

ORDINANCE NO. 345

AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF TIOGA TEXAS ADOPTING A WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN; ESTABLISHING CRITERIA FOR ENCOURAGING WATER SAVING PRACTICES ON A CONTINUAL BASIS AS WELL AS DURING EMERGENCY SITUATIONS; ESTABLISHING WATER SAVING GOALS; ESTABLISHING RESTRICTIONS ON CERTAIN WATER USES; ESTABLISHING PENALTIES FOR THE VIOLATION OF AND PROVISIONS FOR ENFORCEMENT OF THESE RESTRICTIONS; ESTABLISHING PROCEDURES FOR GRANTING VARIANCES; AND PROVIDING SEVERABILITY AND AN EFFECTIVE DATE.

WHEREAS, the City of Tioga, Texas recognizes that the amount of water available to the City and its water utility customers is limited and subject to depletion, especially during periods of extended drought;

WHEREAS, the City recognizes that natural limitations cannot guarantee an unlimited and uninterrupted water supply for all purposes;

WHEREAS, Section 11.1272 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality require all public water supply systems in Texas to prepare a drought contingency plan; and

WHEREAS, as authorized under law, and in the best interests of the citizens of Tioga, Texas, the Tioga City Council deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies;

NOW THEREFORE, BE IT ORDAINED BY THE CITY OF TIOGA, TEXAS:

SECTION 1.

That the revised City of Tioga, Texas, Water Conservation and Drought Contingency Plan attached hereto and made part hereof for all purposes be, and the same is hereby, adopted as the official policy of the City.

SECTION 2.

That all ordinances that are in conflict with the provisions of this ordinance be, and the same are hereby, repealed and all other ordinances of the City not in conflict with the provisions of this ordinance shall remain in full force and effect.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.

Should any paragraph, sentence, clause, phrase, or section of this ordinance be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of

this ordinance as a whole or any part or provision thereof, other than the part so declared to be invalid, illegal or unconstitutional.

SECTION 4.

This ordinance shall take effect immediately from and after its passage and the publication of the caption, as the law in such cases provides.

DULY PASSED BY THE CITY OF TIOGA, TEXAS on the 10<sup>th</sup> day of July, 2017.

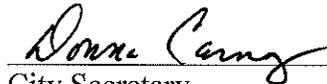
Approved:



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Mayor

Attested to:



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City Secretary



HAYTER  
ENGINEERING, INC

Planners Surveyors Engineers

City of Tioga

# Water Conservation & Drought Contingency Plan

June 2017

**WATER CONSERVATION PLAN 2017**  
**(Revised from 2005 & 2012 Version)**

**A. Purposes:** The City of Tioga, located in Grayson County, implemented a water conservation plan in May 1993, as required by the USDA Farmers Home Administration (Rural Development), and the Texas Water Development Board. The City revised plan in 2000, as portions of the plan were outdated, and again in 2005 and 2012. This latest revision is in response to Texas Commission on Environmental Quality (TCEQ) rules stating that all plans be updated every 5 years.

Tioga recognizes the importance of water conservation to protect water supplies in the long term. The City also recognizes the water conservation and drought contingency requirements of Senate Bill 1, and desires to comply with those requirements. The objective of this water conservation plan is to reduce the quantity used for all water use activities, where practical, through implementation of efficient water use practices. TWDB's Water Conservation Task Force "Best Management Practices" will be used where appropriate.

**B. Service Area and System Evaluation:** Tioga is located in the southwestern corner of Grayson County, Texas, in the Trinity River Basin. The City's water supply is from groundwater out of the Trinity Aquifer via three wells. According to the Texas Water Development Board's Regional Water Plan for Region C, it is anticipated that Tioga will have 119 acre-feet/year of groundwater supply until the year 2070. The City's current well capacity, however, supplied by wells #2, #3, and #4, is 405 gpm, which equates to 653 acre-feet/year.

A Utility Profile has been completed for Tioga's water system, and has been submitted on the TWDB website. This form provides information on production and use from 2012 to 2016, and is useful when determining per capita use and water loss rates.

Population projections have been made by the Texas Water Development Board in the 2016 Region C Regional Water Plan, and are as follows:

**Population Projections for Cities, Utilities, and Co-Other  
 By Region By County**

	2020	2030	2040	2050	2060	2070
Tioga	865	936	1,006	1,087	3,500	4,800
Grayson County	134,785	148,056	164,524	185,564	250,872	344,127

However, the City of Tioga tracks the population served by their system and the estimated full-time residential population in 2016 is 1,407.

The population of Tioga does not equal the number of residents served, however, because the city serves 34 residential meters outside the City limits. However, this is far greater than the 865 as projected in 2020 by the TWDB. It appears that the population growth has already exceeded the TWDB's projections. The City determined that 420 of the connections were residential and inside the city (this includes 21 residences on 2 multifamily meters). There is an additional 34 residential meters outside of the city limits. Therefore, there are 454 residential retail connections

Using the estimated population, Tioga then used water pumped (figures from the master meters at the wells) to determine what the total gallons per capita per day (gpcpd) use was. In 2016, total use was 38.8 MG, making per capita use 76 gpcpd. The five year average total use was 34.5 MG, making the five-year average per capita use from 2012 to 2016 70 gpcpd.

According to the TWDB Region C Regional Water Plan, water demand for Tioga is projected as follows:

**Municipal Water Demand Projections (AC-FT) Cities, Utilities, and Co-Other  
By Region By County**

	2020	2030	2040	2050	2060	2070
Tioga	119	124	131	139	444	608
Grayson County	25,580	27,254	29,741	33,410	44,009	60,119

Between the years 2012 and 2016, 116.5 ac-ft (88 gpcpd) was Tioga's highest annual use. According to the Region C Plan, Tioga has supplies in the Trinity of 119 ac-ft through 2070. However, the current capacity of the system is 653 ac-ft/yr and furthermore, a new well will be drilled during 2017-2018 that is capable of supplying an additional 320 ac-ft/yr thus bringing the total supplies to 973 ac-ft/yr. This will put Tioga on track to have the required supply necessary through 2070. However, in the event of a shortage, Tioga's supply strategies include conservation, participating in the Grayson County Water Supply Project, and supplemental wells to replace existing wells (2016 Region C Water Plan, pp. 5D.207).

**C. Coordination with Regional Planning Group:** Tioga is located within the Texas Water Development Board's North Texas planning region, or Region C. A copy of this plan has been provided to Region C.

**D. Goals:** Water conservation plans are required to propose goals for the entity to try to reach within 5 and 10 years. Tioga's goals are as follows:

**Annual Water Use:** The City of Tioga's five-year average water use rate is 70 gallons per capita per day, or 106 acre-feet per year total demand for the city (34,496,082 gallons water pumped\1347 persons\365 days). The Texas Water Development Board recommends an annual reduction of 1% total gpcpd, based on the five-year rolling average, until an entity reaches 140 gpcpd or less. Since Tioga's use is well below 140 gpcpd, the goal will be to keep the water use steady over the next five years, and to reduce the water usage by 1% over the next ten years. Therefore, the goal for 2022 is to keep the five-year average water use to 70 gpcpd. The 2027 goal is to reduce the five-year average water use to 69 gpcpd.

**Annual Water Loss:** Water loss is calculated by subtracting the amount of water sold from the amount of water pumped. This number represents the amount of water the City was unable to bill or "account" for. Lost water is caused by line leaks, improperly functioning water meters, unmetered water, Line flushing, etc. Some lost water is inevitable, but excessive water loss is a concern because it represents wasted water. Water pumped over the past five years averaged 39,601,360 gallons. Water sold over the past five years averaged 34,496,082. Subtracting these two figures reveals the total water loss of 5,105,278 per year. Dividing this lost amount by the total water pumped provides a percentage of water loss. The five-year water loss percent is 13% or 10 gpcpd in Tioga. A 15% water loss rate is a generally accepted goal for most systems in north Texas, and Tioga is within this range. However, because lost water represents lost revenue, the City has a five-year goal of reducing water loss to 12% (9 gpcpd) and a ten-year goal of reducing

water loss to 11% (8 gpcpd).

**Water Conservation Goals**

Year	Annual Water Use	Annual Water Loss
2022	70 gpcpd	9 gpcpd (12%)
2023	69 gpcpd	8 gpcpd (11%)

**E. Plan Elements:** Tioga used the Texas Water Development Board's "How-To Guide for Submitting a Water Conservation Plan," rules contained in 30 TAC Chapter 288, TWDB's Water Conservation Plan Guidance Checklist, and suggestions from the Texas Water Development Board's Water Conservation Implementation Task Force during the preparation of this plan. The water conservation plan is made up of several elements, including education and information, plumbing codes, water rate structures, universal metering, and leak detection and repair. Through these elements, the City hopes to achieve its goal of reducing water use to 70 gallons per capita per day by 2022, and to 69 gallons per capita per day by 2027. Also, Tioga hopes to reduce lost water to 12% by 2022 and 11% by 2027.

**1. Education and Information:** In order to increase public awareness of the Plan, which is a best management practice according to the Water Conservation Implementation Task Force, Tioga performs the following:

- a. The City provides new water customers with water conservation literature when signing up for new water service. This literature is varied, but is typically a brochure published by the Texas Water Development Board. The literature includes both indoor and outdoor water saving tips.
- b. The City provides existing water customers with water conservation literature no less than once per year. This material is typically in the form of a brochure published by the Texas Water Development Board, and is typically included along with the annual consumer confidence report mailed to each customer.
- c. The City includes water saving tips on its municipal website reminding customers of the importance of water conservation.
- d. The City keeps a copy of the Water Conservation & Drought Contingency Plan posted on its website.

**2. Plumbing Codes:** The City of Tioga will continue to abide by the 2003 version of the Southern Standard Building Code, adopted by the City in 2003,

which contains requirements for water saving plumbing devices on all new construction.

**3. Water Rate Structure:** The City's current water rate structure is as follows for inside the city limits:

\$30.00 for the first 1,000 gallons used (base charge)  
\$3.60 for every 1000 gallons between 1,001 – 15,000 gallons  
\$4.10 for every 1000 gallons between 15,001 – 20,000 gallons  
\$4.60 for every 1000 gallons between 20,001 – 30,000 gallons  
\$5.10 for every 1000 gallons between 30,001 – 50,000 gallons  
\$5.60 for every 1000 gallons used at 50,001 and above.

The City's current water rate structure is as follows for outside the city limits:

\$52.00 for the first 1,000 gallons used (base charge)  
\$6.20 for every 1000 gallons between 1,001 – 15,000 gallons  
\$7.20 for every 1000 gallons between 15,001 – 20,000 gallons  
\$8.20 for every 1000 gallons between 20,001 – 30,000 gallons  
\$9.20 for every 1000 gallons between 30,001 – 50,000 gallons  
\$10.20 for every 1000 gallons used at 50,001 and above.

The City's water rates are in a "block rate" format. The block rate pricing is considered to be a best management practice by the Water Conservation Implementation Task Force. It discouraged customers from using excess water by charging them more per gallon with increasing use. A copy of the City's water rate structure is provided at the end of this plan.

**4. Universal Metering;** Master meters are located at each of the three wells, and they vary in age from 7 to 25 years. Each of these meters is calibrated annually. Master meters are checked 7 days per week, and usage is logged each day.

All water users served by Tioga are presently metered, with the exception of city uses including the wastewater treatment plant, the fire department, city hall, the community building, and the city park. These uses are estimated to be 250,000 gallons/month, or 3 MG/year. In addition, water line flushing is unmetered, but is estimated at 10,000 gallons/month, or 0.12 MG/year. These use estimates are added back in to total water sold prior to calculating water loss. There are no unaccounted for water uses known by the City. Customer meters are manual read, and are checked once per month. Meter readings are logged into

the billing system by hand, and irregularities in water use are noted by office staff and addressed by public works. When meters begin to run slow, they are replaced. When meters are damaged, they are replaced. Typically all meters are replaced approximately every ten years.

5. **Leak Detection and Repair:** Tioga staff checks the system by driving the town over the course of a week looking for signs of leaks. In addition, during meter reading monthly, meter leaks are noted and reported. Finally, as meter readings are inputted into the computer by hand, discrepancies in monthly use are noted and investigated. Leaks are repaired immediately. Lines which leak repeatedly are replaced.
6. **Implementation and Enforcement:** The Mayor of the City of Tioga will oversee implementation of the water conservation program, and will report to the Tioga City Council annually on the progress of the program.

City staff will prepare the TWDB Water Conservation Annual Report by May 1 of each year and keep it with this plan. It shall be submitted to TWDB in the event the city secures a loan from TWDB in excess of \$500,000.

**DROUGHT CONTINGENCY PLAN 2017**  
**(Revised from 2005 and 2012 Version)**

- A. Declaration of Policy, Purpose, and Intent:** The City's drought contingency plan (DCP) was adopted in February 2001, and has been updated here as required by the Texas Commission on Environmental Quality (TCEQ) in 30 TAC Chapter 288.

Tioga recognizes the importance of conserving the available water supply and protecting the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection. City officials desire to protect and preserve public health, welfare, and safety and minimize the adverse impacts of short-term water supply shortage or other water supply emergency conditions.

Tioga's water supply comes from 3 wells drilled into the Antlers formation. The City currently has 504 active connections, and total water use in 2016 was 38,812,700 gallons.

Water uses regulated or prohibited under this Drought Contingency 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 this plan.

- B. Public Comment:** The City of Tioga will discuss the updates to the existing Drought Contingency Plan during the next regularly scheduled city council meeting. Notice of this agenda item will be posted at City Hall and in the local newspaper, the Pilot Post Signal. Any public comments will then be incorporated into the plan.
- C. Public Education:** The public will be provided 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 articles notices on the city's website, written notices posted at city hall and the post office, and/or door to door contact by city staff.
- D. Coordination with Regional Water Planning Groups:** The service area of the City of Tioga is located within Region C, and the City has provided a copy of this Plan to Region C.

**E. Authorization:** The Mayor of the City of Tioga will oversee the implementation of the drought contingency plan. He or she will initiate or terminate drought response measures in accordance with the plan. The City Council authorized the plan by Ordinance, which will be included at the end of the plan once it is approved.

**F. Triggering Criteria:** The Mayor shall monitor water supply and/or demand conditions and determine when conditions warrant initiation or termination of each stage of the Plan based on the following conditions:

- a. Mild Condition:** Daily water demand exceeds 316,800 gallons per day for three consecutive days (50% of rated capacity of all wells).

This condition shall be terminated when daily water demand meets or falls below 316,800 gpd for four consecutive days.

*Target Goal: When a mild water shortage exists, Tioga will implement water management strategies in an attempt to reduce daily water use to below 316,800 gpd.*

- b. Moderate Condition:** 1) Daily water demand exceeds 380,160 gallons per day for three consecutive days (60% of capacity of all wells); or 2) water pressures in the distribution system remain below 40 psi for more than six consecutive hours; or 3) failure of any well, coupled with demand over 237,600 gpd (75% of capacity of the two smaller wells).

This condition shall be terminated when 1) daily water demand meets or falls below 380,160 gpd for four consecutive days; or 2) water pressures meet or exceed 40 psi for more than 12 consecutive hours; or 3) all three wells are in working condition. When the moderate condition is terminated, the mild condition shall be initiated.

*Target Goal: When a moderate water shortage exists, Tioga will implement water management strategies in an attempt to reduce daily water use to below 380,160 gpd.*

- c. Severe Condition:** 1) Daily water demand exceeds 475,200 gallons per day for three consecutive days (75% of rated capacity of all wells); or 2) imminent failure of a system component where immediate health or safety hazards exist; or 3) water pressures in the distribution system continue to drop after implementing management steps defined in section G.b. below.

This condition shall be terminated when 1) daily water demand meets or falls below 475,200 gpd for four consecutive days; and 2) all system

components are in good working order; and 3) water pressures are stabilized. When the severe condition is terminated, the moderate condition shall be initiated.

***Target Goal:** When a severe water shortage exists, Tioga will implement water management strategies in an attempt to reduce daily water use to below 475,200 gpd.*

- d. Emergency Condition:** When the Mayor determines that an emergency condition exists, due to contamination of the water source or system failures, he/she shall implement *all* portions of the severe response stage as deemed necessary.

**G. Drought Response Stages:** Upon initiation of a triggering condition, the following responses shall be taken by the City:

- a. Mild Condition:** Inform the public through the news media that a trigger condition has been reached, and request a voluntary reduction in water use.

**b. Moderate Condition:**

- i) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to between 9 pm and 6 am nightly. 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.
- ii) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except between the hours of 9 pm and 6 am. 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. Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to between 9 pm and 6 am nightly. 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.

- iii) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except between the hours of 9pm and 6am nightly.
- iv) Use of water from hydrants shall be limited to fire fighting, related activities, or other activities necessary to maintain public health, safety, and welfare.
- v) 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).

**c. Severe Conditions:**

- i) Restrict all outdoor water use at all times.
- ii) Set limits, to be determined by the Mayor, on water use by both commercial and residential users.

**H. Enforcement:** Persons who knowingly or intentionally allow the use of water from the City of Tioga for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Plan shall face action taken by the Mayor as follows:

- a. Any person who violates this Plan is guilty of a misdemeanor and, upon conviction shall be punished by a fine set by the presiding judge. 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 Mayor shall, after notifying the customer, discontinue water service. Services discontinued under such circumstances shall be restored only upon payment of a re-connection charge and any other costs incurred by the City in discontinuing service. Compliance with this plan may also be sought through injunctive relief in the district court.

- b. Any person, including a person classified as a water customer of the City, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator. Proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation. However, 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 rebuttable presumption that the parent committed the violation. However, 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.
- I. Variances:** The Mayor 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 plan shall file a petition for variance with the City within 30 days after the Plan or 5 days after a particular drought response stage have been invoked. *All* petitions for variances shall be reviewed by the Mayor 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 plan.
- (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.

Variations granted by the City shall be subject to the following conditions, unless waived or modified by the Mayor:

- (a) Variations granted shall include a timetable for compliance.
- (b) Variations granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

**J. Severability:** It is hereby declared to be the intention of the Tioga City Council that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan 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 Plan, since the same would not have been enacted by the City Council without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

**K. Plan Updates:** This plan shall be reevaluated and updated every 5 years based on updated information, particularly population and water use changes, system changes, and the latest version of the Region C Regional Water Plan.