employees, or provides this service as part of its business, may either:

- charge a fee established by the PWS and approved by its governing body or established by the Public Utility Commission (PUC) in the case of an investor-owned utility, or
- provide the service at no initial cost and then recoup the expenses through rates.

A PWS that requires a customer to arrange for a CSI must:

- ensure that the CSI is conducted by a qualified professional
- ensure that it obtains the original or a copy of the CSI certificate

Payment for the CSI is directly between the customer and the customer-service inspector.

3. Backflow Prevention Assemblies

An effective cross-connection control program must include appropriate means to prevent backflow. This is, typically accomplished by installing backflow prevention assemblies at cross-connections. Whenever possible, the backflow preventer should be located at the point closest to the actual or potential contamination hazard. This will limit the amount of water exposed to backflow, should it occur, and will also make it less likely for someone to tap the water-supply line downstream of the backflow prevention assembly, which would make the downstream connection vulnerable to the contamination hazard.

Selection of Assemblies

TCEQ rules distinguish between health and non-health hazards. A health hazard (or contaminant) involves any substance that can cause death, illness, or the spread of disease: for example, a potable-water connection to a heating system that uses a toxic corrosion-control fluid. A non-health hazard (or pollutant) involves any substance that constitutes a nuisance, or would be aesthetically objectionable if introduced into the public water supply—for example, a potable-water connection to fermentation tanks at a winery.

For protection from a health hazard, the following types of backflow prevention assemblies may be used, provided they are installed per the manufacturer's and plumbing-code requirements:

- RP, RPZ, or RPBA: reduced pressure principle backflow prevention assembly—will function under both back pressure and back siphonage.
- PVB: pressure-vacuum breaker—will function under back siphonage only; it is allowable to have a control valve downstream.
- SVB: spill-resistant vacuum breaker—will function under back siphonage only; it is allowable to have a control valve downstream.
- AVB: atmospheric vacuum breaker—non-testable, will function under back siphonage only, and cannot have a control or shutoff valve downstream.
- AG: air gap—if this method is used, it must meet the definition of an air gap:

  > The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, fixture, receptor, sink, or other assembly and the flood level rim of the receptacle. The vertical, physical separation must be at least twice the diameter of the water supply outlet, but never less than 1.0 inch. [30TAC 290.38(2)]

Note that, at a customer connection, once the water flows through an air gap, you no longer retain sanitary control of the water and the supply pressure is lost. In addition, both you and the customer must consider that the air gap exposes the water and the container to the environment, allowing for the direct entry of pathogens and debris.

Testing versus inspection

RPs, PVBs, and SVBs are testable assemblies, whereas AVBs are not testable. Thus, RPs, PVBs, and SVBs are the most suitable assemblies for preventing backflow from a health hazard and are preferable to AVBs in almost every situation. If AVBs and air gaps are installed to protect against health hazards, then the authority having jurisdiction should ensure that they are annually inspected for proper installation and operation, and to confirm that they have not been compromised.

Although there are no procedures for testing an air gap or AVB it is possible to determine whether one is working correctly by inspecting it. An air gap or AVB can be inspected by:

- determining if it is installed correctly, in accordance with the recommendations from the manufacturer and requirements in the plumbing code;
- checking any moving parts for free movement; and
- looking for any evidence of modification.

Check valves

Single-check valves are not backflow prevention assemblies and they cannot be tested. The valve seats may become degraded or fouled, which can allow contaminants to backflow through them.

For protection from a non-health hazard, any of the previously mentioned assemblies may be used, as well as a double-check-valve backflow prevention assembly (DCVA), which will function under a back pressure or back siphonage.

Location of Backflow Prevention Assemblies

The TCEQ **does not recommend** the installation of backflow-prevention assemblies at **all** service connections. A typical residential building that has no special water using equipment or processes **does not need** containment backflow prevention. However residences and other buildings or facilities that:

- Use an auxiliary water supply, such as a private well, a rainwater-harvesting system, or a pump in a lake, must install an RP at the meter connection or provide an air gap at the meter. If it can be documented in a CSI that the plumbing system of the auxiliary water supply and the plumbing system of the potable water supply are physically separated and not cross-connected then this separation distance may serve as an air gap. Periodic CSIs will be required to make sure that the two separate systems have not been cross-connected.
- Have an actual or potential contamination hazard on-site must use an appropriate backflow prevention assembly. Appendix E has a partial list of facilities where health hazards are commonly found [30 TAC 290.47(f)].

Typical residences only require minimal backflow prevention such as vacuum breakers on the hose bibbs, an air gap for their water-softener drain line, and a backflow prevention assembly on their irrigation system. Even this minimal backflow prevention is critical because, if backflow occurs, the contaminant will first enter the residential plumbing and those people living there will be the first exposed.

Purchase and Installation of Backflow Prevention Assemblies

A PWS with qualified personnel may install the backflow prevention assembly, charge for its installation, and charge an installation fee established by the PWS and approved by its governing body—or established by the TCEQ, in the case of an investor-owned utility.

Also, a PWS may instead require the customer to purchase the backflow-prevention assembly and have it installed, in which case the PWS must ensure that the correct assembly is installed and a qualified individual installed it.

Regardless of who installs a backflow prevention assembly, it must be tested upon installation. Experience has shown that a brand-new assembly often will fail the test right out of the box and will need a modification or repair.

The regulations of the Texas State Board of Plumbing Examiners determine which qualified individuals can install such assemblies. Licensed plumbers can install backflow prevention assemblies, but exemptions in the Plumbing License Law allow other individuals to install assemblies in specific cases. For example, a homeowner who has obtained the appropriate permit (if required) may install a backflow prevention assembly on her irrigation system or a water operator may install an assembly on his own distribution system. The flowchart in Appendix A can help you determine who is authorized to install backflow prevention assemblies.

4. Containment Programs and Internal Cross-Connection Control Programs

A **containment program**, also called "premises isolation," has backflow prevention at the main water connection to the facility (at the meter). For example, one backflow prevention assembly could be installed at the main water-supply line to a manufacturing facility so that all the actual or potential hazards located at that site are contained within that facility without danger of them backflowing into the public water supply. One benefit is that the public water supply is protected with only one backflow prevention assembly. However, the people within the facility are vulnerable to backflow. **Protection from internal cross-connections to health hazards is critically important, as they can be found in many facilities with relatively large populations—hospitals, schools, large business facilities, manufacturing facilities, etc.** When requiring containment backflow prevention, the PWS should alert the site to the hazards of thermal expansion and the need to turn the water off to the entire site in order to test the backflow preventer. Some sites with containment backflow prevention will install two backflow preventers in parallel, so that water service will not be interrupted. While one backflow preventer is being tested, the other can continue to supply water to the site. If, in a parallel installation, water flows through only one backflow preventer and the second is only there to be used during testing, then the second should at least be pressurized to close the relief valve and prevent entry of any contaminants.

An **internal cross-connection control program** is one that is located within a facility that has actual or potential contamination hazards connected to the internal potable-water distribution system and should not be confused with the cross-connection control program administered by the PWS. These internal hazards and cross-connections are identified when the customer-service inspection is conducted. An internal cross-connection control program consists of backflow prevention at specific locations within a facility where hazards are located. For example, backflow prevention assemblies could be

installed on the water supply lines to water-using equipment in a manufacturing facility. A very important benefit of an internal cross-connection control program is that not only the public water supply, but also the people within the facility, are protected from backflow. A challenge is the possible need to install more than one backflow prevention assembly.

Internal cross-connection control programs are supported by the following:

- **30 TAC 290.44(h)(1)(B)** At any residence or establishment where an actual or potential contamination hazard exists and an adequate internal cross-connection control program is in effect, backflow protection at the water service entrance or meter is not required.
  - **(i)** An adequate internal cross-connection control program shall include an annual inspection and testing by a licensed backflow prevention assembly tester on all backflow prevention assemblies used for health hazard protection.
  - **(ii)** Copies of all such inspection and test reports must be obtained and kept on file by the water purveyor.
  - **(iii)** It will be the responsibility of the water purveyor to ensure that these requirements are met.
- **30 TAC 290.44(h)(5)** The use of a backflow prevention assembly at the service connection shall be considered as additional backflow protection and shall not negate the use of backflow protection on internal hazards as outlined and enforced by local plumbing codes.

These programs pose a challenge because—being internal—they can be compromised without your knowledge.

As stated above, internal cross-connection control programs are required to be "adequate" in order for the PWS to not also require a backflow preventer at the meter. When a PWS is relying **solely** on an internal cross-connection control program, then adequacy of the internal program must be determined by requiring CSIs. The TCEQ recommends periodic CSIs at those sites with an internal cross-connection control program and no backflow prevention at the meter. This will ensure that any **new** cross-connections have the appropriate backflow prevention and existing backflow prevention is still in place. The PWS must retain the original or copies of the inspection reports.

As specified in 30 TAC 290.46(j), whenever a PWS "has reason to believe that cross-connections or other potential contaminant hazards exist," it can conduct or require a customer-service inspection. The fact that internal cross-connection control programs can change without the PWS being aware of the change and the potential location of internal cross-connection control programs at sites with large populations, suffices as "reason to believe" and supports the periodic inspections of internal cross-connection control programs. These CSIs will ensure that unprotected cross-connections have not been created since the initial inspection and will confirm that the backflow prevention assemblies are still in their appropriate locations and have not been modified. Periodic CSIs for internal cross-connection control programs should also be reflected in the local ordinance or other local authority.

Example
A manufacturing facility had several cross-connections on-site. It did not have a containment program, but instead had an internal program in which a backflow preventer was installed at each cross-connection. During the routine testing of the backflow preventer, the BPAT noticed that the backflow preventer was the same type as the one he had tested several weeks ago. This seemed suspicious, so he compared the serial number, as well as the make and model, with test reports from previous tests. He was able to confirm that the manufacturer was actually removing the backflow preventer,

reforming the cross-connection by replacing it with a pipe, and re-installing the backflow preventer at the next cross-connection which was due to have its backflow preventer tested. He had been testing the same backflow preventer at different locations! He immediately informed the PWS, which used this as reason to believe that cross-connections or other potential contaminant hazards existed, and conducted a customer service inspection. After the CSI showed the unprotected cross-connections, the manufacturer installed individual backflow preventers at each one.

5. Coordination, Communication, and Cooperation

A successful backflow prevention and cross-connection control program will include the three *C*s: communication, coordination, and cooperation. Some of the personnel to be included in a cross-connection control program may be:

- city, utility, or district management
- a plumbing inspector
- a building official
- employees in environmental services
- water-department management and personnel
- the fire marshal's office
- industry professionals (irrigators, plumbers, testers, inspectors)

When a PWS supplies water to customers inside incorporated areas where a plumbing code has been adopted, PWSs frequently coordinate cross-connection control with a building- or plumbing-inspection department. The cross-connection control program should reside between the water utility and the building- or plumbing-inspection departments and be composed of staff from both. The building- or plumbing-inspection department administers the plumbing code, which has its own requirements for backflow prevention and cross-connection control; the water utility administers the TCEQ's requirements for backflow prevention and cross-connection control, so their responsibilities naturally overlap.

One of the challenges faced by PWSs is how to protect the people within a site when the system's authority ends at the meter. A common misconception is that a PWS that requires backflow prevention at the metered connection to a site does not have to require backflow protection within the site. One key benefit of a cross-connection control program is that it allows for the protection of the potable-water supply not only in the main distribution system, but also within a site. The point where the PWS's authority generally ends, at the meter, is where the authority of other jurisdictions takes over and continues to prevent backflow.

"The use of a backflow prevention assembly at the service connection shall be considered as additional backflow protection and shall not negate the use of backflow protection on internal hazards as outlined and enforced by local plumbing codes" [30 TAC 290.44(h)(5)]. Thus, according to this regulation, backflow protection at the meter is "considered as additional backflow protection." In other words: in addition to backflow prevention required by other authorities—plumbing codes, the fire marshal's office, etc.—backflow protection may also be required at the meter, allowing for protection of customers from backflow within the site.

Because of the shared responsibility for cross-connection control, it is important that everyone involved develop written protocols for sharing information, storing records, and delineating where one department's jurisdiction ends and another department's

jurisdiction begins. Open lines of communication and good working relationships are essential.

Example (Coordination, Communication, and Cooperation)

The administrator of a cross-connection control program was having trouble getting a local backflow prevention assembly tester to submit the original test forms in a reasonable amount of time. Often, this tester would wait months before turning in the test reports. This delay made it difficult for the program administrator to track where new assemblies had been installed and when they were due for testing. The program administrator coordinated with the building- and plumbing-inspection staff so that approval of the plumbing installation and issuance of a certificate of occupancy for those locations where a test was conducted depended on all necessary documentation, such as the Backflow Prevention Assembly Test and Maintenance Report, to first be submitted to the city. This coordination and cooperation between the administrator and department solved the problem. Relevant to this example is the landscape-irrigation regulation [30 TAC 344.52(c), Appendix H], which requires submission of a test report to the water purveyor within 10 business days of testing. Another option for the administrator was to inform the tester that only those registered with the city could test, and those registered testers must submit timely reports.

Outside incorporated areas, PWS personnel usually do not have the support of a plumbing or inspection department. In those cases, the PWS does not have the benefit of plumbing-code rules and so the responsibility for the cross-connection control program rests solely on the PWS. It then becomes essential that the PWS ensures that its service agreement meets TCEQ standards, that each customer signs the service agreement, and that the PWS is able to follow up on hazards identified through periodic CSIs or the required backflow prevention assembly testing.

6. Testing, Inspection, Certification

Assemblies used for protection from health hazards, whether installed at the meter or part of an internal program, must be tested upon installation and once a year thereafter by a licensed backflow prevention assembly tester and the records must be retained by the PWS for at least three years.

Testing Backflow Prevention Assemblies

Like all mechanical devices, backflow prevention assemblies are subject to failure over time and must be tested to ensure that they are operating properly and are protecting the potable-water supply. As noted above, TCEQ rules require that all backflow prevention assemblies be tested upon installation, and that assemblies installed to protect against health hazards must be tested annually [30 TAC 290.44(h)(4)].

In addition to recording the test results, the Test and Maintenance Report (T&M) form in Appendix C, which a licensed backflow-prevention-assembly tester must fill out and sign, requires that the licensed BPAT certify whether the installation of the assembly complies with manufacturer recommendations and local codes. The BPAT then forwards the **signed original** to the PWS, which is required to retain it. If the BPAT submits a form to the PWS indicating improper installation of a backflow prevention assembly, even though it passed the test, the PWS must arrange for the reinstallation of the assembly in accordance with manufacturer recommendations and local codes.

Licensed BPATs are qualified to test and repair assemblies on any domestic, commercial, industrial, or irrigation service.

There is an additional requirement for BPATs who test and repair assemblies on fire-suppression systems or fire lines. BPATs may test an assembly on these systems **only** if they are permanently employed by an approved fire-line contractor. This is due to the additional alerting apparatus and wiring that is located on the backflow prevention assembly. It is critical that the BPAT be properly trained to leave the assembly in proper functioning order after the test. A mistake could risk lives and property.

Under Texas Insurance Code Section 6003.002 (Fire Sprinkler Rules) there are certain authorities and individuals to which the rules do not apply, like owners or lessees. If the Fire Sprinkler Rules do not apply, then permanent employment of the BPAT by a fire-line contractor may not be necessary; however, the requirement to obtain a backflow prevention assembly license will remain. More information on backflow prevention on fire suppression systems appears in *Backflow Protection on Water-Based Fire Protection Systems* (TCEQ publication RG-345), available at:

<www.tceq.texas.gov/publications/rg/rg-345.html>

If, during a routine test of a backflow prevention assembly, the BPAT determines that the assembly will not pass the test and needs repair, then the assembly must be repaired and retested after repair. Otherwise, it cannot be said that the backflow prevention assembly passed the test. This is documented by the BPAT in the official T&M form located in Appendix C of this guide.

To promote consistency across the state and provide for a common, fundamental knowledge base on testing backflow prevention assemblies, the TCEQ requires approved training providers to teach the testing procedures that appear in the latest edition of the *Manual of Cross-Connection Control* from the University of Southern California's Foundation for Cross-Connection Control and Hydraulic Research. This manual may be obtained from the USC website at <www.usc.edu/dept/fccchr/>.

For maximal protection of the public health, these procedures are designed to fail an assembly **before** it will allow backflow and contaminate the potable-water supply. An individual who wishes to obtain a license to test backflow prevention assemblies must pass a written and practical test based on the USC field-test procedures.

The gauges that BPATs use to test backflow prevention assemblies are very sensitive and accurate in measuring pressure differentials. If these gauges are not working properly, there is a risk that a backflow prevention assembly could pass a test but not be functioning correctly. Therefore, licensed BPATs must have their test gauges tested for accuracy at least once per year [30 TAC 290.44(h)(4)(B)]. The BPAT must then document the date when the gauges were tested for accuracy on each T&M report. More information on testing gauges may be found in *Accuracy Testing of Gauges Used for Testing Backflow-Prevention Assemblies* (RG-493).

Many smaller PWSs do not have licensed BPATs on staff. Instead, they may notify customers when the backflow prevention assembly installed at their site is due for testing and require those customers to have the assembly tested. This letter should notify the customer that the water will have to be temporarily turned off, allowing the customer to make any necessary accommodations.

For convenience, these notifications may include a list of local licensed BPATs that the customer can choose from. The PWS should be aware of any restrictions for recommending private companies before providing a list. Depending on the type of ownership, it may be necessary for you to include a disclaimer establishing that the list of BPATs does not constitute an endorsement by the PWS. Another option is to generate a list of BPATs by conducting a search of the TCEQ online operator-licensing database at:

<www.tceq.texas.gov/goto/lic_reg_search>

The TCEQ's Occupational Licensing Section has information available regarding the BPAT license. You can telephone the section at 512-239-6133 or visit its Web page at:

<www.tceq.texas.gov/licensing>

Some PWSs require BPATs testing assemblies in their service area to register with them. This gives the PWS an advantage because it allows the system to determine that the BPAT's license is current, that the BPAT's test gauge has been tested for accuracy within the last year, and that the testers are using the correct test report or a TCEQ-approved alternate.

Fees and Payment for Backflow Prevention Assembly Testing

Payment for testing a backflow prevention assembly usually takes one of three routes:

- A PWS with one or more appropriately licensed employees may have them conduct tests of backflow prevention assemblies in its service area and charge the customer a fee established by the PWS and approved by its governing body—or established by the PUC in the case of an investor-owned utility.
- A PWS may require its customers to have the backflow prevention assembly tested. In this case, the customer usually hires a private BPAT and pays for the test, and the BPAT submits the test report to the water utility.
- A PWS may give its customers the option of having the backflow prevention assembly tested by a private company or having the water-utility staff come out and conduct the test.

A PWS that requires the customer to have an assembly tested must ensure that a TCEQ-licensed BPAT tested the backflow prevention assembly and that the test results were recorded on the correct form (TCEQ-20700, Backflow Prevention Assembly Test and Maintenance Report).

Exercise caution if you have licensed individuals on the PWS staff and those individuals choose to use their license to generate income on their own time. For example, it would not be appropriate for your staff, as part of doing their job with the PWS, to require the installation or testing of a backflow preventer and then offer to install or test the backflow preventer for a fee payable to the tester, as opposed to a fee included in the monthly water bill payable to the local jurisdiction.

Certification and Approval of Backflow Prevention Assemblies

The TCEQ rules (30 TAC 290) do not currently require certification or approval of backflow-prevention assemblies. If a PWS would like to adopt a requirement or restriction identifying the specific backflow-prevention assemblies that can be installed in its service area, it should clearly state the requirement or restriction in its ordinance, regulations, or service agreement.

For any restrictions a PWS places on which backflow-prevention assemblies it approves, valid reasons are critical. Aesthetics such as color or appearance will not suffice as valid reasons to exclude or not approve a backflow prevention assembly. It is best to rely on approval or certification by an organization that specifically lists or approves backflow prevention assemblies. Field testing by these organizations is a crucial aspect of the

approval process. Several U.S. organizations maintain standards for testing and certification of backflow prevention assemblies, including:

- the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research
- the American Society of Sanitary Engineers
- the International Association of Plumbing and Mechanical Officials

The TCEQ regulations on landscape irrigation **do require** approval of backflow prevention assemblies before use on irrigation systems [30 TAC 344.50(a)].

7. Records and Record Retention

The goal of good record keeping is to maintain accurate, well documented records and to be able to supply records to appropriate persons when needed. People who need the information may be administrators, staff, members of the public, and regulators. This goal can only be accomplished by records management—that is, the application of proven management techniques to the creation, use, maintenance, retention, preservation, and disposal of records. An effective records-management program should allow for the systematic control of records throughout their life cycle—from creation or receipt, through use and maintenance, to final disposition.

The records kept by a PWS show that the system is taking actions to administer an effective cross-connection control program and is protecting the public water supply. For example, if there is a backflow incident in its service area, the PWS can show that a CSI has been conducted, that all appropriate backflow prevention assemblies are present, and that each was working properly at the time of testing.

Backflow Prevention Assembly Test and Maintenance Reports (T&M Forms)

T&M forms are primarily used to record the results of testing a backflow prevention assembly, along with other pertinent information. A sample T&M form appears in Appendix C. Sometimes, a proactive PWS wishes to capture other information from the testing of a backflow prevention assembly that is not listed in the official T&M Form. The TCEQ allows for alternate forms to be developed and used; however, those alternate forms must receive approval from the TCEQ before their being placed in use. Frequently, a PWS will develop its own form, receive approval for its use, and require any BPAT who wishes to test in its service area to use only its approved form. The TCEQ requires that the PWS retain signed, hard-copy original T&M Forms for three years.

At a minimum, before accepting a test report, a PWS should verify that:

- The assembly passed the test.
- The assembly was installed correctly.
- The gauges used were tested for accuracy.
- The date when the assembly was tested is within a year of the date when the test gauge was tested for accuracy.
- The tester's license is current.
- The assembly is not a new installation needing to be added to the tracking program.

PWSs should develop a procedure to address cases in which they receive a report indicating a failed test. Some possible considerations would be to determine the risk

posed by that connection, the cause of the failure, the time needed to correct the failing backflow preventer, and the date for a follow-up test, and monitoring the status of the backflow preventer.

The Customer Service Inspection Certificate

The CSI Certificate is used to record the results of the CSI. As with the T&M Form, you are to use the TCEQ's official CSI Certificate. A sample of that form appears in Appendix D. However, a PWS may develop its own form or make changes to the official form, as long as the alternate form has received TCEQ approval. CSI certificates must be retained for at least 10 years or kept as a permanent record of the PWS.

Experience has shown that distributing records in the following order has proven beneficial to PWSs:

1. The PWS retains the original.
2. The customer receives a copy.
3. The BPAT or CSI inspector keeps a copy.

Electronic Record Keeping

With changes in technology, PWSs are trending toward generating, using, and maintaining electronic versions of records. The TCEQ requires the PWS to retain signed hard-copy original records, or copies in the case of a CSI certificate. For this reason, an electronic form is considered an alternate form and must receive approval. Case by case, a PWS may receive approval to use the internet or another technological medium to comply with the TCEQ's record-keeping requirements. The use of unique user names and passwords in large part serves the same purpose as signing a hard-copy original. Some of the key questions which should be answered when requesting approval are:

1. What are the deviations from the official TCEQ forms?
2. What precautions have you taken to prevent data loss?
3. What precautions have you taken to ensure data integrity (fraud prevention, consistency with USC test procedures)?
4. How will the software comply with record-retention requirements (BPAT retention: three years; CSI retention: 10 years or indefinitely)?
5. Will the PWS be able to produce a hard copy of the records when requested during a comprehensive compliance inspection by the TCEQ regional investigators?
6. Will training be available to the PWS to ensure that its staff knows enough to be able to supply required information during a comprehensive compliance inspection?
7. Will the software identify when values that are out of acceptable parameters are entered?
8. Will the software alert the tester that a backflow preventer has failed a test?
9. Will the software record that a backflow preventer failed a test, was repaired, and passed the test after repair?
10. What precautions are taken when the tester has successfully tested a backflow preventer and, for some reason, the software is not available (malfunction, user error, etc.)?
11. Where an unscrupulous person is misusing the software, can it confirm that the tester actually went on-site to conduct the test?

Keeping track of the locations and test due dates of all the backflow prevention assemblies installed within a PWS's service area can be complicated. Software that has been created

specifically to help PWS personnel with this task is available for purchase. An online search for this software will give you an idea of the options available. An alternative is for you to develop your own electronic tracking system—for example, using a spreadsheet program.

8. Landscape Irrigation

Rules for landscape irrigation in 30 TAC 344 may have an impact on a PWS's cross-connection control program because they have requirements for backflow prevention as well as detailed installation requirements for backflow prevention assemblies. Typically, irrigation systems are a direct cross-connection to the potable-water supply, which requires backflow prevention. Some typical hazards posed by an irrigation system are:

- Organisms (parasites, insect larvae, pathogens) living in the water of the irrigation system.
- Exposure of the sprinkler heads to fertilizers, herbicides, or pesticides in the yard.
- Exposure of the sprinkler heads to fecal material from animals living on the site (dogs, cats, rodents, farm animals).
- Direct connection of chemical additives to the irrigation system.
- Connection of alternative water sources (creeks, rainwater harvesting systems, lakes, private wells, stock tanks, etc.).

Backflow will introduce these elements into the potable-water supply at the site and possibly into the water main. Backflow is especially problematic when pathogenic organisms are introduced into the potable-water supply and may propagate to produce waterborne illness.

The backflow requirements for irrigation systems make it logical that the landscape-irrigation rules and the rules on cross-connection control and backflow prevention are interrelated. PWSs that have not considered the impact of these rules may need to take action to learn about them and implement additional protective measures within their cross-connection control program.

To assist public water suppliers, the TCEQ has published *Landscape Irrigator's Rule Compilation* (RG-470), available online at <www.tceq.texas.gov/publications/rg/rg-470.html>.

You can telephone the TCEQ Landscape Irrigation Program at 512-239-5296 or visit its Web page at <www.tceq.texas.gov/goto/lawn>

In order to conserve water, many irrigation systems are supplied with reclaimed water. RG-470 addresses the use of reclaimed water for irrigation systems. It describes requirements for backflow prevention, color coding, and necessary signs. "Reclaimed water" is defined in 30 TAC 210. It refers to wastewater that is discharged under a TCEQ "210 Permit" for beneficial use. If the beneficial use involves human contact, the water is considered Type 1 reclaimed water; if not, the water is called Type 2 reclaimed water.

Many irrigation systems are installed on sites that have an on-site sewage facility (such as a septic tank). The existence of the OSSF elevates the classification of the irrigation system to a health hazard requiring the installation of an RP. Before 2009, a Double-Check Valve Assembly was allowed on irrigation systems installed on sites that also had an OSSF. As a result, there are currently installed irrigation systems that do not have the correct backflow prevention assembly. To address this, the current version of the landscape-irrigation rules states:

> 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. [30 TAC 344.52(a)]

Historically, this regulation was taken to mean that systems that were installed before 2009 were essentially grandfathered until they required "major maintenance, alteration, repair, or service." When the backflow preventer can no longer be repaired in line and must be replaced, it must be upgraded to the required RP.

Since 2009, those installing irrigation systems on sites that also have an OSSF must be aware of the change in the required backflow prevention and install the RP.

Licensed irrigators may install backflow prevention assemblies on irrigation systems. The irrigator must use the correct type of assembly taking into account:

- the hydraulic conditions (back pressure)
- hazard analysis
- testing requirements
- installation requirements

Though a licensed irrigator may install the device, it must be tested by a licensed BPAT upon installation.

9. Education and Training

PWS staff education is important to every aspect of a program. Training, a specific kind of education, is even more critical. Training gives an individual the critical information needed to carry out specific tasks. Specific personnel will require specific training, but backflow, what a cross-connection is, and how contaminated water from a customer's premises can get into the potable water supply, are important concepts **all** personnel need to comprehend. Contamination involving backflow is usually discovered through water quality complaints, and understanding the details of cross-connection control measures is a necessity. Following are two examples emphasizing the importance of trained water-system staff:

Example 1

Personnel at a particular PWS receive basic training on some concepts of cross-connection control. The meter readers, repair personnel, and anyone having a field job are requested to inform the program coordinator of any potential hazards they notice—such as auxiliary water sources or extensive plumbing work.

A meter reader observes that large pieces of equipment are being brought into a facility. The coordinator makes inquiries and determines that the facility has totally changed the type of work it conducts, and will now be using water using equipment that has contaminants under pressure for various processes. It will now need an RP installed at the meter. Without the knowledge and actions of the field personnel, the potable-water supply would have been vulnerable to the contamination hazards at that facility.

Example 2

A water-quality inspector receives a complaint of tiny bubbles in the water at a restaurant. Upon investigating, the inspector finds what appears to be air in the water and tells the restaurant personnel to flush their internal piping system and the PWS will open the fire hydrants to flush any air out of the water main. This doesn't solve the problem. Many times what appears to be air in the water at restaurants is actually carbon

dioxide associated with the carbonated beverage dispensing unit. These dispensers have CO_2 canisters that have from 150 to 400 psi of pressure and can backflow the CO_2 gas into the potable water system if the backflow preventer fails. When the CO_2-water mixture comes in contact with copper, it leaches out copper due to the acidity of the mixture. The leached copper then ends up in drinks, making people sick. The water-quality inspector missed the problem because he did not understand cross-connection control and backflow prevention.

Customer education is also a critical public-relations tool. Whenever a customer is required to spend money on anything, even if it is to protect public health, good customer education helps the process go smoothly. Educating customers about the hazards of cross-connections and backflow will help them recognize the benefits of protecting their potable water supply by reducing their risk from health hazards, reducing their liability, and increasing their willingness to help the PWS protect the potable-water system. Customers who understand cross-connection control can become allies in preventing further cross-connections at their facilities and in educating other customers.

The TCEQ central office has personnel available to answer questions about establishing a program or interpreting state rules and regulations. Contact the Water Supply Division at 512-239-4691 and ask to speak to someone about backflow prevention and cross-connection control.

10. Where to Find More Information

From the TCEQ

Licensing for Backflow Prevention Assembly Testers and Customer-Service Inspectors

Personnel from the TCEQ's Occupational Licensing Section can answer routine inquiries about BPAT and CSI licenses. The office is located on the first floor in Building D of the TCEQ complex, located at 12100 Park 35 Circle in Austin. The office hours are 8 a.m. to 5 p.m. Monday through Friday (excluding holidays). You can contact them by phone at 512-239-6133—press *1* for new applications or exams, or press *2* for renewals. You can reach the Occupational Licensing Section by fax at 512-239-6272 or by e-mail at <licenses@tceq.texas.gov>. The mailing address is:

Backflow Prevention Assembly Tester Licensing Program, MC 178
or
Customer Service Inspection Licensing Program, MC 178
TCEQ
PO Box 13087
Austin TX 78711-3087

Helpful phone numbers include:

Plans and Technical Review Section	512-239-4691
Public Drinking Water Section	512-239-4691
Districts Section	512-239-4691
Publications	512-239-0028

By mail:

Plan and Technical Review Section, MC 159
TCEQ
PO Box 13087
Austin TX 78711-3087

On the Web:

To view the rules that govern public water suppliers, go to <www.tceq.state.tx.us>. For *Rules and Regulations for Public Water Systems* (RG-195), go to <www.tceq.texas.gov/publications/rg/rg-195.html>.

Also available from the TCEQ: *A Consumer's Guide to Backflow Prevention in Texas* (GI-411, available in English and Spanish), available at <www.tceq.texas.gov/publications/gi/gi-411.html> (English) or <www.tceq.texas.gov/publications/gi/gi-411esp.html> (Spanish). Information about the TCEQ's Cross-Connection Control Program is available at <www.tceq.texas.gov/goto/ccc/>.

Texas State Board of Plumbing Examiners

By phone: 800-845-6584

On the Web: <www.tsbpe.state.tx.us>

Purchase a Copy of a State-Approved Plumbing Code

International Plumbing Code

International Code Council Store
11711 West 85th Street
Lenexa KS 66214
800-786-4452
<www.iccsafe.org>

Uniform Plumbing Code

IAPMO Order Desk
5001 East Philadelphia Street
Ontario CA 91761
800-854-2766
<www.iapmostore.org>

Other Sources of Information about Cross-Connection Control

American Society of Sanitary Engineering

ASSE International Office
901 Canterbury, Suite A
Westlake OH 44145
440-835-3040

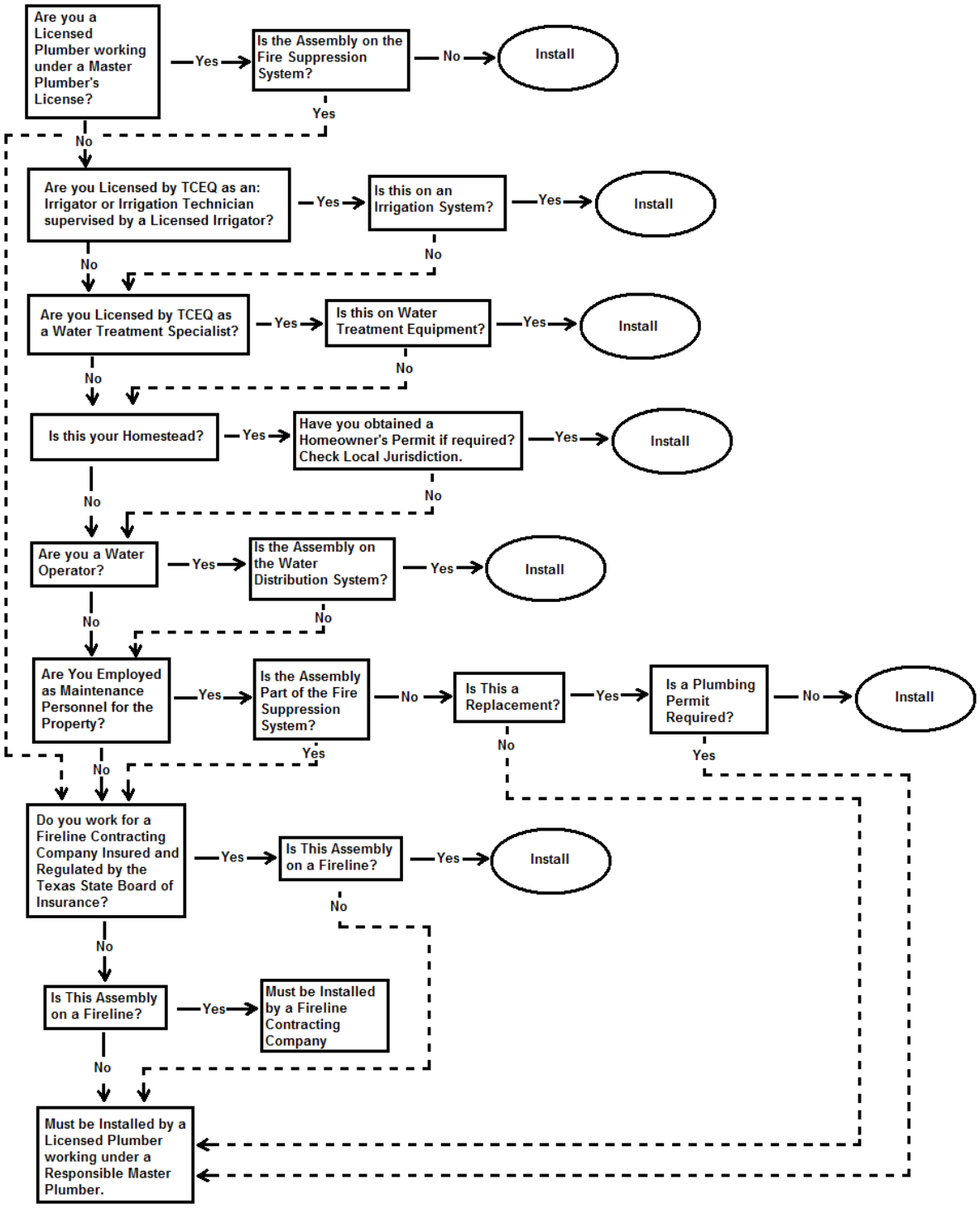
American Water Works Association

6666 West Quincy Ave.
Denver CO 80235-3098
800-366-0107

Foundation for Cross-Connection Control and Hydraulic Research

University of Southern California
KAP-200 University Park MC-2531
Los Angeles CA 90089-2531
866-545-6340

Appendix A: Can I Install a Backflow-Prevention Assembly?



Note: All backflow prevention assemblies must be tested by a licensed BPAT upon installation.

An accessible version of this chart is available at <www.tceq.texas.gov/goto/alt/rg478>.

Appendix B: Sample Service Agreement [from 30 TAC 290.47(b)]

I. PURPOSE. The NAME OF WATER SYSTEM is responsible for protecting the drinking water supply from contamination or pollution which could result from improper system construction or configuration on the retail connection owner's side of the meter. The purpose of this service agreement is to notify each customer of the restrictions which are in place to provide this protection. The public water system enforces these restrictions to ensure the public health and welfare. Each retail customer must sign this agreement before the NAME OF WATER SYSTEM will begin service. In addition, when service to an existing retail connection has been suspended or terminated, the water system will not re-establish service unless it has a signed copy of this agreement.

II. RESTRICTIONS. The following unacceptable practices are prohibited by State regulations.

A. No direct connection between the public drinking water supply and a potential source of contamination is permitted. Potential sources of contamination shall be isolated from the public water system by an air-gap or an appropriate backflow prevention device.

B. No cross-connection between the public drinking water supply and a private water system is permitted. These potential threats to the public drinking water supply shall be eliminated at the service connection by the installation of an air-gap or a reduced pressure-zone backflow prevention device.

C. No connection which allows water to be returned to the public drinking water supply is permitted.

D. No pipe or pipe fitting which contains more than 8.0% lead may be used for the installation or repair of plumbing at any connection which provides water for human use.

E. No solder or flux which contains more than 0.2 percent lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

III. SERVICE AGREEMENT. The following are the terms of the service agreement between the NAME OF WATER SYSTEM (the Water System) and NAME OF CUSTOMER (the Customer).

A. The Water System will maintain a copy of this agreement as long as the Customer and/or the premises is connected to the Water System.

B. The Customer shall allow his property to be inspected for possible cross-connections and other potential contamination hazards. These inspections shall be conducted by the Water System or its designated agent prior to initiating new water service; when there is reason to believe that cross-connections or other potential contamination hazards exist; or after any major changes to the private water distribution facilities. The inspections shall be conducted during the Water System's normal business hours.

C. The Water System shall notify the Customer in writing of any cross-connection or other potential contamination hazard which has been identified during the initial inspection or the periodic reinspection.

D. The Customer shall immediately remove or adequately isolate any potential cross-connections or other potential contamination hazards on his premises.

E. The Customer shall, at his expense, properly install, test, and maintain any backflow prevention device required by the Water System. Copies of all testing and maintenance records shall be provided to the Water System.

IV. ENFORCEMENT. If the Customer fails to comply with the terms of the Service Agreement, the Water System shall, at its option, either terminate service or properly install, test, and maintain an appropriate backflow prevention device at the service connection. Any expenses associated with the enforcement of this agreement shall be billed to the Customer.

CUSTOMER'S SIGNATURE: _____

DATE: _____

Appendix C: Backflow Prevention Assembly Test and Maintenance Report (Form TCEQ-20700)

This is a sample only. For the official form please go to <www.tceq.texas.gov/goto/cc>.

Texas Commission on Environmental Quality

BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT

The following form must be completed for each assembly tested. A signed and dated original must be submitted to the public water supplier for recordkeeping *purposes:

NAME OF PWS:	
PWS ID#:	
MAILING ADDRESS:	
CONTACT PERSON:	
LOCATION OF SERVICE:	

The backflow prevention assembly detailed below has been tested and maintained as required by commission regulations and is certified to be operating within acceptable parameters.

TYPE OF ASSEMBLY: ☐ Reduced Pressure Principle ☐ Reduced Pressure Principle-Detector
☐ Double Check Valve ☐ Double Check-Detector
☐ Pressure Vacuum Breaker ☐ Spill-Resistant Pressure Vacuum Breaker

Manufacturer:		Size:	
Model Number:		Located At:	
Serial Number:			

Is the assembly installed in accordance with manufacturer recommendations and/or local codes? ☐ Yes ☐ No

	Reduced Pressure Principle Assembly			Pressure Vacuum Breaker	
	Double Check Valve Assembly		Relief Valve	Air Inlet	Check Valve
	1st Check	2nd Check			
Initial Test	Held at ____ psid Closed Tight ☐ Leaked ☐	Held at ____ psid Closed Tight ☐ Leaked ☐	Opened at ___ psid Did not open ☐	Opened at ____ psid Did not open ☐	Held at _____ psid Leaked ☐
Repairs and Materials Used**					
Test After Repair	Held at ____ psid Closed Tight ☐	Held at ____ psid Closed Tight ☐	Opened at ___ psid	Opened at ____ psid	Held at _____ psid

Test gauge used:

Make/Model:		SN:		Date tested for accuracy:	
Remarks:					

The above is certified to be true at the time of testing.

Firm Name:		Certified Tester Name (Print/Type):	

Firm Address:		Certified Tester Name (Signature):			
Firm Phone #:		Cert. Tester No.:		Date of Test:	

* TEST RECORDS MUST BE KEPT FOR AT LEAST THREE YEARS
** USE ONLY MANUFACTURER'S REPLACEMENT PARTS

Appendix D: Customer Service Inspection Certificate (Form TCEQ-20699)

This is a sample only. For the official form please go to <www.tceq.texas.gov/goto/cc>.

Texas Commission on Environmental Quality
Customer Service Inspection Certificate

Name of PWS:	
PWS ID #:	
Location of Service:	

Reason for Inspection: New construction ..... ☐†
Existing service where contaminant hazards are suspected ..... ☐†
Major renovation or expansion of distribution facilities ..... ☐†

I _____, upon inspection of the private water distribution facilities connected to the aforementioned public water supply do hereby certify that, to the best of my knowledge:

Compliance	Non-Compliance		
☐ ☐	☐	(1)	No direct connection between the public drinking water supply and a potential source of contamination exists. Potential sources of contamination are isolated from the public water system by an air gap or an appropriate backflow prevention assembly in accordance with Commission regulations.
† ☐	☐	(2)	No cross-connection between the public drinking water supply and a private water system exists. Where an actual air gap is not maintained between the public water supply and a private water supply, an approved reduced pressure principle backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a certified backflow prevention assembly tester.
† ☐	☐	(3)	No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the public water supply.
☐ ☐	☐	(4)	No pipe or pipe fitting which contains more than 8.0% lead exists in private water distribution facilities installed on or after July 1, 1988 and prior to January 4, 2014.
☐ ☐	☐	(5)	Plumbing installed after January 4, 2014 bears the expected labeling indicating ≤0.25% lead content. If not properly labeled, please provide written comment.
☐ ☐	☐	(6)	No solder or flux which contains more than 0.2% lead exists in private water distribution facilities installed on or after July 1, 1988.

I further certify that the following materials were used in the installation of the private water distribution facilities:

Service lines; Lead ☐ Copper ☐ PVC ☐ Other ☐
Solder; Lead ☐ Lead Free ☐ Solvent Weld ☐ Other ☐

I recognize that this document shall become a permanent record of the aforementioned Public Water System and that I am legally responsible for the validity of the information I have provided.

Remarks:	

Signature of Inspector:		Registration Number:	
Title:		Type of Registration:	
Date:			

Appendix E: Rules Related to Cross-Connection Control and Backflow Prevention

The following rules have been extracted from the TAC and reformatted for ease of use. In the case of any discrepancy between this guide and the rules published at the Texas Secretary of State's website <www.sos.state.tx.us>, the SOS site shall apply.

§290.38. Definitions

The following words and terms, when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise. If a word or term used in this chapter is not contained in the following list, its definition shall be as shown in Title 40 Code of Federal Regulations (CFR) §141.2. Other technical terms used shall have the meanings or definitions listed in the latest edition of The Drinking Water Dictionary, prepared by the American Water Works Association.

§290.38(2) Air gap—The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, fixture, receptor, sink, or other assembly and the flood level rim of the receptacle. The vertical, physical separation must be at least twice the diameter of the water supply outlet, but never less than 1.0 inch.

...

§290.38(16) Contamination—The presence of any foreign substance (organic, inorganic, radiological or biological) in water which tends to degrade its quality so as to constitute a health hazard or impair the usefulness of the water.

§290.38(17) Cross-connection—A physical connection between a public water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree in the treatment process.

...

§290.38(20) Disinfection—A process which inactivates pathogenic organisms in the water by chemical oxidants or equivalent agents.

§290.38(21) Distribution system—A system of pipes that conveys potable water from a treatment plant to the consumers. The term includes pump stations, ground and elevated storage tanks, potable water mains, and potable water service lines and all associated valves, fittings, and meters, but excludes potable water customer service lines.

§290.38(22) Drinking water—All water distributed by any agency or individual, public or private, for the purpose of human consumption or which may be used in the preparation of foods or beverages or for the cleaning of any utensil or article used in the course of preparation or consumption of food or beverages for human beings. The term "Drinking Water" shall also include

all water supplied for human consumption or used by any institution catering to the public.

§290.38(23) Drinking water standards—The commission rules covering drinking water standards in Subchapter F of this chapter (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Systems).

...

§290.38(31) Health hazard—A cross-connection, potential contamination hazard, or other situation involving any substance that can cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the potable drinking water supply.

§290.38(32) Human consumption—Uses by humans in which water can be ingested into or absorbed by the human body. Examples of these uses include, but are not limited to drinking, cooking, brushing teeth, bathing, washing hands, washing dishes, and preparing foods.

...

§290.38(53) Nonhealth hazard—A cross-connection, potential contamination hazard, or other situation involving any substance that generally will not be a health hazard, but will constitute a nuisance, or be aesthetically objectionable, if introduced into the public water supply.

...

§290.38(57) Plumbing inspector—Any person employed by a political subdivision for the purpose of inspecting plumbing work and installations in connection with health and safety laws and ordinances, who has no financial or advisory interest in any plumbing company, and who has successfully fulfilled the examinations and requirements of the Texas State Board of Plumbing Examiners.

§290.38(58) Plumbing ordinance—A set of rules governing plumbing practices which is at least as stringent and comprehensive as one of the following nationally recognized codes:

§290.38(58)(A) the International Plumbing Code; or

§290.38(58)(B) the Uniform Plumbing Code.

§290.38(59) Potable water customer service line—The sections of potable water pipe between the customer's meter and the customer's point of use.

§290.38(60) Potable water service line—The section of pipe between the potable water main to the customer's side of the water meter. In cases where no customer water meter exists, it is the section of pipe that is under the ownership and control of the public water system.

§290.38(61) Potable water main—A pipe or enclosed constructed conveyance operated by a public water system which is used for the transmission or distribution of drinking water to a potable water service line.

§290.38(62) Potential contamination hazard—A condition which, by its location, piping or configuration, has a reasonable probability of being used incorrectly, through carelessness, ignorance, or negligence, to create or cause to be created a backflow condition by which contamination can be introduced into the water supply. Examples of potential contamination hazards are:

§290.38(62)(A) bypass arrangements;

§290.38(62)(B) jumper connections;

§290.38(62)(C) removable sections or spools; and

§290.38(62)(D) swivel or changeover assemblies.

...

§290.38(73) Service line—A pipe connecting the utility service provider's main and the water meter, or for wastewater, connecting the main and the point at which the customer's service line is connected, generally at the customer's property line.

§290.42. Water Treatment

§290.42(d)(2) All plant piping shall be constructed so as to be thoroughly tight against leakage. No cross-connection or interconnection shall be permitted to exist in a filtration plant between a conduit carrying filtered or post-chlorinated water and another conduit carrying raw water or water in any prior stage of treatment.

§290.42(d)(2)(A) Vacuum breakers must be provided on each hose bibb within the plant facility.

§290.42(d)(2)(B) No conduit or basin containing raw water or any water in a prior stage of treatment shall be located directly above, or be permitted to have a single common partition wall with another conduit or basin containing finished water.

§290.42(d)(2)(C) Make-up water supply lines to chemical feeder solution mixing chambers shall be provided with an air gap or other acceptable backflow prevention device.

§290.42(d)(2)(D) Filters shall be located so that common walls will not exist between them and aerators, mixing and sedimentation basins or clearwells. This rule is not strictly applicable, however, to partitions open to view and readily accessible for inspection and repair.

§290.42(d)(2)(E) Filter-to-waste connections, if included, shall be provided with an air gap connection to waste.

§290.42(d)(2)(F) Air release devices on treated waterlines shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer corrosion-resistant screening material or an equivalent acceptable to the executive director.

§290.42(d)(11)(F)(vi) When used, surface filter wash systems shall be installed with an atmospheric vacuum breaker or a reduced pressure principle backflow assembly in the supply line. If an atmospheric vacuum breaker is used it shall be installed in a section of the supply line through which all the water passes and which is located above the overflow level of the filter.

§290.42(d)(13)(A) A plant that is built or repainted after October 1, 2000 must use the following color code. The color code to be used in labeling pipes is as follows:

Letters	Color of Pipe
Potable Water	Light Blue
Compressed Air	Light Green
Instrument Air	Light Green with Dark Green Bands
Chlorine (gas, liquid, or vent)	Yellow
Chlorine (solution)	Yellow with Red Bands
Liquid Alum	Yellow with Orange Bands
Alum (solution)	Yellow with Green Bands
Ammonia	Yellow with Brown Bands
Chlorine Dioxide (solution)	Yellow with Blue Bands
Ferric chloride	Brown with Red Bands
Ferric sulfate	Brown with Yellow Bands
Polymers	White with Green Bands
Liquid caustic	White with Red Bands
Caustic (solution)	White with Orange Bands
Fluoride	White with Yellow Bands
Ozone	Stainless Steel with White Bands
Settled Water	Green
Filter Effluent	Light Blue
Backwash Supply	Light Blue
Backwash Waste	Dark Gray
Drain	Dark Gray
Raw Water	Tan

§290.42(d)(13)(B) A plant that was repainted before October 1, 2000 may use an alternate color code. The alternate color code must provide clear visual distinction between process streams.

§290.42(d)(13)(C) The system must maintain clear, current documentation of its color code in a location easily accessed by all personnel.

§290.43. Water Storage.

§290.43(c)(7) Each clearwell or potable water storage tank shall be provided with a means of removing accumulated silt and deposits at all low points in the bottom of the tank. Drains shall not be connected to any waste or sewage disposal system and shall be constructed so that they are not a potential agent in the contamination of the stored water.

§290.43(c)(9) No tanks or containers shall be used to store potable water that have previously been used for any non-potable purpose. Where a used tank is proposed for use, a letter from the previous owner or owners must be submitted to the Commission which states the use of the tank.

§290.44. Water Distribution.

§290.44(b) Lead ban. The following provisions apply to the use of lead in plumbing.

§290.44(b)(1) The use of pipes and pipe fittings that contain more than 0.25% lead or solders and flux that contains more than 0.2% lead is prohibited in the following circumstances:

§290.44(b)(1)(A) for installation or repair of any public water supply; and

§290.44(b)(1)(B) for installation or repair of any plumbing in a residential or nonresidential facility providing water for human consumption and connected to a public drinking water supply system.

§290.44(b)(2) This requirement will be waived for lead joints that are necessary for repairs to cast iron pipe.

...

§290.44(h) Backflow, siphonage.

§290.44(h)(1) No water connection from any public drinking water supply system shall be allowed to any residence or establishment where an actual or potential contamination hazard exists unless the public water facilities are protected from contamination.

§290.44(h)(1)(A) At any residence or establishment where an actual or potential contamination hazard exists, additional protection shall be required at the meter in the form of an air gap or backflow prevention assembly. The type of backflow prevention assembly required shall be determined by the specific potential hazard identified in §290.47(i) of this title (relating to Appendices).

§290.44(h)(1)(B) At any residence or establishment where an actual or potential contamination hazard exists and an adequate internal cross-connection control program is in effect, backflow protection at the water service entrance or meter is not required.

§290.44(h)(1)(B)(i) An adequate internal cross-connection control program shall include an annual inspection and testing by a certified backflow prevention assembly tester on all backflow prevention assemblies used for health hazard protection.

§290.44(h)(1)(B)(ii) Copies of all such inspection and test reports must be obtained and kept on file by the water purveyor.

§290.44(h)(1)(B)(iii) It will be the responsibility of the water purveyor to ensure that these requirements are met.

§290.44(h)(2) No water connection from any public drinking water supply system shall be connected to any condensing, cooling, or industrial process or any other system of nonpotable usage over which the public water supply system officials do not have sanitary control, unless the said connection is made in accordance with the requirements of paragraph (1) of this subsection. Water from such systems cannot be returned to the potable water supply.

§290.44(h)(3) Overhead bulk water dispensing stations must be provided with an air gap between the filling outlet hose and the receiving tank to protect against back siphonage and cross-contamination.

§290.44(h)(4) All backflow prevention assemblies that are required according to this section and associated table located in §290.47(i) of this title shall be tested upon installation by a recognized backflow prevention assembly tester and certified to be operating within specifications. Backflow prevention assemblies which are installed to provide protection against health hazards must also be tested and certified to be operating within specifications at least annually by a recognized backflow prevention assembly tester.

§290.44(h)(4)(A) Recognized backflow prevention assembly testers shall have completed an executive director approved course on cross-connection control and backflow prevention assembly testing, pass an examination administered by the executive director, and hold a current license as a backflow prevention assembly tester.

§290.44(h)(4)(A)(i) Backflow prevention assembly testers are qualified to test and repair assemblies on any domestic, commercial, industrial, or irrigation service.

§290.44(h)(4)(A)(ii) Backflow prevention assembly testers may test and repair assemblies on firelines only if they are permanently employed by an Approved Fireline Contractor. The State Fire Marshal's office requires that any person performing maintenance on firelines must be employed by an Approved Fireline Contractor.

§290.44(h)(4)(B) Gauges used in the testing of backflow prevention assemblies shall be tested for accuracy annually in accordance with the University of Southern California's Manual of Cross-Connection Control or the American Water Works Association Recommended Practice for Backflow

Prevention and Cross-Connection Control (Manual M14). Public water systems shall require testers to include test gauge serial numbers on "Test and Maintenance" report forms and ensure testers have gauges tested for accuracy.

§290.44(h)(4)(C) A test report must be completed by the recognized backflow prevention assembly tester for each assembly tested. The signed and dated original must be submitted to the public water supplier for recordkeeping purposes. Any form which varies from the format specified in commission Form No. 20700 must be approved by the executive director prior to being placed in use.

§290.44(h)(5) The use of a backflow prevention assembly at the service connection shall be considered as additional backflow protection and shall not negate the use of backflow protection on internal hazards as outlined and enforced by local plumbing codes.

§290.44(h)(6) At any residence or establishment where there is no actual or potential contamination hazard, a backflow prevention assembly is not required.

…

§290.44(i) Water hauling. When drinking water is distributed by tank truck or trailer, it must be accomplished in the following manner.

…

§290.44(i)(2)(E) Connections for filling and emptying the tank shall be properly protected to prevent the possible entrance of contamination. These openings must be provided with caps and keeper chains.

…

§290.44(j) If a structure is connected to a public water supply system and has a rainwater harvesting system, the structure must have appropriate cross-connection safeguards in accordance with subsection (h)(1) of this section.

§290.44(j)(1) A privately owned rainwater harvesting system with a capacity of more than 500 gallons that is connected to a public water system for a back-up supply shall have a backflow prevention assembly or an air gap installed at the storage facility for the harvested rainwater to ensure physical separation between the rainwater harvesting system and the public water system.

§290.44(j)(2) At each residence or facility where water from a rainwater harvesting system is used for potable purposes and there is a connection to a public water system, the public water system shall ensure that the rainwater harvesting system is installed and maintained by a master plumber or journeyman plumber licensed by the Texas State Board of Plumbing Examiners and who holds an endorsement issued by the Texas State Board of Plumbing Examiners as a Water Supply Protection Specialist.

§290.44(j)(3) A person who intends to connect a rainwater harvesting system to a public water system must give written notice of that intention to the municipality or the owner or operator of the public water system in which the rainwater harvesting system is located.

§290.44(j)(4) The public water system used as a back-up supply for the rainwater harvesting system may be connected only to the water storage tank and may not be connected to the plumbing of a structure.

§290.46. Minimum Acceptable Operating Practices for Public Drinking Water Systems

§290.46(f)(3) All public water systems shall maintain a record of operations.

...

§290.46(f)(3)(B) The following records shall be retained for at least three years: ...

§290.46(f)(3)(B)(v) the records of backflow prevention device programs; ...

§290.46(f)(3)(E) The following records shall be retained for at least ten years: ...

§290.46(f)(3)(E)(iv) copies of the Customer Service Inspection reports required by subsection (j) of this section; ...

[CSI Certificate retention: The CSI Certificate requires that it be retained permanently, whereas the rule references 10 years; therefore, a discrepancy exists. The TCEQ recommends that CSI Reports be retained permanently, as long as the inspected facility is in existence.]

...

§290.46(i) Plumbing ordinance. Public water systems must adopt an adequate plumbing ordinance, regulations, or service agreement with provisions for proper enforcement to insure that neither cross-connections nor other unacceptable plumbing practices are permitted (See §290.47(b) of this title (relating to Appendices)). Should sanitary control of the distribution system not reside with the purveyor, the entity retaining sanitary control shall be responsible for establishing and enforcing adequate regulations in this regard. The use of pipes and pipe fittings that contain more than 0.25% lead or solders and flux that contain more than 0.2% lead is prohibited for installation or repair of any public water supply and for installation or repair of any plumbing in a residential or nonresidential facility providing water for human consumption and connected to a public drinking water supply system. This requirement may be waived for lead joints that are necessary for repairs to cast iron pipe.

§290.46(j) Customer service inspections. A customer service inspection certificate shall be completed prior to providing continuous water service to new construction, on any existing service either when the water purveyor has reason to believe that cross-connections

or other potential contaminant hazards exist, or after any material improvement, correction, or addition to the private water distribution facilities. Any customer service inspection certificate form which varies from the format found in commission Form No. 20699 must be approved by the executive director prior to being placed in use.

§290.46(j)(1) Individuals with the following credentials shall be recognized as capable of conducting a customer service inspection certification.

§290.46(j)(1)(A) Plumbing Inspectors and Water Supply Protection Specialists licensed by the Texas State Board of Plumbing Examiners (TSBPE).

§290.46(j)(1)(B) Customer service inspectors who have completed a commission-approved course, passed an examination administered by the executive director, and hold current professional license as a customer service inspector.

§290.46(j)(2) As potential contaminant hazards are discovered, they shall be promptly eliminated to prevent possible contamination of the water supplied by the public water system. The existence of a health hazard, as identified in §290.47(i) of this title, shall be considered sufficient grounds for immediate termination of water service. Service can be restored only when the health hazard no longer exists, or until the health hazard has been isolated from the public water system in accordance with §290.44(h) of this title (relating to Water Distribution).

§290.46(j)(3) These customer service inspection requirements are not considered acceptable substitutes for and shall not apply to the sanitary control requirements stated in §290.102(a)(5) of this title (relating to General Applicability).

§290.46(k) Interconnection. No physical connection between the distribution system of a public drinking water supply and that of any other water supply shall be permitted unless the other water supply is of a safe, sanitary quality and the interconnection is approved by the executive director.

Appendix F: Assessment of Hazard and Selection of Assemblies [from 30 TAC 290.47(f)]

The following table lists many common hazards. It is not an all-inclusive list of the hazards that may be found connected to public water systems.

Premises Isolation: Description of Premises	**Assessment of Hazard**	**Required Assembly**
Aircraft and missile plants	Health	RPBA or AG
Animal feedlots	Health	RPBA or AG
Automotive plants	Health	RPBA or AG
Breweries	Health	RPBA or AG
Canneries, packing houses and rendering plants	Health	RPBA or AG
Commercial car wash facilities	Health	RPBA or AG
Commercial laundries	Health	RPBA or AG
Cold storage facilities	Health	RPBA or AG
Connection to sewer pipe	Health	AG
Dairies	Health	RPBA or AG
Docks and dockside facilities	Health	RPBA or AG
Dye works	Health	RPBA or AG
Food and beverage processing plants	Health	RPBA or AG
Hospitals, morgues, mortuaries, medical clinics, dental clinics, veterinary clinics, autopsy facilities, sanitariums, and medical labs	Health	RPBA or AG
Metal manufacturing, cleaning, processing, and fabrication plants	Health	RPBA or AG
Microchip fabrication facilities	Health	RPBA or AG
Paper and paper products plants	Health	RPBA or AG
Petroleum processing or storage facilities	Health	RPBA or AG
Photo and film processing labs	Health	RPBA or AG
Plants using radioactive material	Health	RPBA or AG
Plating or chemical plants	Health	RPBA or AG
Pleasure-boat marinas	Health	RPBA or AG
Private/Individual/Unmonitored Wells	Health	RPBA or AG
Reclaimed water systems	Health	RPBA or AG
Restricted, classified or other closed facilities	Health	RPBA or AG
Rubber plants	Health	RPBA or AG
Sewage lift stations	Health	RPBA or AG
Sewage treatment plants	Health	RPBA or AG
Slaughter houses	Health	RPBA or AG
Steam plants	Health	RPBA or AG
Tall buildings or elevation differences where the highest outlet is 80 feet or more above the meter	Nonhealth	DCVA

Internal Protection: Description of Cross Connection	**Assessment of Hazard**	**Required Assembly**
Aspirators	Nonhealth†	AVB
Aspirator (medical)	Health	AVB or PVB
Autoclaves	Health	RPBA
Autopsy and mortuary equipment	Health	AVB or PVB
Bedpan washers	Health	AVB or PVB
Connection to industrial fluid systems	Health	RPBA
Connection to plating tanks	Health	RPBA
Connection to salt-water cooling systems	Health	RPBA
Connection to sewer pipe	Health	AG
Cooling towers with chemical additives	Health	AG
Cuspidors	Health	AVB or PVB
Degreasing equipment	Nonhealth†	DCVA
Domestic space-heating boiler	Nonhealth†	RPBA
Dye vats or machines	Health	RPBA
Fire-fighting system (toxic liquid foam concentrates)	Health	RPBA
Flexible shower heads	Nonhealth†	AVB or PVB
Heating equipment		
Commercial	Nonhealth†	RPBA
Domestic	Nonhealth†	DCVA
Hose bibbs	Nonhealth†	AVB
Irrigation systems		
with chemical additives	Health	RPBA
without chemical additives	Nonhealth†	DCVA, AVB,or PVB
Kitchen equipment—Commercial	Nonhealth†	AVB
Lab bench equipment	Health or Nonhealth†	AVB or PVB
Ornamental fountains	Health	AVB or PVB
Swimming pools		
Private	Nonhealth†	PVB or AG
Public	Nonhealth†	RPBA or AG
Sewage pump	Health	AG
Sewage ejectors	Health	AG
Shampoo basins	Nonhealth†	AVB
Specimen tanks	Health	AVB or PVB
Steam generators	Nonhealth†	RPBA
Steam tables	Nonhealth†	AVB
Sterilizers	Health	RPBA
Tank vats or other vessels containing toxic substances	Health	RPBA
Trap primers	Health	AG
Vending machines	Nonhealth†	RPBA or PVB
Watering troughs	Health	AG or PVB

NOTE: AG = air gap; AVB = atmospheric vacuum breaker; DCVA = double check valve backflow prevention assembly; PVB = pressure vacuum breaker; RPBA = reduced-pressure principle backflow prevention assembly

AVBs and PVBs may be used to isolate health hazards under certain conditions, that is, back-siphonage situations. Additional area of premises isolation may be required.

†Where a greater hazard exists (due to toxicity or other potential health impact) additional area protection with RPBAs is required.

Appendix G: Rules for Licensing CSI Inspectors, BPATs, and Landscape Irrigators

The following rules have been extracted from the TAC and reformatted for ease of use. In the case of any discrepancy between this guide and the rules published at the Texas Secretary of State's website <www.sos.state.tx.us>, the SOS site shall apply.

Licensing Requirements for Backflow Prevention Assembly Testers (from 30 TAC Chapter 30, Subchapter B)

§30.51 Purpose and Applicability

§30.51(a) The purpose of this subchapter is to establish qualifications for issuing and renewing licenses to an individual who tests and repairs backflow prevention assemblies.

§30.51(b) An individual who tests and repairs backflow prevention assemblies must meet the qualifications of this subchapter and be licensed according to Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations).

§30.57 Definitions

The following word and term, when used in this subchapter, shall have the following meaning, unless the context clearly indicates otherwise.

Backflow prevention assembly tester (BPAT)—An individual who tests and repairs backflow prevention assemblies.

§30.60 Qualifications for Initial License

To obtain a license, an individual must have:

§30.60(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations);

§30.60(2) passed an examination;

§30.60(3) received a high school diploma or equivalent certificate;

§30.60(4) completed an approved 40-hour backflow prevention assembly testing training course; and

§30.60(5) worked at least two years in an approved area which includes, but is not limited to:

§30.60(5)(A) operating or maintaining a public drinking water system;

§30.60(5)(B) installing or repairing residential, commercial, or industrial drinking water treatment equipment;

§30.60(5)(C) installing or repairing lawn irrigation systems;

§30.60(5)(D) performing activities requiring a master or journeyman plumbing license;

§30.60(5)(E) installing or servicing fire suppression sprinkler systems and lines;

§30.60(5)(F) operating or maintaining a domestic wastewater treatment facility;

§30.60(5)(G) performing health inspections that requires a registered sanitarian; or

§30.60(5)(H) performing other duties approved by the executive director.

§30.60(6) An individual may substitute one year of the required experience with:

§30.60(6)(A) one year of college credit (32 semester hours); or

§30.60(6)(B) 20 hours of approved training in addition to the required 40-hour backflow prevention assembly testing training course.

§30.62 Qualifications for License Renewal

To renew a license, an individual must have:

§30.62(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations); and

§30.62(2) completed 24 hours of approved continuing education which includes eight hours of approved practical skills training.

Licensing Requirements for Customer-Service Inspectors (from 30 TAC Chapter 30, Subchapter C)

§30.81 Purpose and Applicability

§30.81(a) The purpose of this subchapter is to establish qualifications for issuing and renewing licenses to individuals who conduct and certify customer service inspections.

§30.81(b) An individual who performs customer service inspections must meet the qualifications of this subchapter and be licensed according to Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations).

§30.81(c) An endorsement for customer service inspections shall expire when an individual renews a water operator's license or the license expires. To obtain a customer service inspector license, an individual holding an endorsement must submit a new application with the appropriate fee.

§30.81(d) A licensed customer service inspector shall not perform plumbing inspections required under Plumbing Licensing Law 15(a) (Texas Civil Statutes, Volume 17-1/2, Article 6243-101).

§30.87 Definitions

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

§30.87(1) Cross-connection—A physical connection between a public water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree in the treatment process.

§30.87(2) Customer service inspection—An examination of the private water distribution facility for the purpose of providing or denying water service. The inspection is limited to the identification and prevention of cross-connections, potential contaminant hazards, and illegal lead materials. Customer service inspections are completed before providing continuous water service to new construction, on any existing service where there is reason to believe that cross-connections or other potential contaminant hazards exist, or after any material improvement, correction, or addition to private water distribution facilities (see §290.46(j) of this title (relating to Minimum Acceptable Operating Practices for Public Drinking Water Systems)).

§30.87(3) Customer service inspector—The person who is licensed by the executive director to perform customer service inspections.

§30.90 Qualifications for Initial License

§30.90(a) To obtain a license, an individual must have:

§30.90(a)(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations);

§30.90(a)(2) received a high school diploma or equivalent certificate;

§30.90(a)(3) completed an approved customer service inspector training course;

§30.90(a)(4) worked at least two years in an approved area which includes, but is not limited to:

§30.90(a)(4)(A) operation or maintenance of a public drinking water treatment or distribution system;

§30.90(a)(4)(B) performing activities requiring a master or journeyman plumbing license;

§30.90(a)(4)(C) conducting building or construction inspections; or

§30.90(a)(4)(D) performing duties related to this profession approved by the executive director.

§30.90(b) One year of college (32 semester hours) or an additional 20 hours of training credits may be substituted for one year of the experience requirement.

§30.92 Qualifications for License Renewal

To renew a license, an individual must have:

§30.92(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations); and

§30.92(2) completed 16 hours of approved continuing education.

§30.95 Exemptions

Plumbing inspectors and water supply protection specialists licensed by the State Board of Plumbing Examiners are exempt from these requirements.

Licensing Requirements for Landscape Irrigators, Installers, Irrigation Technicians, and Irrigation Inspectors (from 30 TAC Chapter 30, Subchapter D)

§30.111 Purpose and Applicability

§30.111(a) The purpose of this subchapter is to establish qualifications for issuing and renewing licenses to individuals who:

§30.111(a)(1) sell, design, install, maintain, alter, repair, or service an irrigation system;

§30.111(a)(2) provide consulting services relating to an irrigation system;

§30.111(a)(3) connect an irrigation system to any water supply; or

§30.111(a)(4) inspect irrigation systems and perform other enforcement duties as an employee or as a contractor.

§30.111(b) An individual who performs any of the tasks listed in subsection (a) of this section must meet the qualifications of this subchapter and be licensed according to Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations), unless they are exempt under §30.129 of this title (relating to Exemptions); and must comply with the requirements in Chapter 344 of this title (relating to Landscape Irrigation).

§30.117 Definitions

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

§30.117(1) Installer—An individual who connects irrigation systems to any water supply.

§30.117(2) Irrigator—An individual who sells, designs, installs, maintains, alters, repairs, or services an irrigation system; provides consulting services relating to an irrigation system; or connects an irrigation system to any water supply.

§30.120 Qualifications for Initial License

§30.120(a) To obtain an installer license prior to January 1, 2009, an individual must:

§30.120(a)(1) meet the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations); and

§30.120(a)(2) pass the applicable examination.

§30.120(b) Effective January 1, 2010, the installer license will no longer be valid and will be replaced by an irrigation technician license. No new installer license applications will be accepted after June 1, 2009. New installer licenses issued after the effective date of these rules will remain valid through December 31, 2009. The fee for initial installer licenses issued after the effective date of these rules will be prorated to reflect the validity period.

§30.120(c) To obtain an irrigator license, an individual must:

§30.120(c)(1) meet the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations);

§30.120(c)(2) complete and pass the basic irrigator training course; and

§30.120(c)(3) pass all sections of the applicable examination.

§30.120(d) To obtain an irrigation technician license, an individual must:

§30.120(d)(1) meet the requirements in Subchapter A of this chapter;

§30.120(d)(2) complete the basic irrigation technician course; and

§30.120(d)(3) pass the applicable examination.

§30.120(e) To obtain an irrigation inspector license, an individual must:

§30.120(e)(1) meet the requirements in Subchapter A of this chapter.

§30.120(e)(2) successfully complete:

§30.120(e)(2)(A) the basic irrigator training course;

§30.120(e)(2)(B) an approved backflow prevention assembly testing training course; and

§30.120(e)(2)(C) an approved water conservation or water audit course; or

§30.120(e)(2)(D) an approved landscape irrigation inspection course.

§30.120(e)(3) pass the applicable examination.

§30.120(f) An individual is ineligible to obtain an irrigation inspector license if the individual engages in or has financial or advisory interest in an entity that:

§30.120(f)(1) sells, designs, installs, maintains, alters, repairs, or services an irrigation system;

§30.120(f)(2) provides consulting services relating to an irrigation system; or

§30.120(f)(3) connects an irrigation system to any water supply.

§30.122 Qualifications for License Renewal

§30.122(a) To renew an installer license that expires prior to June 1, 2009, an individual must meet the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations).

§30.122(b) Effective January 1, 2010, the installer license will no longer be valid and will be replaced by an irrigation technician license. No installer license renewal applications will be accepted after December 31, 2008.

§30.122(c) Installer licenses renewed after the effective date of these rules, but prior to June 1, 2009, will remain valid until December 31, 2009. The fee for installer licenses renewed after the effective date of these rules will be prorated to reflect the validity period.

§30.122(d) To renew an irrigator license, an individual must:

§30.122(d)(1) meet the requirements in Subchapter A of this chapter; and

§30.122(d)(2) complete 24 hours of approved training credits.

§30.122(e) To renew an irrigation technician license, an individual must:

§30.122(e)(1) meet the requirements in Subchapter A of this chapter; and

§30.122(e)(2) complete 16 hours of approved training credits.

§30.122(f) To renew an irrigation inspector license, an individual must:

§30.122(f)(1) meet the requirements in Subchapter A of this chapter; and

§30.122(f)(2) complete 24 hours of approved training credits.

§30.129 Exemptions

§30.129(a) The licensing requirements of this chapter do not apply to a person who:

§30.129(a)(1) is licensed by the Texas State Board of Plumbing Examiners and is working within the scope provided by the plumbing laws;

§30.129(a)(2) is registered or licensed as a professional engineer or architect or landscape architect if the work is related to the pursuit of the profession;

§30.129(a)(3) is under the direct supervision of a licensed irrigator and assists in the installation, maintenance, alteration, repair, or service of an irrigation system; or

§30.129(a)(4) is an owner of a business that employs a licensed irrigator to supervise the business' sale, design, consultation, installation, maintenance, alteration, repair, and service of irrigation systems. For the purpose of this subchapter, employs means steadily, uniformly, or habitually working in an employer-employee relationship with the intent to earn a livelihood, as opposed to working casually or occasionally.

§30.129(b) The licensing requirements of this chapter do not apply to:

§30.129(b)(1) irrigation or yard sprinkler work that is performed by a property owner in a building or on premises owned or occupied by the owner as the owner's home;

§30.129(b)(2) irrigation or yard sprinkler repair work, other than extension of an existing irrigation or yard sprinkler system or installation of a replacement system that is:

§30.129(b)(2)(A) performed by a maintenance person who does not act as an irrigator or engage in yard sprinkler construction or maintenance for the public; and

§30.129(b)(2)(B) incidental to and on premises owned by the business in which the person is regularly employed or engaged;

§30.129(b)(3) irrigation or yard sprinkler work that is performed:

§30.129(b)(3)(A) by a regular employee of a railroad who does not act as an irrigator or engage in yard sprinkler construction or maintenance for the public; and

§30.129(b)(3)(B) on the premises or equipment of the railroad;

§30.129(b)(4) irrigation and yard sprinkler work that is performed on public property by a person who is regularly employed by a county, city, town, special district, or political subdivision of the state;

§30.129(b)(5) irrigation or yard sprinkler work that is performed by a person using a garden hose, hose sprinkler, hose-end product, including soaker hose, or agricultural irrigation system;

§30.129(b)(6) an activity that includes a commercial agricultural irrigation system;

§30.129(b)(7) irrigation or yard sprinkler work that is performed by an agriculturist, agronomist, horticulturist, forester, gardener, contract gardener, garden or lawn caretaker, nurseryman, or grader or cultivator of land on land owned by the individual performing the work;

§30.129(b)(8) irrigation or yard sprinkler work that is performed by a member of a property owners' association as defined by Property Code, §202.001, on real property owned by the association or in common by the members of the association if the irrigation or yard sprinkler system water real property that is less than 1/2 acre in size and is used for aesthetic or recreational purposes.

§30.129(c) A person who is exempt from the license requirements of this subchapter shall comply with the standards established by Chapter 344 of this title (relating to Landscape Irrigation). The term irrigation system does not include a system used on or by an agricultural operation as defined in Texas Agriculture Code, §251.002.

Appendix H: Landscape-Irrigation Program Rules Related to Cross-Connection Control Programs

The following rules have been extracted from the TAC and reformatted for ease of use. In the case of any discrepancy between this guide and the rules published at the Texas Secretary of State's website <www.sos.state.tx.us>, the SOS site shall apply.

§344.1. Definitions.

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

§344.1(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.

§344.1(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.

§344.1(3) Backflow prevention—The mechanical prevention of reverse flow, or back siphonage, of nonpotable water from an irrigation system into the potable water source.

§344.1(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.

§344.1(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.

...

§344.1(7) Cross-connection—An actual or potential connection between a potable water source and an irrigation system that may contain contaminates or pollutants or any source of water that has been treated to a lesser degree in the treatment process.

...

§344.1(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.

...

§344.1(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.

...

§344.1(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.

...

§344.1(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).

...

§344.1(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.

...

§344.1(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.

§344.1(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.

...

§344.1(37) Potable water—Water that is suitable for human consumption.

§344.1(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.

§344.1(39) Reclaimed water—Domestic or municipal wastewater which has been treated to a quality suitable for beneficial use, such as landscape irrigation.

…

§344.1(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.

§344.24. Local Regulation and Inspection.

§344.24(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.

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

§344.36(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.

§344.36(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.

§344.36(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.

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

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

§344.36(d)(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.

§344.50. Backflow Prevention Methods.

§344.50(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.

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

§344.50(b)(1) An air gap may be used if:

§344.50(b)(1)(A) there is an unobstructed physical separation; and

§344.50(b)(1)(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.

§344.50(b)(2) Reduced pressure principle backflow prevention assemblies may be used if:

§344.50(b)(2)(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

§344.50(b)(2)(B) drainage is provided for any water that may be discharged through the assembly relief valve.

§344.50(b)(3) Pressure vacuum breakers may be used if:

§344.50(b)(3)(A) no back-pressure condition will occur; and

§344.50(b)(3)(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.

§344.50(b)(4) Atmospheric vacuum breakers may be used if:

§344.50(b)(4)(A) no back-pressure will be present;

§344.50(b)(4)(B) there are no shutoff valves downstream from the atmospheric vacuum breaker;

§344.50(b)(4)(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;

§344.50(b)(4)(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

§344.50(b)(4)(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.

§344.50(c) Backflow prevention devices used in applications designated as health hazards must be tested upon installation and annually thereafter.

§344.50(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:

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

§344.50(d)(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

§344.50(d)(3) test cocks are used for testing only.

§344.50(e) If a double check valve is installed below ground:

§344.50(e)(1) test cocks must be plugged, except when the double check valve is being tested;

§344.50(e)(2) test cock plugs must be threaded, water-tight, and made of non-ferrous material;

§344.50(e)(3) a y-type strainer is installed on the inlet side of the double check valve;

§344.50(e)(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

§344.50(e)(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.

§344.51(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.

§344.51(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.

§344.51(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.

§344.51(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:

> **§344.51(d)(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);
>
> **§344.51(d)(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
>
> **§344.51(d)(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.

§344.52(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.

§344.52(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.

§344.52(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 10 business days of testing of the backflow prevention device.

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

§344.61(c) All irrigation plans used for construction must be drawn to scale. The plan must include, at a minimum, the following information:

...

§344.61(c)(7) location, type, and size of each:

...

§344.61(c)(7)(B) backflow prevention device;

...

§344.62. Minimum Design and Installation Requirements.

§344.62(k) Isolation valve. All new irrigation systems must include an isolation valve between the water meter and the backflow prevention device.

§344.62(n) Water contained within the piping of an irrigation system is deemed to be non-potable. ...

§344.65. Reclaimed Water.

Reclaimed water may be utilized in landscape irrigation systems if:

§344.65(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);

§344.65(6) backflow prevention on the reclaimed water supply line shall be in accordance with the regulations of the water purveyor.

Appendix I: Sample Plumbing Ordinance

Please note that this is a **sample** ordinance and should not be modified or adopted without review by the public water system's legal counsel.

This ordinance adds a new section to the City's Code of Ordinances.

ORDINANCE NO. _____

An ordinance of the city council of the City of _____, Texas, amending Chapter __ of the Code of Ordinances of _____, Texas, by adding a new section _____ to be entitled "Cross-Connection Control Program," providing a repeal clause and a severability clause, establishing penalties for the violation of these restrictions and provisions for their enforcement, and finding and determining that the meeting at which this ordinance is passed is open to the public as required by law.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF _____, TEXAS:

SECTION 1—That Chapter ___ of the Code of Ordinances of the City of _____, Texas, be amended to add a new section _____, such section to read as follows:

Section _____: Cross-Connection Control Program

a. **Definitions**

(1) **Manual M14:** The American Water Works Association's *Recommended Practice for Backflow Prevention and Cross-Connection Control*, current edition.

(2) **TCEQ:** The Texas Commission on Environmental Quality.

(3) **290 Rules:** The TCEQ's rules and regulations for public water systems, which appear in Title 30, Texas Administrative Code, Chapter 290.

b. **General**

(1) No water-service connection shall be made to any establishment where a potential or actual contamination hazard exists unless the water supply is protected in accordance with the 290 Rules and this ordinance. The water purveyor shall discontinue water service if a required air gap or backflow prevention assembly is not installed, maintained, and tested in accordance with the 290 Rules and this ordinance.

(2) No backflow protection at the water service meter is required where an adequate internal cross-connection control program is in place.

c. **Installation, Testing, and Maintenance of Backflow Prevention Assemblies**

(1) All backflow prevention assemblies must be tested upon installation by a licensed backflow prevention assembly tester and certified to be operating within specifications. Backflow prevention assemblies that are installed to protect against health hazards must also be tested and certified to be operating within specifications at least annually by a recognized backflow prevention assembly tester.

(2) Backflow prevention assemblies installed on fire suppression systems must be tested by a backflow prevention assembly tester permanently employed by an approved fireline contractor.

(3) Gauges used for backflow prevention assembly testing must be tested for accuracy at least annually in accordance with the AWWA's Manual M14 or the current edition

of the University of Southern California's *Manual of Cross-Connection Control*. A copy of the gauge accuracy test report must be submitted to the City of _____ to demonstrate the gauge has been tested for accuracy.

(3) A recognized backflow prevention assembly tester must hold a current license issued from the TCEQ.

c. **Customer Service Inspections**

(1) A customer service inspection must be completed before the provision of continuous water service to all new construction, on any existing service when the water purveyor has reason to believe that cross-connections or other contaminant hazards exist, or after any material improvement, correction, or addition to the private water-distribution facilities.

(2) Only individuals with the following credentials shall be recognized as capable of conducting a customer service inspection:

(A) Plumbing inspectors and water-supply-protection specialists that have been licensed by the Texas State Board of Plumbing Examiners.

(B) Customer service inspectors that have been licensed by the TCEQ.

(3) The customer service inspection must certify that:

(A) No direct connection between the public drinking water supply and a potential source of contamination exists. Potential sources of contamination must be isolated from the public water system by a properly installed air gap or an appropriate backflow prevention assembly.

(B) No cross-connection between the public water supply and a private water source exists. Where an actual, properly installed air gap is not maintained between the public water supply and a private water supply, an approved reduced-pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a recognized backflow prevention assembly tester.

(C) No connection exists that allows water to be returned to the public drinking water supply.

(D) No pipe or pipe fitting that contains more than 0.25 percent lead is used for the installation or repair of plumbing at any connection that supplies water for human use.

(E) No solder or flux that contains more than 0.2 percent lead is used for the installation or repair of plumbing at any connection that provides water for human use.

Irrigation Systems

(1) Any irrigation system that is connected to a public or private potable water supply must be connected through a backflow prevention assembly approved by the Texas Commission on Environmental Quality.

(2) Backflow prevention assemblies installed on irrigation systems that are classified as health hazards must be tested at least annually.

SECTION 2—REPEAL

All ordinances that are in conflict with the provisions of this ordinance are hereby repealed, and all other ordinances of the City not in conflict with the provisions of this ordinance shall remain in full force and effect.

SECTION 3—SEVERABILITY

The phrases, clauses, sentences, paragraphs, and sections of this ordinance are severable and, if any phrase, clause, sentence, paragraph, or section of this ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this ordinance.

SECTION 4—ENFORCEMENT

A violation of this ordinance is a misdemeanor and, upon conviction, any person who violates this ordinance shall be punished by a fine of not less than _____ and not more than _____. Each day that one or more of the provisions in this ordinance is violated shall constitute a separate offense. If a person is convicted of _____ or more distinct violations of this ordinance, the _____, _____, _____ shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued under such circumstances shall be restored only upon payment of a reconnection charge, hereby established at $_____, and any other costs incurred by the City of _____ in discontinuing service. In addition, suitable assurance must be given to the _____, _____, or _____ that the same action shall not be repeated while the ordinance is in effect. Compliance with this ordinance may also be sought through injunctive relief in district court.

Optional Provisions for the Section "Installation, Testing and Maintenance of Backflow Prevention Assemblies":

All backflow prevention assemblies must be installed and tested in accordance with the manufacturer's instructions, Manual M14, or the University of Southern California's *Manual of Cross-Connection Control*.

Assemblies must be repaired, overhauled, or replaced whenever the assemblies are found to be defective. Original forms recording testing, repairs, and overhaul must be kept and submitted to the City of _____ within five working days of the test, repair or overhaul of each backflow prevention assembly.
No backflow prevention assembly or device may be removed from use, or relocated, or other assembly or device substituted for it, without the approval of the City of _____.

Optional Provision for the Section "Irrigation Systems":

Backflow prevention assemblies installed on irrigation systems that are not classified as health hazards must be tested every _____ years or as required by the adopted plumbing code.

Optional Section:

Fire-Hydrant Protection

An approved reduced-pressure principle backflow prevention assembly (RPBA) is be the minimum protection for fire-hydrant water meters that are being used for a temporary water supply during any construction or other uses which would pose a potential hazard to the public water supply.

(A) An RPBA must be installed if any solution other than potable water can be introduced into the system.
(B) It is the responsibility of all persons engaging in the use and rental of a fire-hydrant water meter to abide by the conditions of this article. All fire-hydrant meter rentals shall meet the current requirements of the City.