



**WATER CONSERVATION
AND
DROUGHT CONTINGENCY PLAN**

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CITY OF HIGHLAND VILLAGE

Water Conservation / Drought Contingency Plan

1. INTRODUCTION AND OBJECTIVES

Water conservation is not limited to the recurring periods of Texas drought. Conserving water and avoiding water waste are important for the long-term sustainability of the community even in times of abundant rainfall. The City of Highland Village recognizes that water is an essential resource for sustaining the growth and vitality of the city, the region and the State of Texas. This Plan describes both the city's long-term commitment to conserving water resources for future generations and the need to manage water demands during short-term conditions when water supplies are limited.

The City of Highland Village has adopted this Water Conservation / Drought Contingency Plan as a comprehensive set of strategies and regulations on the delivery and consumption of water to conserve the available water supply and to protect the integrity of water supply infrastructure, particularly facilities critical for domestic water supply, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety. It is also the intent of the Plan to minimize the adverse impacts of water supply shortage or other water supply emergency conditions.

The authority to implement and enforce the Water Conservation / Drought Contingency Plan is established in Chapter 22, Article 22.10, Division 2, Sec. 22.10.031 of the Highland Village City Code. The scope of authority applies to all persons and premises that obtain water directly or indirectly from the City.

Water supply has always been a key issue in the development of Texas. In recent years, the increasing population and residential and commercial development in the North Texas region have led to growing demands for water. The latter half of the twentieth century saw the development of local and less expensive sources of water supply. Additional supplies to meet higher demands will be expensive and difficult to develop. Therefore, it is important to make efficient use of existing supplies. This will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the high cost of additional water supply development.

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation and drought contingency plans for public water suppliers. The TCEQ guidelines and requirements for water suppliers are included in Appendix B. The City of Highland Village has adopted this Water Conservation / Drought Contingency Plan pursuant to TCEQ guidelines and requirements.

The objectives of the water conservation plan are to:

- . reduce water consumption;
- . reduce the loss and waste of water;
- . improve efficiency in the use of water; and
- . extend the life of current regional water supplies by reducing the rate of growth in per capita demand.

The objectives of the drought contingency plan are to:

- . conserve the available water supply in times of drought and emergency;
- . maintain supplies for domestic water use, sanitation, and fire protection;
- . protect and preserve public health, welfare, and safety;

- . minimize the adverse impacts of water supply shortages; and
- . minimize the adverse impacts of emergency water supply conditions.

2. DEFINITIONS

In this Water Conservation / Drought Contingency Plan, the following definitions apply:

Athletic Fields – grounds designated for sports and athletic practices and contests including parks, schools (public and private), municipal and privately owned.

Domestic water use – water used for household, personal, or sanitary purposes such as drinking, cooking, bathing, and cleaning a residence, business, industry, or institution.

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

New landscape – vegetation installed at the time of the construction of a new house, new multi-family building, or a new commercial building; installed as part of a capital improvement project; or vegetation which alters more than one half the area of an existing landscape; and has been installed for less than thirty (30) days.

Non-essential water use – water uses that are neither essential nor required for the protection of public health, safety, or welfare, including:

- irrigation of landscape areas, including parks, greenbelt areas, athletic fields, and golf courses, except where otherwise provided under the Water Conservation / Drought Contingency Plan;
- washing of any motor vehicle, boat, or trailer;
- washing or rinsing of any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced area;
- washing of buildings or structures for purposes other than immediate fire protection;
- flushing gutters or permitting water to run or accumulate in any gutter, alley or street;
- filling, refilling, or adding water to any indoor or outdoor swimming pool or spa; and
- operating a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life.

Person - any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representative, agents or assigns and includes the owner, occupant, lessee, or manager of a property

3. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

3.1 Conservation Plans

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.1 (23) of the Texas Administrative Code. For the purpose of these rules, a “water conservation plan” is defined as:

“A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).”

According to TCEQ rules, water conservation plans for public water suppliers must have a certain minimum content

(Section 3), must have additional content for public water suppliers that are projected to supply 5,000 or more people in the next ten years (Section 4), and may have additional optional content (Section 5).

3.2 Drought Contingency Plans

The TCEQ rules governing development of drought contingency plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.1 (5) of the Texas Administrative Code. For the purpose of these rules, a “drought contingency plan” is defined as:

“A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).”

The drought contingency plan for the City of Highland Village is contained in Section 7 of this water conservation / drought contingency plan.

4. MINIMUM REQUIRED WATER CONSERVATION PLAN CONTENT

The minimum requirements in the Texas Administrative Code for water conservation plans for public drinking water suppliers covered in this report are as follows:

- .§288.2(a)(1)(A) – Utility Profile – Section 4.1 and Appendix B
- .§288.2(a)(1)(B) – Record management – Section 4.2
- .§288.2(a)(1)(C) – 5 & 10 year targets for gpcd – Table 4.2
- .§288.2(a)(1)(D) – Accurate Metering – Sections 4.3 and 4.4
- .§288.2(a)(1)(E) – Universal Metering – Section 4.4
- .§288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 4.5
- .§288.2(a)(1)(G) – Public Education and Information Program – Section 4.6
- .§288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 4.7
- .§288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 4.8, Appendix C, and Appendix E
- .§288.2(a)(1)(K) – Documentation of coordination with Regional Water Planning Group – Section 4.9 and Appendix E

4.1 Utility Profile

Appendix B to this water conservation plan is a water utility profile for the City of Highland Village. Table 4.1 summarizes key facts from the Water Utility Profile.

4.2 Specification of Water Conservation Goals

Table 4.2 shows historical per capita municipal water use for the City of Highland Village. Water use is shown in units of gallons per capita per day (gpcd). Per capita municipal water use is total municipal water sold divided by population.

Projected per capita uses are City of Highland Village projections to the City’s Long Range Water Supply Plan. Per capita municipal water use in a year with normal or high precipitation during the summer should be less than projected here.

Table 4.1

Water Utility Profile Summary

Water Service Area = 5.5 square miles

Miles of Distribution Pipe = 102 miles

Water Supply Source(s): City of Highland Village owns 5 ground water wells and Upper Trinity Regional Water District (UTRWD) subscription.

Population: 2011 population = 16,000, 2013 population = 17,000, 2020 population (projected) = 17,800

Connections: Current Connections = 5,422 in 2013; Total Increase in Connections in Last 3 Years = 121

Water Use Information:

Year Use (gallons)	Estimated Population	Unaccounted for water (in percent)	Peak Day in MGD
2014 (967,100,000)	17,000	4%	(7-12) 5.9
2015 (933,337,000)	17,000	5%	(8-15) 7.5
2016 (899,281,300)	17,000	6%	(7-22) 6.8
2017 (920,974,000)	17,000	2%	(8-11) 6.3
2018 (905,201,100)	17,000	0.4%	(7-20) 6.9

Water Treatment System: UTRWD Subscription = 3.0 million gallons per day. City of Highland Village's 5 ground water wells = 4.5 million gallons per day = 7.5 million gallons per day.

Total Annual Wastewater Flow = 411,460,879 Gallons in 2018.

The TWDB projections include the impact of low-flow plumbing fixtures and water conservation measures that have been enacted through building code amendments and state and federal legislation but do not include the effect of water conservation measures recommended in this plan. Table 4.2 shows the past, current and projected per capita water use after implementation of this water conservation and drought contingency plan.

In adopting this Plan, the City of Highland Village has established a goal of reducing total per capita water consumption by up to one percent as measured on rolling five and seven year averages as shown in Table 4.2.

Table 4.2

Historical Total Per Capita Use and Water Conservation Goal

	(Year) gpcd
Historical Total Per Capita Use	(2011) 200 – (2012) 153 (2013) 162 – (2014) 155 – (2015) 150 – (2016) 145 – (2017) 148 – (2018) 146
5-Yr. Average	-149--
7-Yr. Average	-151--
2-Yr. Drought Average	-157--
Projected Reduction Due to Water Conservation Measures in this Plan	-4--
5 yr Projected Per Capita Water Use Goal	--170 to 175 gpcpd
10 yr Projected Per Capita Water Use Goal	--160 to 170 gpcpd

The City’s water conservation goals include the following:

- . Maintain the City’s fixed base network meter system (Section 4.4).
- . Keep the level of unaccounted water in the system less than 10 percent in 2018 and subsequent years (Section 4.5).
- . Raise public awareness of water conservation and encourage responsible public behavior through a public education and information program, as discussed in Section 4.6.
- . Improve efficiency in landscape irrigation through implementation and enforcement of a landscape water management ordinance (Section 6.2).
- . Decrease outdoor water use by implementing a landscape irrigation systems program (Section 6.4).

4.3 Accurate Metering of Raw Water Supplies and Treated Water Deliveries

The City of Highland Village uses raw water meters at each wellhead and the UTRWD meters the treated water deliveries to FM407 and Southwood delivery points. Each meter has an accuracy of plus or minus 2 percent. The City’s meters are verified on an annual basis by staff, and UTRWD contractors to maintain the required accuracy. Meters that are determined to be outside to tolerance range for accuracy are repaired and/or replaced as needed.

4.4 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

Water usage for all customers of the City of Highland Village, including residential, commercial, institutional and governmental users, is metered. There are no industrial, agricultural or wholesale users on the distribution system.

As part of the water conservation/drought contingency plan, the City of Highland Village funded a complete water meter change out with an upgrade to a fixed base network meter reading system (AMI) in FY’11. FY’ 13 the City of Highland Village upgraded to a cellular based AMA system. In addition, any meters registering any unusual or questionable readings are tested and/or replaced.

4.5 Determination and Control of Unaccounted Water

“Unaccounted water” is the difference between water purchased and produced and metered deliveries to customers. Unaccounted water can include several categories:

- . Line flushing;
- . Inaccuracies in customer meters (customer meters tend to run more slowly as they age and under-report actual use);
- . Losses due to water main breaks and leaks in the water distribution system;
- . Theft;
- . Firefighting;
- . Inaccuracies of wholesale meters (plus or minus 2%);
- . Inaccuracies of internal meters (plus or minus 3%); and
- . Other unmeasured uses.

The City of Highland Village conducts water audits using AWWA guidelines published in *Water Audits and Leak Detection* (M36).

As shown in Appendix B, unaccounted water for the City of Highland Village has fluctuated from 2% to 5% in the last three years. With the measures described in this plan, it is the goal of the City of Highland Village to maintain the unaccounted water below 10% annually.

4.6 Continuing Public Education and Information Campaign

The continuing public education and information campaign on water conservation for the City of Highland Village includes the following elements:

- . Promote the City’s water conservation measures (presented in Sections 4, 5, and 6).
- . Include inserts on water conservation with water bills at least six times per year. Inserts may include material developed by City of Highland Village staff, material obtained from the American Water Works Association, TWDB, TCEQ, and other sources.
- . Notify local organizations, schools, and civic groups that City of Highland Village staff is available to make presentations on the importance of water conservation and ways to save water.
- . Utilize the Regional Water Districts Texas Smartscape program, water conservation brochures, and other water conservation materials available to the public.
- . Make information on water conservation available online at <http://www.highlandvillage.org> and include links to the Texas Smartscape website and to information on water conservation on the UTRWD, TWDB and TCEQ web sites.
- . Promote voluntary water conservation by deploying electronic message board signs throughout the City.

4.7 Non-Proportional Water Rate Structure

With the intent of encouraging water conservation and discouraging waste and excessive use of water, the City of Highland Village has adopted a water usage rate structure where the unit price of water increases with increasing water use. Current water rates (2013) are shown in Table 4.3.

Table 4.3

Monthly Customer Charges

Single-family residential use and irrigation

For meter readings taken monthly:

First 4,000 gallons, minimum bill.....	\$11.00
4,001 – 50,000 gallons, per 1,000 gallons.....	\$3.00
>50,000 gallons, per 1,000 gallons.....	\$15.00

Commercial (including apartments and industrial)

For meter readings taken monthly:

First 4,000 gallons, minimum bill.....	\$33.00
>4,000 gallons, per 1,000 gallons.....	\$3.00

Commercial irrigation

For meter readings taken monthly:

First 4,000 gallons, minimum bill.....	\$33.00
4,001 – 50,000 gallons, per 1,000 gallons.....	\$3.00
>50,000 gallons, per 1,000 gallons.....	\$8.00

4.8 Implementation and Enforcement of the Water Conservation / Drought Contingency Plan

Appendix C contains a copy of the City of Highland Village ordinance adopting this Water Conservation / Drought Contingency Plan. The ordinance designates responsible officials to implement and enforce the Water Conservation / Drought Contingency Plan. Appendix D, the Landscape Water Management ordinance for the City of Highland Village, also includes information about enforcement.

- Coordination with Regional Water Planning Group
- Additional required water conservation /drought contingency plan content

Appendix F includes a copy of a letter sent to the Chair of the Region C Water Planning Group with this Water Conservation / Drought Contingency Plan.

Title 30 of the Texas Administrative Code also includes additional requirements for water conservation plans for public drinking water suppliers that serve a population of 5,000 people or more and/or a projected population of 5,000 people or more within the next ten years:

- §288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 4.5, 5.1, and 6.3
- §288.2(a)(2)(B) – Record Management System – Section 5.2

5. ADDITIONAL REQUIRED WATER CONSERVATION PLAN CONTENT

5.1. Leak Detection and Repair; Pressure Control

Measures to control unaccounted water are part of the routine operations of the City of Highland Village. Meter maintenance crews watch for and report signs of illegal connections so they can be addressed quickly. Crews look for and report evidence of leaks in the water distribution system. The City launched a mobile application called Eye on Highland Village to allow residents to report issues they observe. One of the selections is water leaks. Maintenance crews respond quickly to repair leaks reported by the public and City personnel. Areas of the water distribution system where numerous leaks and line breaks occur are targeted for replacement as funds are available.

To further reduce water losses, the City of Highland Village maintains a proactive water loss program. As part of this program, the City's goal is to respond to reports of leaks within 30 minutes.

5.2. Record Management System

As required by 30 TAC § 288.2(a)(1)(B), the record management system for the City of Highland Village records water received, water pumped, and water sold; estimates water losses; and allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual conservation report, as described in Section 6.3 below.

6. OPTIONAL WATER CONSERVATION PLAN CONTENT

TCEQ rules also list optional conservation strategies, which may be adopted by suppliers to achieve the stated goals of the plan. The following optional strategies are listed in the rules and included in this plan:

- §288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 4.7
- §288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 6.1
- §288.2(a)(3)(F) – Landscape Water Management Ordinance – Section 6.2 and Appendix D
- §288.2(a)(3)(G) – Monitoring Method – Section 6.3 and Appendix F

In addition, the City of Highland Village will also pursue the following optional water conservation strategies that exceed those suggested in the rules:

- Residential Landscape Irrigation System Program – Section 6.4

6.1 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures

The City of Highland Village has adopted the 2015 International Plumbing Code with local amendment. These state and federal standards assure that all new construction and renovations in the City of Highland Village will use water-conserving fixtures.

6.2 Landscape Water Management Ordinance

As part of the development of this water conservation/drought contingency plan, the City of Highland Village adopted a Landscape Water Management regulations which are presently codified as Sections 22.10.071 through 22.10.075 of the City of Highland Village Code of Ordinances (Appendix D). This ordinance is intended to minimize waste in landscape irrigation and private service line water leaks. The ordinance includes the following elements:

- . Requirement that all new irrigation systems include rain and freeze sensors.
- . Requirement that all new irrigation systems be in compliance with state design and installation regulations (Texas Administrative Code Title 30, Part 1, Chapter 344).
- . Prohibition of excess runoff to public rights-of-way.
- . Prohibition of use of poorly maintained sprinkler systems that waste water.
- . Prohibition of outdoor watering during any form of precipitation.
- . Prohibition of outdoor watering during freezing temperatures.
- . Enforcement of the ordinance by a system of Notices of Violation followed by fines for continued or repeat violations.

6.3 Monitoring of Effectiveness and Efficiency - Annual Conservation Report

Appendix F is a form that will be used in the development of an annual conservation report for the City of Highland Village. The information for this form will be compiled by January 1st for the preceding fiscal year and will be used by the City to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. The form records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values.

6.4 Residential Landscape Irrigation Systems Program

The City of Highland Village will provide guidance to residential customers to improve the efficiency of their existing irrigation system. By improving the efficiency of an irrigation system, outdoor water usage can be reduced while maintaining a healthy landscape.

In this plan, irrigation system equipment that shall be required on all newly installed irrigations systems shall be as follows.

- . Rain and freeze shut-off device.

Customers will be responsible for installation & maintenance of all water conservation devices.

The projected reduction in per capita use from the landscape irrigation system program is 2 gpcd in 2019 and 5 gpcd by 2025.

7. DROUGHT CONTINGENCY PLAN

7.1 Introduction

The purpose of this water conservation / drought contingency plan is:

- . To conserve the available water supply in times of drought and emergency;
- . To maintain supplies for domestic water use, sanitation, and fire protection;
- . To protect and preserve public health, welfare, and safety;
- . To minimize the adverse impacts of water supply shortages; and
- . To minimize the adverse impacts of emergency water supply conditions.

7.2 State Requirements for Drought Contingency Plans

This water conservation / drought contingency plan is consistent with Texas Commission on Environmental Quality (TCEQ) guidelines and requirements for the development of drought contingency plans by public drinking water suppliers, contained in 30 TAC § 288.20.

TCEQ's minimum requirements for drought contingency plans are addressed in the following subsections of this report:

- . 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input - Section 7.3
- . 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information - Section 7.4
- . 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 7.9
- . 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Phases – Section 7.5
- . 288.20(a)(1)(E) – Drought and Emergency Response Phases – Section 7.6
- . 288.20(a)(1)(F) – Targets for water use reductions
- . 288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Phase – Section 7.6
- . 288.20(a)(1)(H) - Procedures for Initiation and Termination of Drought Stages Section 7.5
- . 288.20(a)(1)(I) - Procedures for Granting Variances – Section 7.7
- . 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Section 7.8
- . 288.20(a)(3) – Consultation with Wholesale Supplier – Section 7.9
- . 288.20(b) – Notification of Implementation of Mandatory Measures – Section 7.6.3.2 and Section 7.6.4.2
- . 288.20(c) – Review and Update of Plan – Section 7.11

7.3 Opportunity for Public Input

The City of Highland Village will provide an opportunity for public input in the development of the water conservation / drought contingency plan by the following means:

- Providing written notice of the proposed plan and the opportunity to comment on the plan by posted notice and notice on City of Highland Village's web site, www.highlandvillage.org
- Provide for a public hearing prior to adoption of the ordinance.

7.4 Provisions for Continuing Public Education and Information

The City of Highland Village will inform and educate the public about its water conservation /drought contingency plan by the following means:

- . Preparing a bulletin describing the plan and making it available at city hall.
- . Making the plan available through the City of Highland Village web site.
- . Utilizing the local cable television government channel as a public education tool.
- . Including summary information about the drought contingency plan on the City of Highland Village's web site and in utility bill inserts.
- . Notifying local organizations, schools, and civic groups that City of Highland Village staff members are available to make presentations on the Water Conservation and Drought Contingency Plan.

At any time that the water conservation / drought contingency plan is activated or the phase changes, the City of Highland Village will notify local media of the issues, the phase, and the specific actions required of the public. The information will also be published on the City of Highland Village web site and local government television channel. Billing inserts will also be used as appropriate.

7.5 Initiation and Termination of Water Conservation / Drought Contingency phases

7.5.1 Initiation of Water Conservation / Drought Contingency phases

The city manager or his designee may order the implementation of a phase or water emergency when one or more of the trigger conditions for that phase are met.

For other trigger conditions, the city manager or his designee may decide not to order the implementation of a phase or water emergency even though one or more of the trigger criteria for the phase are met. Factors that could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished water supplies, or the anticipation that additional facilities will become available to meet needs.

7.5.2 Termination of Water Conservation / Drought Contingency phases

The termination of phase 1 shall be September 30th of every year unless extended by council resolution. The termination of phases 2, 3, & 4 shall be five (5) weeks after activation unless extended by council resolution.

The city manager or his designee may decide not to recommend the termination of a phase or water emergency even though the conditions for termination of the phase are met. Factors that could influence such a decision include, but are not limited to, the time of the year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the drought phase.

7.6 Water Conservation / Drought Contingency phases

Phase I - Seasonal Conservation

Criteria:

Effective each year beginning May 1st and ending September 30th or dates as amended under this ordinance's implementation authority. The City Manager is authorized to implement Phase I –Seasonal Conservation measures earlier than May 1st or extend them to later than September 30th upon receipt of a notice from the Upper Trinity Regional Water District (UTRWD) that it has implemented its water conservation plan and emergency demand management and requests that the City implement the City's water conservation measures; provided, however, such extended dates shall only run concurrently with the dates during which UTRWD has implemented its own measures.

Purpose:

To reduce peak daylight hour demand on the municipal water supply during the high water use season and to enforce prudent outside watering practices.

GOAL FOR USE REDUCTIONS AND ACTIONS AVAILABLE UNDER PHASE 1:

The goal for water use reduction under Phase 1, Seasonal Conservation, is a two (2) percent reduction of the use that would have occurred in the absence of drought contingency measures.

Regulation:

1. No outside watering between the hours of 10:00 a.m. and 6:00 p.m. Hand watering of shrubbery allowed at any hour.
2. Variances to this regulation may be granted by permit only (see attached permit) available at the Municipal Complex (inspections/permits counter).
3. Users of private well water or lake water for irrigation are **required** to post a sign indicating so in a conspicuous location.
4. Hand washing of vehicles shall be permitted providing there is no wasteful runoff.
5. Wasteful runoff, by any means, shall be prohibited.

Implementation/Notification:

The following will be used:

- a) Water Use Regulation Plan notification will be sent to each water account annually in the utility bills.
- b) Water Use Regulation Plan Cards will be distributed to each new account at the time that account is established.
- c) Highland Village Community Television shall notify under the heading "Water Use Phase in Effect".

The following may also be used.

- a) Public announcement during City Council Session.
- b) Notification sent to local newspapers.
- c) Article in the Villager Newsletter and/or in the City of Highland Village Newsletter.
- d) Posted notification at City Hall and/or at the bulletin board at the Police Station.
- e) Deployment of electronic message board signage.

Enforcement Guidelines:

The Public Works Department of the City of Highland Village shall be responsible for the enforcement of the Water Use Regulation Plan. The Public Works Department will rely on the assistance of the citizenry and the Code Enforcement Division to enforce these regulations.

Phase II - Water Management

Criteria:

Any single or combination of the following events are required for Phase II implementation.

- a) When in the opinion of the City Manager or Designee the supply of water is inadequate to meet the previous Phase.
- b) When total system supply is reduced by a minimum 8% for greater than 8 days. Example: storage at beginning of the day is 7,250,000 gals. Storage at the end of the day is 6,670,000 gals.
- c) When demand exceeds 80% of supply for three (3) consecutive days or 100% for two (2) consecutive days.
- d) When the Upper Trinity Regional Water District (UTRWD) implements their water conservation plan and emergency demand management plan by resolution of the board of directors.
- e) When the State of Texas declares this region to be in a severe drought or greater.

Purpose:

To ensure an adequate supply of water for normal domestic use and firefighting during periods of short term sustained system degradation, inadequacy or drought.

GOAL FOR USE REDUCTION AND ACTIONS AVAILABLE UNDER PHASE 2:

The goal for water use reduction under Phase 2, Water Management, is a three (3) percent reduction of the use that would have occurred in the absence of drought contingency measures.

Regulation:

1. All landscape and other outside water use is prohibited on Monday and Friday to allow system recovery.
2. Hand watering of landscapes is permitted only from 6:00 p.m. to 10:00 a.m.
3. No outside water use permitted between the hours of 10:00 a.m. to 6:00 p.m.
4. Any use of water resulting in runoff (i.e. hosing off pavement or vehicles) or obvious waste is prohibited.
5. Users of private well or lake water systems are **required** to post a sign indicating so in a conspicuous location.
6. Commercial car washes and landscape nurseries not using well or reclaimed water shall submit a plan for reduced use of water to the Utility Division.
7. If this Phase is implemented under criteria (d), severe drought or greater, the City Manager or designee may direct that water rates for residential use in excess of 20,000 gals/month be double effective the next billing cycle.
8. Variances to these regulations is by permit only and is granted by the City Manager, Director of Public Works or the Utilities management, and is valid for a period not to exceed two weeks (see attached permit).

Implementation/Notification:

All of the following will be used:

- a) Public announcement during City Council session.
- b) Notification published in local newspaper.
- c) Highland Village Community Television.
- d) Posted notification at City Hall and/or bulletin board at the Police Station.
- e) Posting of signage in public right of ways throughout the City.

The following may also be used:

- a) Phase II cards sent to each water account.
- b) Telephone calls and/or e-mail to water users.

Phase II will automatically terminate five (5) weeks after implementation unless extended by Resolution of the City Council.

Enforcement Guidelines:

The Public Works Department of the City of Highland Village shall be responsible for the enforcement of the Water Use Regulation Plan. The Public Works Department will rely on the assistance of the citizenry and the Code Enforcement Division to enforce these regulations.

Phase Reduction Notification:

Phase reduction will be at the discretion of the City Manager or Designee, but in no case be delayed beyond a period of five (5) weeks without Resolution by the City Council.

One or more of the following is required:

- a) Phase reduction notice posted at City Hall and/or the Bulletin Board at the Police Station.
- b) Notification posted in local newspaper.
- c) Notification sent to each water account.
- d) Highland Village Community Television

Phase III - Water Management Alert

Criteria:

Any single or combination of the following events are required for Phase III implementation.

- a) When in the opinion of the City Manager or Designee the supply of water is inadequate to meet the previous Phase.
- b) When total system supply is reduced by a minimum 10% for greater than 10 days. Example: storage at beginning of day is 7,250,000 gals. Storage at the end of the day is 6,525,000 gals.
- c) When demand exceeds 100% of supply for four (4) consecutive days or 120% for three (3) consecutive days.
- d) When the Upper Trinity Regional Water District (UTRWD) implements their water conservation plans and emergency demand management plan by resolution of the board of directors.
- e) When the State of Texas declares this region to be in a severe drought or greater.

Purpose:

To ensure an adequate supply of water for normal domestic use and firefighting during periods of short term sustained system degradation, inadequacy or drought.

GOAL FOR USE REDUCTION AND ACTIONS AVAILABLE UNDER PHASE 3:

The goal for water use reduction under Phase 3, Water Management Alert, is a reduction of twenty (20) percent of the use that would have occurred in the absence of drought contingency measures. If the circumstances warrant, the city manager or his designee can set a goal for greater water use reduction.

Regulation:

1. All landscape and other outside watering use is prohibited on Monday and Friday to allow system recovery.
2. Hand watering of landscapes is permitted only from 6:00 p.m. to 10:00 a.m.
3. Watering with a sprinkler is prohibited.

4. Any use of water resulting in runoff (i.e. hosing off pavement or vehicles) or obvious waste is prohibited.
5. Users of private well or lake water systems are **required** to post a sign indicating so in a conspicuous location.
6. Commercial car washes and landscape nurseries not using well or reclaimed water shall submit a plan for reduced use of water to the Utility Division.
7. Variances to the above regulations is by permit only and is granted by the City Manager, Director of Public Works or Utilities management, and is valid for a period not to exceed two weeks (see attached permit).
8. If this Phase is implemented under criteria (d), severe drought or greater, the City Council may direct that water rates be adjusted as follows: Usage in excess of 20,000 gals/month be charged double of current rates. If declared on or before 5 days following the start of the current month's meter reading cycle, the rates would be effective with the current month's usage, otherwise, the double rates would be effective starting with the next billing period. In either case, the modified rate structure will remain in effect for a minimum of one billing cycle. This action may be decided by directive of the City Council prior to the next scheduled calculation of monthly water bills.

Implementation/Notification:

All of the following will be used:

- a) Public announcement during City Council session.
- b) Notification published in local newspaper.
- c) Highland Village Community Television
- f) Posted notification at the Municipal Complex and/or bulletin board at the Police Station.
- g) Posting of signage in public right of ways throughout the City.

The following may also be used:

- a. Phase III cards sent to each water account.
- b. Telephone calls and/or e-mail to water users.

Phase III will automatically terminate five (5) weeks after implementation unless extended by Resolution of the City Council.

Enforcement Guidelines:

The Public Works Department of the City of Highland Village shall be responsible for the enforcement of the Water Use Regulation Plan. The Public Works Department will rely on the assistance of the citizenry and the Code Enforcement Division to enforce these regulations.

Phase Reduction Notification:

Phase reduction will be at the discretion of the City Manager or Designee, but in no case be delayed beyond a period of five (5) weeks without Resolution by the City Council.

One or more of the following is required:

Phase reduction notice posted at City Hall and/or the Bulletin Board at the Police Station.

- a) Phase reduction notice posted at City Hall and/or the Bulletin Board at the Police Station.
- b) Notification posted in local newspaper.
- c) Notification sent to each water account.
- d) Highland Village Community Television

Phase IV - Water Management Emergency

Criteria:

Any single or combination of the following events are required for Phase IV implementation.

- a) Resolution by the City Council.
- b) When total system supply is reduced by a minimum of 25% for greater than 10 days. Storage at the beginning of the day is 7,250,000 gals. Storage at the end of the day is 5,437,500 gals.
- c) When demand exceeds 125% of supply for four (4) consecutive days or 150% for two (2) consecutive days or 100% for fourteen (14) days.
- d) Water system is contaminated either accidentally or intentionally.
- e) System fails from a catastrophic event such as storms or causes of man.
- f) When the Upper Trinity Regional Water District (UTRWD) implements their water conservation plan and emergency demand management plan by resolution of the board of directors.
- g) When the State of Texas declares this region to be in an extreme drought

Purpose:

To ensure an adequate supply of water for minimum domestic use and firefighting during periods of severe system degradation, inadequacy or drought.

GOAL FOR USE REDUCTION AND ACTIONS AVAILABLE UNDER PHASE 4:

The goal for water use reduction under Phase 4, Water Management Emergency, is a reduction of fifty (50) percent of the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the city manager or his designee can set a goal for greater water use reduction.

Regulation:

1. Water use other than domestic use within the home is prohibited.
2. All landscape and other outside water use is prohibited.
3. Users of private well or lake water systems are **required** to post a sign indicating so in a conspicuous location.
4. The use of water by commercial car washes and landscape nurseries not using well or reclaimed water is prohibited.
5. Variance Permits granted under a different water use regulation phase are suspended.
6. If this Phase is implemented under criteria (f), extreme drought, and extended by Resolution of the City Council, the City Manager may direct that water rates for residential use in excess of 10,000 gals/month be double, effective the next billing cycle.
7. The City Manager or Director of Public Works will submit to the City Council at its next regularly scheduled meeting, a detailed plan to cope with or resolve the water shortage emergency.
8. No Variance Permits will be granted.

Implementation/Notification:

All of the following will be used:

- a) Public announcement during City Council session.
- b) Notification published in local newspaper.
- c) Highland Village Community Television
- d) Posted notification at City Hall and/or bulletin board at the Police Station.
- e) Posting of signage in public right of ways throughout the City.

The following may also be used:

- a) Phase IV Cards sent to each water account
- b) Telephone calls and/or e-mail to water users.

Phase IV will automatically terminate five (5) weeks after implementation unless extended by resolution of the City Council.

Enforcement Guidelines:

The Public Works Department of the City of Highland Village shall be responsible for the enforcement of the Water Use Regulation Plan. The Public Works Department will rely on the assistance of the citizenry and the Code Enforcement Division to enforce these regulations.

Phase Reduction Notification:

Phase reduction will be at the discretion of the City Manager or Designee, but in no case be delayed beyond a period of five weeks without Resolution by the City Council.

One or more of the following is required:

- a) Phase reduction notice posted at City Hall and/or the bulletin board at the Police Station.
- b) Notification posted in local newspaper.
- c) Notification sent to each water account.
- d) Highland Village Community Television

7.7 Procedure for Granting Variances to the Plan

A. The city manager or his designee may grant temporary variances for existing water uses otherwise prohibited under this drought contingency plan if one or more of the following conditions are met:

- . Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person requesting the variance.
- . Compliance with this plan cannot be accomplished due to technical or other limitations.
- . Alternative methods that achieve the same level of reduction in water use can be implemented.

B. Variances shall be granted or denied at the discretion of the city manager or his designee. All petitions for variances shall be in writing on a City provided form and a letter that shall include the following information:

- . Name and address of the petitioner(s).
- . Purpose of water use.
- . Specific provisions from which relief is requested.
- . Detailed statement of the adverse effect of the provision from which relief is requested.
- . Description of the relief requested.
- . Period of time for which the variance is sought.
- . Alternative measures that will be taken to reduce water use.
- . Other pertinent information.

C. Persons using raw water for irrigation, whether from a customer owned and operated well or permitted lake water, are required to post signs in a conspicuous area on the property clearly stating such. The City of Highland Village requires that a copy of the current permit for drawing lake water to irrigate be submitted to the Utility Division:

1 In no case shall a property utilizing raw water of any source be cross-connected to the City potable water supply as required by Code 90, Article II, Division 3, Section 22.08.012 of the Highland Village Code of Ordinances.

7.8 Procedure for Enforcement of Mandatory Restrictions

Mandatory water use restrictions may be imposed in Phase 1, Phase 2, Phase 3 and Phase 4 drought phases. These mandatory water use restrictions will be enforced by Notices of Violation and penalties as follows:

- . On the first violation, customers will be given a written notice of violation of the mandatory water use restriction.
- . On the second violation, the City of Highland Village may install a flow restrictor in the line to limit the amount of water that may pass through the meter in a 24-hour period. The City will remove the flow restriction device after a period of (5) five working days and the violator's satisfactory completion of an education meeting with city staff on water conservation and the city's water restriction regulations.
- . On the third and subsequent violations, citations may be issued to customers, with fines not to exceed \$2,000 per day.
- . After four violations have occurred, the City of Highland Village may terminate water service to the customer. Any reconnection fees shall apply.

7.9 Consultation with Wholesale Supplier

The City of Highland Village is a wholesale customer of the (UTRWD) Upper Trinity Regional Water District. Provisions for responding to reductions or limitations in the wholesale supply are included in the triggering mechanisms for the drought contingency plan stages. City of Highland Village staff participate in the wholesale customer meetings with the UTRWD.

7.10 Coordination with the Regional Water Planning Group

The City of Highland Village is located within the Region C Water Planning Area. Appendix F includes a copy of a letter sent to the Chair of the Region C Water Planning Group (RCWPG) with this Water Conservation/Drought Contingency Plan.

7.11 Review and Update of Water Conservation/Drought Contingency Plan

As required by TCEQ rules, the City of Highland Village will review this Water Conservation/Drought Contingency Plan every five years, beginning in 2009. The plan will be updated as appropriate based on new or updated information. As the plan is reviewed and subsequently updated, a copy of the revised Water Conservation/Drought Contingency Plan will be submitted to the TCEQ, TWDB, Regional water district (UTRWD) and the RCWPG for their records.

Appendix A

LIST OF REFERENCES

- (1) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2, and Subchapter B, Rule 288.20, downloaded from
<http://www.tceq.texas.gov/assets/public/legal/rules/rules/pdflib/288a.pdf>
<http://www.tceq.texas.gov/assets/public/legal/rules/rules/pdflib/288b.pdf>
- (2) Texas Commission on Environmental Quality: “Water Utility Profile,” accessed online at
http://dww.tceq.state.tx.us/DWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=1331&tinwsys_st_code=TX&wsnumber=TX0610080_&DWWState=TX
- (3) Texas Water Development Board: “Water Demand Projections, 2006 Regional Water Plan Data,” accessed online at <http://www.twdb.state.tx.us/waterplanning/data/projections/index.asp>
- (4) “Water Conservation Best Management Practices Guide,” Water Conservation Implementation Task Force, Texas Water Development Board Report 362; November 2004. Accessed online at <http://www.twdb.state.tx.us/conservation/BMPs/Mun/index.asp>
- (5) Texas Commission on Environmental Quality: “Model Drought Contingency Plan,” accessed online at http://www.tceq.texas.gov/permitting/water_rights/contingency.html#continge.
- (6) Region C Water Planning Group: “Draft Model Water Conservation and Drought Contingency Plan for Municipal Water User Groups,” September 2004.
<http://www.twdb.state.tx.us/conservation/BMPs/Mun/doc/9.2.pdf>

APPENDIX B

Water Utility Profile

Name of Utility: **City of Highland Village
(PWSID0610080)**
Address & Zip: **1000 Highland Village Rd.**
Telephone Number: **972/317-2989**
Fax Number: **972/317-3086**
Form Completed by: **Scott Kriston**
Title: **Director of Public Works**
Signature: _____
Date: _____

Name and phone number of person/department responsible for implementing a water conservation program: Name: **Scott Kriston, Director of Public Works (WO0018048)**

Phone Number: **972/317-2989**

I. CUSTOMER DATA

A. Population and Service Area Data

- 1. A service area map is attached.
 - 2. Service area size (square miles): **5.5**
 - 3. (2019) estimated population of service area: **16,662**
 - 4. (2019) estimated population served by utility: **16,662**
- water: **5,549**
wastewater: **5,218**

6. Miles of Water Distribution Pipeline: **102**

- 1 Population served by utility for the previous five years.
- 2 Projected population for service area in the following decades
- 3 List source(s)/method(s) for the calculation of current and projected population:

Year	Population
2014	15,500
2015	16,000
2016	16,000
2017	16,500
2018	17,000

Year	Population
2020	17,000
2030	17,800
2040	17,800
2050	17,800
2060	17,800
2070	17,800

City of Highland Village Utility Billing Department

B. Active Connections

1. 2018 number of active connections by user type.

Treated Water Users	Metered	Non-Metered	Total
Residential	5196		5196
Commercial	126		126
Industrial	2		2
Institutional	42		42
Agricultural	192		192
Total	5,554	0	5,554

2. List the net number of new connections per year for most recent three years:

Year	2016	2017	2018
Residential	16	11	38
Commercial	1	4	5
Industrial			
Institutional	9	5	7
Agricultural	13	3	4
Total	39	23	54

C. High Volume Customers

List annual water use for the five highest volume retail and wholesale customers.

Customer	Use (1,000 gal/yr)
DDR CORP	5,888
Wal-Mart Stores TX LP.	5,702
MP Shops 4121 Barton Crk	3,582
Briarhill Ball Park	2,100
ROC-ALR-HV	2,032

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. Amount of water use for previous five years (in 1,000 gal): Treated Water (supplied from UTRWD and 5 City ground water wells)

Year	2014	2015	2016	2017	2018
October	88,259	100,037	115,265	85,236	95,707
November	57,382	57,336	50,885	58,968	72,396
December	46,513	46,497	45,962	49,667	53,821
January	51,270	42,798	41,933	42,742	43,927
February	45,719	37,659	47,971	43,166	37,250
March	61,757	43,532	56,484	59,336	53,353
April	74,169	52,087	64,423	60,585	73,308
May	105,152	47,657	66,023	101,385	109,280
June	108,574	84,301	92,150	94,371	133,147
July	131,768	137,410	143,854	111,926	155,366
August	140,879	184,296	147,666	102,952	106,251
September	132,905	154,827	118,561	118,502	62,086
Total	1,044,346	988,436	991,178	928,836	995,892

The above figures were determined from UTRWD meters located at the point of diversion and raw water meters located at the well head prior to raw water entering the treatment plant.

- Metered amount of water delivered (sold) and estimated water flushed/leaked/firefighting (in 1,000 gallons).

Fiscal Year	Total water sold	Total estimated water flushed/leaks
2014	922,729	7,327
2015	932,892	5,606
2016	931,106	23,380
2017	888,844	18,471
2018	1,044,739	14,957

- List previous five years records of unaccounted water use (in 1,000 gallons).
(The percentages are based on the meters readings, billed water consumption not in correlation with the monthly billing cycles and estimated water from leaks/flushed)

Year	Amount of unaccounted for water	% unaccounted for water use
2014	114,290	11%
2015	49,938	5%
2016	36,692	4%
2017	21,521	2%
2018	-63,804	-6%

- List previous five years records for annual peak-to-average daily use ratio

Year	Average MGD	Peak MGD	Ratio
2014	2.9	6.6	1:2.28
2015	2.7	7.6	1:2.81
2016	2.7	7.5	1:2.78
2017	2.5	6.6	1:2.64
2018	2.7	7.3	1:2.70

- Municipal per capita water use for previous five years

Year	Population	Total Purchased/Produced (1,000 gal)	Industrial Sales (1,000 gal)	Residential Water Sold (1,000 gal)	Municipal Use (1,000 gal)	Total per Capita Use (gpcd)
2014	17,000	1,044,346	0	793,505	17,633	155
2015	17,000	988,436	0	771,349	21,226	150
2016	17,000	991,178	0	776,979	19,327	145
2017	17,000	928,836	0	749,417	16,588	148
2018	17,000	995,892	0	868,372	20,301	146

- Average total per capita use and water conservation goals

Average & Goals	AVG. Population	GPCPD
5-year average	17,000	168

7-year average	17,000	165
2-year drought avg.	17,000	157
5-year goal	17,000	170-175
10-year goal	17,800	160-170

7. Seasonal/Summer water use for the previous five years (in gallons/person/day)

Year	Population	Base per Capita Use (gpcd)	Summer per Capita Use (gpcd)	Seasonal Use (gpcd)
2014	17,000	155	244	127
2015	17,000	150	260	125
2016	17,000	145	192	131
2017	17,000	148	197	134
2018	17,000	146	252	130

B. Projected Water Demands Provide estimates for total water demands for the planning horizon of the utility. Indicate sources of data and how projected water demands were determined.

Year	Projected Demand (Ac-Ft)	Source of data	Water savings target (gpcd)	Water loss target (gpcd)	Explanation of the Methodology Used to Develop Projection
2020	3,000	COHV/UTRWD Long Range Water Supply Plan	5	>7	City & UTRWD for planning.
2025	3,000	COHV/UTRWD Long Range Water Supply Plan	10	>7	City & UTRWD for planning.
2030	3,000	COHV/UTRWD Long Range Water Supply Plan	15	>7	City & UTRWD for planning.
2040	3,000	COHV/UTRWD Long Range Water Supply Plan	NA	>7	City & UTRWD for planning.
2050	3,000	COHV/UTRWD Long Range Water Supply Plan	NA	>7	City & UTRWD for planning.
2060	3,000	COHV/UTRWD Long Range Water Supply Plan	NA	>7	City & UTRWD for planning.
2070	3,000	COHV/UTRWD Long Range Water Supply Plan	NA	>7	City & UTRWD for planning.
2080	3,000	COHV/UTRWD Long Range Water Supply Plan	NA	>7	City & UTRWD for planning.

III. WATER SUPPLY SYSTEM

A. Water Supply Sources

List all current water supply sources and the amounts available with each:

Type	Source	Amount Available (MGD)
Surface water		
Groundwater	City's 5 Water Wells	4.5
Contracts	Upper Trinity Regional Water District	3.0
Other		

B. Treatment and Distribution System

- Design daily capacity of system: **7.5 MGD**
- Storage capacity: Elevated **1.50 MG** Ground **6.85 MG**
- If surface water, do you recycle filter backwash to the head of the plant? Yes **N/A** No. If yes, approximate MGD.
- Please describe the water system. Include the number of treatment plants, wells, and storage tanks.

Water utility service for each Highland Village citizen comes by way of a purchase of potable water from the Upper trinity Regional Water District and the City's 5 ground water wells and is delivered through a network of water mains, pumping stations, ground storage tanks and elevated storage tanks that is made up of 102 miles of water distribution main, 1.50 million gallons of elevated storage tank capacity in 2 tanks, 6.85 million gallons of ground storage capacity in 6 tanks, 815 fire hydrants, 5,563 water meters and approximately 2,000 valves.

IV. WASTEWATER UTILITY SYSTEM

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s): **UTRWD owned & operated.**
2. Is treated effluent used for irrigation on-site, off-site: **NA**
3. Briefly describe the wastewater system(s) of the area services by the water utility. Describe how treated wastewater is disposed of. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. Please provide a sketch or map, which located the plant(s) and discharge or disposal sites. **100 miles of wastewater collection mains with 9 wastewater lift stations and approximately 3,100 manholes.**

Treatment Plant Name	TCEQ DM Number	Operator	Owner	Receiving Stream
Lakeview Regional WWTP	TX0020354	UTRWD	UTRWD	Lewisville Lake

B. Wastewater Data for Service Area

1. Percent of water service area served by wastewater system: **99.9 %**
2. Monthly wastewater volume for previous three years (in 1,000 gallons):

Year	2016	2017	2018
October	38,459	35,332	32,149
November	50,367	35,266	31,482
December	70,503	35,396	34,180
January	58,602	36,780	33,335
February	47,971	33,753	33,670
March	48,596	36,376	40,685
April	46,339	38,553	35,048
May	44,593	35,371	35,391
June	56,341	37,714	31,717
July	40,096	35,721	29,879
August	36,708	32,708	68,140
September	34,349	32,499	35,634
Total	572,924	425,469	441,310

APPENDIX C

APPENDIX D

City of Highland Village Code of Ordinances

Chapter 22 – Utilities

Article 22.10 -Water Conservation

Division 3. Landscape Water Management

Sec. 22.10.071 General restrictions

- (a) A person commits an offense if he/she allows exterior plumbing leaks to exist.
- (b) A person commits an offense if he/she irrigates, waters, or causes or allows the irrigation or watering of lawn or landscape located on property owned, leased, or managed by that person in such a manner that causes:
 - (1) A constant stream of water onto a street or alley in excess of 50 feet from the property;
 - (2) Irrigating a lawn or landscape during any form of precipitation. This includes automatic sprinkler systems; or
 - (3) Irrigating lawn or landscape when the ambient temperature is below 32 degrees Fahrenheit.

Sec. 22.10.072 Maintenance of irrigation system

A person commits an offense if he/she operates a lawn or landscape irrigation system or device on property that he/she owns, leases, or manages that:

- (1) Has broken or missing sprinkler head(s); or
- (2) Has not been properly maintained to prevent the waste of water.

Sec. 22.10.073 Rain sensors and freeze gauges

- (a) Any new irrigation system installed within the city's customer service area on or after October 1, 2007, must be equipped with rain and freeze sensing devices designed to prevent operation of the irrigation system during any form of precipitation or when the ambient temperature is below 32 degrees Fahrenheit.
- (b) A person commits an offense on property owned, leased, or managed by him/her if he/she:
 - (1) Installs or allows the installation of new irrigation systems in violation of this section; or
 - (2) Operates or allows the operation of an irrigation system that does not comply with this section.

Sec. 22.10.074 Granting of variance

The city manager or his designee may, in special cases, grant variances from the provisions in this division for persons demonstrating extreme hardship or need. Variances may be granted only under all of the following circumstances and conditions:

- (1) The applicant must sign a compliance agreement agreeing to irrigate, water the lawn and/or landscape only in the amount and matter permitted by the variance.
- (2) The variance must not cause an immediate significant reduction to the city's water supply.
- (3) The extreme hardship or need requiring the variance must relate to the health, safety, or welfare of the person making the request.
- (4) The health, safety, and welfare of the public and the person making the request must not be adversely affected by the requested variance.

Sec. 22.10.075 Revocation of variance

The city manager or his designee may revoke a variance granted when he determines that:

- (1) The conditions of Section 22.10.074 are not being met or no longer apply;
- (2) The terms of the compliance agreement are violated; or
- (3) The health, safety, or welfare of other persons requires revocation.

APPENDIX E



May 29, 2019

Mr. Jim Parks
Chair, Region C Water Planning Group
North Texas Municipal Water District
P.O. Box 2408
Wylie, TX 75098

RE: Water Conservation/Drought Contingency Plan City of Highland Village

Dear Mr. Parks:

Enclosed please find one (1) copy of the recently amended Water Conservation/Drought Contingency Plan for the City of Highland Village. This copy of the plan is submitted to the Region C Water Planning Group in accordance with the rules of the Texas Water Development Board and the Texas Commissions on Environmental Quality. The Highland Village City Council adopted the attached plan on May 28, 2019. The plan is updated with FY-18 figures.

Sincerely,

Scott Kriston
Director of Public Works

cc: Michael Leavitt, City Manager



May 29, 2019

Mr. Jodi Zamboli, P.E.
Director/ Operations
Upper Trinity Regional Water District
P.O. Drawer 305
Lewisville, TX 75067

RE: Water Conservation/Drought Contingency Plan City of Highland Village

Dear Mr. Zamboli:

Enclosed please find one (1) copy of the recently amended Water Conservation/Drought Contingency plan for the City of Highland Village. This copy of the plan is submitted to the Texas Commissions on Environmental Quality. The Highland Village City Council adopted the attached plan on May 28, 2019. The plan is updated with FY-18 figures.

Sincerely,

Scott Kriston
Director of Public Works

cc: Michael Leavitt, City Manager



May 29, 2019

Ms. Bridget Cameron
Water Conservation Specialist
Texas Water Development Board
P.O. 13231
Austin, TX 78711-3231

RE: Water Conservation/Drought Contingency Plan City of Highland Village

Dear Ms. Cameron:

Enclosed please find one (1) copy of the recently amended Water Conservation/Drought Contingency plan for the City of Highland Village. This copy of the plan is submitted to the Texas Commissions on Environmental Quality. The Highland Village City Council adopted the attached plan on May 28, 2019. The plan is updated with FY-18 figures.

Sincerely,

Scott Kriston
Director of Public Works

cc: Michael Leavitt, City Manager

APPENDIX F



WATER CONSERVATION REPORT

Entity Reporting: City of Highland Village PWSID #0610080

Completed By:

Date Completed:

Year Covered: 20XX

of Connections:

Population served:

Recorded Deliveries and Sales by Month (in 1000 Gallons):

Month	Treated Water purchased	Well water pumped	Sales by Category						
			Residential	Commercial	City usage	flushed	Estimated fire use	Industrial	Total
October									
November									
December									
January									
February									
March									
April									
May									
June									
July									
August									
September									
TOTAL									

Unaccounted Water (Million Gallons):

Estimated Fire use, estimated main leaks and metered line flushing are combined and shown in the flushed column.

Per Capita Municipal Use (Gallons per person per day)

Total annual water sales divided by days in a year divided by current population.