CITY OF KERRVILLE, TEXAS
RESOLUTION NO. 26-2014

A RESOLUTION ADOPTING THE CITY OF KERRVILLE WATER CONSERVATION PLAN AND AUTHORIZING THE CITY MANAGER TO TAKE ALL ACTIONS IN CONFORMANCE WITH LAW

WHEREAS, Section 11.1271 of the Texas Water Code and the rules of the Texas Commission on Environmental Quality (TCEQ) at 30 Texas Administrative Code Chapter 288 require the City to include specific, quantified five-year and ten-year targets for water savings in a Water Conservation Plan; and

WHEREAS, this law requires the City to update its Water Conservation Plan every five (5) years to coincide with the regional water planning group; and

WHEREAS, the City recognizes that the amount of water available to its water customers is limited; and

WHEREAS, the City also recognizes that due to natural limitations, drought conditions, system failures, and acts of God which may occur, the City cannot guarantee an uninterrupted water supply for all purposes at all times; and

WHEREAS, City staff verify that the attached Water Conservation Plan complies with the applicable rules of the Texas Commission on Environmental Quality; and

WHEREAS, adoption of the Water Conservation Plan followed written notice to the public concerning the proposed plan and a subsequent public meeting at a time and location convenient to the public, and an opportunity for public comment on the plan; and

WHEREAS, the City Council of the City of Kerrville, Texas, finds it in the public interest to adopt the Water Conservation Plan as presented;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KERRVILLE, KERR COUNTY, TEXAS:

SECTION ONE. The City Council approves and adopts the City's Water Conservation Plan, dated August 2014, which is attached hereto as **Exhibit A**.

SECTION TWO. The City Manager is authorized to execute any and all documents or take any action necessary to maintain the Water Conservation Plan.

PASSED AND APPROVED ON this the 26th **day of** August **, A.D., 2014.**

Jack Pratt, Jr., Mayor

APPROVED AS TO FORM:
Michael C. Hayes, City Attorney

ATTEST:
Brenda G. Craig, City Secretary

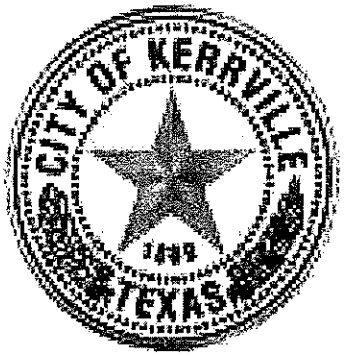
Resolution
26-2014

T:\Legal\PUBLIC WORKS\Reso\Water Conservation Plan_082214.docx

WATER CONSERVATION PLAN UPDATE

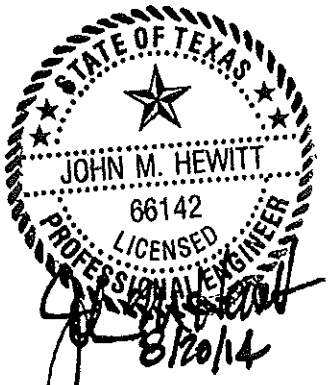
Prepared for

THE CITY OF KERRVILLE



AUGUST 2014

Hewitt Engineering, Inc.
TBPE FIRM NO. F-10739
716 Barnett Street
Kerrville, Texas 78208
830-315-8800



Hewitt Engineering, Inc.
Consulting Engineering Services

WATER CONSERVATION PLAN UPDATE
CITY OF KERRVILLE

Table of Contents

APPENDICES

1.0 INTRODUCTION

This 2014 Water Conservation Plan Update has been prepared for the City of Kerrville public water system as required by the Texas Water Development Board (TWDB) regulations. The Water Conservation Plan is required to be updated every five years for entities with more than 3,300 connections and must be completed in accordance with Texas Administrative Code regulations (31 TAC 363.15).

The purpose of this plan is to develop a strategy or combination of strategies for reducing the consumption of water, reducing the loss or waste of water, improving or maintaining the efficiency in the use of water, and increasing recycling and reuse of water. The City of Kerrville's conjunctive use water system is comprised of a surface water treatment plant on the Guadalupe River, two aquifer storage and recovery (ASR) wells, and a native groundwater well system. During winter months or other times when water usage is low, surplus treated surface water is stored in the ASR system. During times of high river flow in the Guadalupe River, approximately 80% of the water consumed in the system is surface water from the Guadalupe River. During times of low river flow, the water demand in the system is provided by a combination of surface water, ASR water and native ground water.

The Trinity aquifer serves as the primary groundwater source in the Kerrville area. This aquifer consists of deposits of sand, clay and limestone from the Glen Rose and Travis Peak formations of the Lower Cretaceous Trinity Group. The water bearing units include the Glen Rose limestone, Hensell sand, Cow Creek limestone, Sligo limestone, and Hosston sand. Based on their hydrologic relationships, the water bearing rocks of the Trinity group, collectively referred to as the Trinity aquifer system, are organized into the following aquifer units:

- Upper Trinity Aquifer-Upper Glen Rose Limestone formation
- Middle Trinity Aquifer-Lower member of the Glen Rose Limestone, Hensell Sand and Cow Creek limestone formations
- Lower Trinity Aquifer-Sligo Limestone and Hosston Sand formations

Because of fractures, faults, and other hydrogeologic factors, the upper, middle and lower Trinity aquifer units are often in hydraulic connection with one another and should collectively be considered a leaky aquifer system. The Lower Trinity aquifer is primarily used to provide groundwater supplies to the City of Kerrville.

There are ten (10) operational water supply wells in the City of Kerrville water system. Two of these wells operate as aquifer storage and recovery wells. All of these wells pump water from the Lower Trinity aquifer.

The City water system has 14 different pressure planes which comprise three main pressure plane zones in the system. These zones include the Lois West zone, Stadium/Kerr North zone and the Stadium/Central zone. The Lois West zone includes the West Side, West Bluff Hydro and Hilltop Hydro pressure planes. The Stadium/Kerr North zone includes the Kerrville North, College Cove 1, College Cove 2, Highlander, Hillcrest and Summit pressure planes. The

Stadium/Central zone consists of the Stadium/Central Low, Riverhill, Stone Ridge and Stone Ridge 2, and Comanche Trace pressure planes.

2.0 WATER CONSERVATION PLAN REQUIREMENTS

The TWDB has identified specific requirements required for the Water Conservation Plan and the following sections match the specified TWDB Water Conservation Plan Requirements.

A. Evaluation of the Applicant's Water and Wastewater System

The Water Conservation Utility Profile, TWDB-10218, is attached as Appendix A. The utility profile includes population and customer data, water use data for the service area, water sales by classification, water supply system data and wastewater system data.

Based on the City of Kerrville population data and the Regional Water Planning Group J population projections, the service area is expected to increase from the current population of 22,347 to approximately 26,000 in 10 years and to approximately 29,545 in 2060.

The current number of active connections in the City is 12,494. This total includes 7,601 single family, 2,864 multi-family, 1,494 commercial and 535 agriculture water users. The total number of connections represents an increase of 615 from 2012.

Total water produced in 2013 was 1,362,212,000 gallons and total water usage in 2013 was 1,093,867,000 gallons. The per capital water usage based on total water produced is 167 gallons per capita per day (gcpd) and total per capita water usage based on retail water sold is 134 gpcd. Physical water loss in the water distribution system for 2013 was estimated at 221,826 gallons which is approximately 16.5% of the water input into the system. An additional 14,560,017 gallons was consumed but not properly measured and defined as apparent water loss in the system. The total water loss in the system was 235,846,017 gallons equivalent to 28.9 gpcd loss or a total water loss of 17.3%.

B. Five and Ten Year Water Savings Targets

The City of Kerrville currently maintains several methods and programs that serve to promote water conservation and water savings primarily on the supply side. As the City moves toward a more comprehensive Water Conservation Program, additional emphasis will be placed on encouraging demand side conservation through implementation of best management practices and technologies implemented by or affecting the customer directly.

Currently, the City of Kerrville encourages water conservation and efficient use of our water resources through several ongoing programs. In general, the current mix of programs and efforts emphasizes operations and system management, but does include some educational efforts that target residential water customers. Year round water conservation measures are strongly encouraged for customers and are described in Section 110-93 of Article III-Water Management Plan listed in Part II-Code of Ordinances for the City. The Water Management Plan is included in this document in Appendix D. Currently implemented water conservation programs include:

1) Universal Metering
2) Golf Course and Park Irrigation Conservation Program
3) Water Conservation Rates
4) Plumbing Codes
5) Meter Replacement Program
6) Non-Potable/Water Reuse
7) Emphasis on Short Repair Times
8) Periodic System Water Audits
9) Leak Detection Program
10) Promote Water Conservation Measures in Local Hotels and Restaurants
11) Public Outreach

Within the last two years, the City has spent over $2,000,000 to replace approximately 9,000 water meters from manual read to radio frequency throughout the city. The new meters have the capability to provide customers with consumption usage in order to help monitor and reduce water usage throughout the system.

The City has also significantly increased the usage of non-potable and wastewater effluent over the past few years. Current users of the treated wastewater effluent include the City of Kerrville Scott Schreiner Municipal Golf Course, Comanche Trace Golf Course, wash down water at the City of Kerrville Wastewater Treatment Plant and Kerr County Animal Control Facility, irrigation at the Hill Country Youth Soccer fields and reuse water supply for construction projects in the area.

In addition, the City emphasizes leak detection through continuous visual inspections of the distribution system by City staff. Known leaks are repaired immediately and suspected leaks are investigated in a timely fashion. Quicker responses to leaks results in a reduction in overall water usage and demand.

Public education and outreach is a key component to the success of the Program. Through public education, residents gain an understanding of how they can participate and benefit in water conservation and become more informed about water supply issues in their community. An educated public can be a broad base of support for the City's water reduction efforts.

Recommended future water conservation enhancement programs in addition to the existing programs include:

1) System Water Audit and Water Loss Prevention Program
2) Non-Potable/Reuse Water Projects
3) Expand Water Conservation Measures in Local Hotels and Restaurants
4) Expand Golf Course and Park Irrigation Conservation Program
5) Expand Landscape Design & Conversion (Xeriscaping) Program

Many of the future water conservation programs are a continuation and expansion of the existing programs. However, one specific program to help reduce overall City of Kerrville water

consumption is the increased use of treated wastewater in the service area resulting in a reduction in the demand for potable water. Current users of the treated wastewater effluent and reuse water are described above. The City is currently evaluating alternatives and started conceptual planning for additional non-potable water reuse projects including providing additional pond storage of wastewater effluent. The additional volume of wastewater effluent could be used for additional irrigation at parks, golf courses and athletic fields within the City service area.

Five-year and ten-year targets have been established for water savings in the City of Kerrville water system. These targets include goals for water loss programs and goals for municipal and residential water usage in terms of gallons per capita per day. The five-year water use goals and savings include a total City per capita usage target of 155 gpcd, water loss target of 24 gpcd and water loss percentage target of 15% for 2019. The ten-year water use goals and savings include a total City per capita usage target of 150 gpcd, water loss target of 20 gpcd and water loss percentage target of 13% for 2024.

C. Implementation Schedule

Each of the previously described future water conservation programs are scheduled to be implemented during the next five year period. Programs such as water conservation measures in local hotels and restaurants, golf course and park irrigation, and landscape design and xeriscape conversion will be expansion of existing water conservation programs in order to achieve larger customer participation and further reduction in water usage in the system. The City's water audit and water loss prevention program includes periodic evaluation of the utilities specifically geared toward reducing water loss.

The City has already identified and started conceptual planning for additional non-potable water reuse projects and additional pond storage of wastewater effluent. As previously described, additional pond storage of effluent provides numerous opportunities to reduce water usage for the City. Planning, design and construction of the ponds for this program are scheduled to be completed within the next five years.

D. Tracking Method for Implementation and Effectiveness

The primary objective of the water conservation plan is to reduce the per capita use of potable water and water loss within the City of Kerrville. In order to reach this objective, the following goals have been established as being both reasonable and achievable:

1. Reduction of un-accounted for water uses.

2. Reduction of peak day to average day water usage ratio. The peak day to average day ratio is a reflection of the relative amount of outdoor water use during the summer season. The peak to average ratio in Kerrville is almost 2 to 1. The City intends to reduce this ratio through the promotion of water conserving irrigation techniques and by continuing to restrict the hours permitted for lawn watering.

3. Increase the use of treated wastewater, thereby reducing the demand for potable water. The City of Kerrville has already made available treated wastewater to the City of Kerrville Scott Schreiner Municipal Golf Course, Comanche Trace Golf Course, wash down water at the City of Kerrville Wastewater Treatment Plant and Kerr County Animal Control Facility, irrigation at the Hill Country Youth Soccer fields and reuse water supply for construction projects in the area.

Evaluation of the effectiveness of these water conservation programs will be monitored in terms of overall water usage and water losses. The five-year water use and water loss goals of per capita usage of 155 gpcd, water loss target of 24 gpcd and water loss percentage target of 15% will be reviewed at each annual water conservation evaluation.

E. Master Meter

Water diverted under our surface water permits is measured at the point of diversion and reported to the office of the Texas Commission on Environmental Quality (TCEQ) South Texas Watermaster. This master meter is calibrated on an annual basis and certificates of calibration are kept on file. In addition, all of the water supply well sites are metered.

F. Metering Program

All customer meters, both commercial and residential, are of an AWWA approved type capable of an accuracy of +-5%. Water diverted under our surface water permits is measured at the point of diversion and reported to the office of the South Texas Watermaster. This master meter is calibrated on an annual basis and certificates of calibration are kept on file.

The City of Kerrville recently replaced over 9,000 water meters from manual read to radio frequency city wide. The new meters have the capability to provide customers with consumption usage regarding leaks, back flow problems and spikes in water consumption. The meter replacement program was implemented by the City at a cost of approximately $2,200,000 to help monitor and reduce water usage throughout the system.

G. Measures to Determine Water Loss

Visual inspections of the distribution system are carried out routinely on a continuous basis by City staff. Known leaks are repaired immediately and suspected leaks are investigated in a timely fashion. The meter technicians are trained to identify any illegal connection or abandoned services.

H. Leak Detection Program

The City routinely inspects the distribution system for leaks and emphasizes quick responses to leaks or other water loss events in the system. Quicker responses to leaks results in a reduction in overall water usage and demand.

I. Continuing Education

Pamphlets prepared by the Texas Water Development Board are available upon request from the Water Office and the Department offers assistance in locating customer leaks. Periodic programs are given to schools, civic clubs, and focus groups to re-affirm the importance of water conservation.

J. Water Rate Structure

The water consumption charge is different for residential, non-residential and irrigation customers. In addition, the rate varies depending on the volume of water used. The range of rates vary from $3.06 per 1,000 gallons to $7.12 per 1,000 gallons. The water and sewer rates for the City of Kerrville are defined in Section 110-48 of Article II-Water works and Sanitary Sewer System listed in Part II-Code of Ordinances for the City. This portion of the Code of Ordinances is listed in Appendix C.

K. Means of Implementation and Enforcement

The Water Management Plan adopted by City Council and described in Part II of the Code of Ordinances for the City addresses year-round conservation measures, year-round prohibited uses of water, defines water conservation stages, and describes conservation measures for each of the stages. In addition, this plan addresses enforcement of the Water Management Plan and penalties for violation of the plan. Penalties for violation of the plan will be in accordance with the general penalty provisions defined in Chapter 1 of the Code of Ordinances but in no case be less than $50. The Water Management Plan is included in this document in Appendix D.

3.0 SUMMARY

This 2014 Water Conservation Plan Update has been prepared for the City of Kerrville public water system as required by the Texas Water Development Board (TWDB) regulations. The purpose of this plan is to develop a strategy or combination of strategies for reducing the consumption of water, reducing the loss or waste of water, improving or maintaining the efficiency in the use of water, and increasing recycling and reuse of water. The City of Kerrville's conjunctive use water system is comprised of a surface water treatment plant on the Guadalupe River, two aquifer storage and recovery (ASR) wells, and a native groundwater well system.

Based on the City of Kerrville population data and the Regional Water Planning Group J population projections, the service area is expected to increase from the current population of 22,347 to approximately 26,000 in 10 years and to approximately 29,545 in 2060.

The current number of active connections in the City is 12,494. Total water produced in 2013 was 1,362,212,000 gallons and total water usage in 2013 was 1,093,867,000 gallons. The per capital water usage based on total water produced is 167 gallons per capita per day (gcpd) and total per capita water usage based on retail water sold is 134 gpcd. Physical water loss in the water distribution system for 2013 was estimated at 221,826 gallons which is approximately

16.5% of the water input into the system. An additional 14,560,017 gallons was consumed but not properly measured and defined as apparent water loss in the system. The total water loss in the system was 235,846,017 gallons equivalent to 28.9 gpcd loss or a total water loss of 17.3%.

Five-year and ten-year targets have been established for water savings in the City of Kerrville water system. These targets include goals for water loss programs and goals for municipal and residential water usage in terms of gallons per capita per day. The five-year water use goals and savings include a total City per capita usage target of 155 gpcd, water loss target of 24 gpcd and water loss percentage target of 15% for 2019. The ten-year water use goals and savings include a total City per capita usage target of 150 gpcd, water loss target of 20 gpcd and water loss percentage target of 13% for 2024.

Recommended future water conservation enhancement programs in addition to the existing programs include:

1) System Water Audit and Water Loss Prevention Program
2) Non-Potable/Reuse Water Projects
3) Expand Water Conservation Measures in Local Hotels and Restaurants
4) Expand Golf Course and Park Irrigation Conservation Program
5) Expand Landscape Design & Conversion (Xeriscaping) Program

Many of the future water conservation programs are a continuation and expansion of the existing programs. The City also intends to increase the use of treated wastewater in the service area and is currently involved in conceptual planning for additional non-potable water reuse projects including providing additional pond storage of wastewater effluent. The additional volume of wastewater effluent could be used for additional irrigation at parks, golf courses and athletic fields within the service area.

Evaluation of the effectiveness of these water conservation programs will be monitored in terms of overall water usage and water losses. The five-year water use and water loss goals of per capita usage of 155 gpcd, water loss target of 24 gpcd and water loss percentage target of 15% will be reviewed at each annual water conservation evaluation.

APPENDIX A

UTILITY PROFILE

TWDB FORM 10218

Texas Commission on Environmental Quality

UTILITY PROFILE AND WATER CONSERVATION PLAN REQUIREMENTS FOR MUNICIPAL WATER USE BY RETAIL PUBLIC WATER SUPPLIERS

This form is provided to assist retail public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Name:	CITY OF KERRVILLE
Address:	701 MAIN STREET
Telephone Number:	(830) 258-1235 Fax: ( )
Water Right No.(s):	3505-400, 5394-400, 1996-400, 1996-401, 18-2026
Regional Water Planning Group:	J
Form Completed by:	GRANT TERRY
Title:	SUPT. WATER PRODUCTION DIVISION
Person responsible for implementing conservation program:	STUART BARRON Phone: (830) -2581230
Signature:	Stuart Barron Date: 6/26/14

NOTE: If the plan does not provide information for each requirement, include an explanation of why the requirement is not applicable.

UTILITY PROFILE

I. POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data*

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).

2. Service area size (in square miles): 21

   (Please attach a copy of service-area map)

3. Current population of service area: 22,347

4. Current population served for:

   a. Water 22,347

   b. Wastewater 22,347

5. Population served for previous five years:

Year	*Population*
2009	22,826
2010	23,130
2011	23,434
2012	23,973
2013	22,347

6. Projected population for service area in the following decades:

Year	*Population*
2020	25,681
2030	26,394
2040	27,544
2050	28,926
2060	29,545

7. List source or method for the calculation of current and projected population size.

   City of Kerrville Land Planning Assumptions, Water Master Plan and Region J 2011 Regional Water Plan

B. *Customers Data*

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. http://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/sb181_guidance.pdf

1. Current number of active connections. Check whether multi-family service is counted as ☒ Residential or ☐ Commercial?

Treated Water Users	*Metered*	*Non-Metered*	**Totals**
Residential	10,465	0	10,465
Single-Family	7,601	0	7,601
Multi-Family	2,864	0	2,864
Commercial	1,494	0	1,494
Industrial/Mining	0	0	0
Institutional	0	0	0
Agriculture	535	0	535
Other/Wholesale	12,494	0	12,494

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

Year	2011	2012	2013
Treated Water Users			
Residential	591	2497	-289
Single-Family	563	-296	-106
Multi-Family	28	2793	-183
Commercial	211	-236	369
Industrial/Mining			
Institutional			
Agriculture			535
Other/Wholesale			615

3. List of annual water use for the five highest volume customers.

	Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*
1.	Schreiner University	38,708.9	Treated
2.	Peterson Regional Medical	11,932.3	Treated
3.	Kerrville State Hospital	11,627.5	Treated
4.	Kerrville ISD	9,822.9	Treated
5.	Vicksburg Village HOA	6,429.2	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons). Indicate whether this is ☐ diverted or ☒ treated water.

Year	2009	2010	2011	2012	2013
Month					
January	79,463	68,029	72,011	66,102	68,844
February	89,572	63,558	77,867	59,380	72,123
March	98,559	69,622	97,030	73,299	85,731
April	117,375	76,565	108,027	96,752	92,159
May	102,249	80,928	114,234	100,871	89,905
June	135,059	96,299	121,829	114,647	92,482
July	157,771	103,729	125,469	121,736	121,742
August	128,885	142,250	117,286	130,233	138,473
September	87,469	94,365	93,252	115,674	99,044
October	73,104	96,620	65,186	88,262	83,818
November	82,351	83,975	66,672	89,280	83,876
December	67,331	74,400	62,112	74,886	65,672
Totals	1,219,188	1,050,338	1,120,976	1,131,123	1,093,867

Describe how the above figures were determine (e.g, from a master meter located at the point of a diversion from the source, or located at a point where raw water enters the treatment plant, or from water sales).

MASTER METERS AT POINT OF DIVERSION PLUS SUM OF ALL WELL HEAD METERS

2. Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

Year	2009	2010	2011	2012	2013
Account Types					
Residential	694,209	670,215	747,676	717,822	666,658
Single-Family					
Multi-Family					
Commercial	281,775	280,635	292,620	302,733	322,899
Industrial/Mining					
Institutional					
Agriculture	93,272	99,488	80,680	110,568	104,320
Other/Wholesale					

3. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

Year	*Amount (gallons)*	*Percent %*
2013	221.286	16.5
2012	298.081	19.1
2011	274.395	17.7
2010	265.192	20.2
2009	140.878	11.0

B. Projected Water Demands

If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	*Source*	*Amount Authorized*
Surface Water	GUADALUPE RIVER	5,922
Groundwater	LOWER TRINITY AQUIFER	4,296
Contracts	N/A	
Other	ASR SYSTEM	AMOUNT STORED

B. Treatment and Distribution System

1. Design daily capacity of system (MGD):8.694

2. Storage capacity (MGD):
   a. Elevated 6.8
   b. Ground 1.43

3. If surface water, do you recycle filter backwash to the head of the plant?
   ☒ Yes ☐ No If yes, approximate amount (MGD): 0.030

IV. WASTEWATER SYSTEM DATA

A. *Wastewater System Data (if applicable)*

1. Design capacity of wastewater treatment plant(s) (MGD): 6.5

2. Treated effluent is used for ☐ on-site irrigation, ☒ off-site irrigation, for ☒ plant wash-down, and/or for ☒ chlorination/dechlorination.

   If yes, approximate amount (in gallons per month): 1,000,000

3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

   The City of Kerrville wastewater system consists of approximately 130 miles of collection lines, 22 sanitary lift stations, and the wastewater treatment plant, which has a current hydraulic capacity of 4.5 MGD. The TNRCC permit limits discharge to 4.5 MGD. The wastewater treatment facility is located at 3650 Loop 534 sited on 13 acres. Wastewater is treated to tertiary level and then discharged into Third Creek, which then flows to the Guadalupe River.

B. *Wastewater Data for Service Area (if applicable)*

1. Percent of water service area served by wastewater system: 100 %

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2009	2010	2011	2012	2013
Month					
January	64,367	71,803	65,523	63,510	66,918
February	57,627	79,315	61,278	61,980	64,746
March	68,579	90,751	62,144	65,023	65,367
April	65,390	80,289	62,182	65,473	67,236
May	69,068	74,297	59,132	62,912	61,075
June	65,314	68,933	63,673	73,014	68,151
July	67,567	72,424	59,804	65,850	67,284
August	63,767	64,672	60,907	69,817	70,137
September	66,059	66,061	59,596	61,273	66,548
October	69,946	65,523	61,975	64,980	68,662
November	67,725	61,278	60,153	65,672	66,935
December	68,600	62,144	59,312	66,579	69,325
Totals	794,040	857,491	735,681	786,085	802,384

V. ADDITIONAL REQUIRED INFORMATION

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. *Specific, Quantified 5 & 10-Year Targets*

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable

B. *Metering Devices*

The water conservation plan must include a statement about the water suppliers metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply.

C. *Universal Metering*

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

D. *Unaccounted- For Water Use*

The water conservation plan must include measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.).

E. *Continuing Public Education & Information*

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

F. *Non-Promotional Water Rate Structure*

The water supplier must have a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. This rate structure must be listed in the water conservation plan.

G. *Reservoir Systems Operations Plan*

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

H. *Enforcement Procedure and Plan Adoption*

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

I. *Coordination with the Regional Water Planning Group(s)*

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

J. *Plan Review and Update*

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within ten years

A. *Leak Detection and Repair*

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. *Contract Requirements*

A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

VII. ADDITIONAL CONSERVATION STRATEGIES

A. *Conservation Strategies*

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of this chapter, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

4. A program for reuse and/or recycling of wastewater and/or graywater;

5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;

6. A program and/or ordinance(s) for landscape water management;

7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and

8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

Best Management Practices

The Texas Water Developmental Board's (TWDB) Report 362 is the Water Conservation Best Management Practices (BMP) guide. The BMP Guide is a voluntary list of management practices that water users may implement in addition to the required components of Title 30, Texas Administrative Code, Chapter 288. The Best Management Practices Guide broken out by sector, including Agriculture, Commercial, and Institutional, Industrial, Municipal and Wholesale along with any new or revised BMP's can be found at the following link on the Texas Water Developments Board's website: http://www.twdb.state.tx.us/conservation/bmps/index.asp

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact 512-239-3282.

APPENDIX B

IMPLEMENTATION REPORT

TWDB FORM 20646

Texas Commission on Environmental Quality

Water Conservation Implementation Report
Public Water Supplier

This five year report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288. Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Availability Division at (512) 239-4691.

CONTACT INFORMATION

Name of Entity: CITY OF KERRVILLE

Public Water Supply Identification Number (PWS ID):1330001
CCN numbers: 12928
Water Right Permit numbers: 3505-400, 5394-400, 1996-400, 1996-401, 18-2026
Wastewater ID numbers: WQ0010576001

Check all that apply:
- ☑ Retail Public Water Supplier
- ☐ Wholesale Public Water Supplier

Address: 701 MAIN STREET City: KERRVILLE Zip Code: 78028

Email: grant.terry@kerrvilletx.gov Telephone Number: 830-258-1235

Regional Water Planning Group: J Map

Groundwater Conservation District: Headwaters GWCD No. 34Map

Form Completed By: GRANT TERRY Title: SUPT. WATER PRODUCTION DIVISION

Signature: Grant Terry Date: Click here to enter a date. 6/30/2014

Contact information for the person or department responsible for implementing the water conservation plan:

Name: STUART BARRON Phone: 830-258-1230 Email: stuart.barron@kerrvilletx.gov

Report Completed on Date: 6/30/2014

Reporting Period (**check only one**):
- ☐ Fiscal Period Begin:Click here to enter a date. Period End: Click here to enter a date.
- ☑ Calendar Period Begin:January 2013 Period End: December 2013

Please check all of the following that apply to your entity:

☑ A surface water right holder of 1,000 acre-feet/year or more for non-irrigation uses
☐ A surface water right holder of 10,000 acre-feet/year or more for irrigation uses

Important

If your entity meets the following description, please skip page 3 and go directly to page 4.

Your entity is a Wholesale Public Water Supplier that ONLY provides wholesale water services for public consumption. For example, you only provide wholesale water to other municipalities or water districts.

Water Use Accounting

Retail Water Sold: *All retail water sold for public use and human consumption.*

Helpful Hints: There are two options available for you to provide the requested information. Both options ask the same information; however, the level of detail and break down of information differs between the two options. Please select just one option that works best for your entity and fill in the fields as completely as possible.

Fields that are gray are entered by the user. Select fields that are white and press F9 to updated fields.

For the five-year reporting period, enter the gallons of **RETAIL water sold** in each major water use category. Use **only one** of the following options.

Option 1

Water Use Category*	Gallons Sold
Single Family Residential	
Multi-Family Residential	
TOTAL Residential Use[1]	0
Industrial	
Commercial	
Institutional	
TOTAL Retail Water Sold[2]	0

1. [SF Res +MF Res = Residential Use]
2. [Res +Ind +Com +Ins = Retail Water Sold]

Option 2

Water Use Category *	Gallons Sold
Residential Select all of the sectors that your account for as "Residential". ☑Single Family ☑ Multi-Family	1,093,867,000
Commercial Please select all of the sectors that your account for as "Commercial". ☑ Commercial ☐ Multi-Family ☐ Industrial ☐ Institutional	0
Industrial Please select all of the sectors that your account for as "Industrial". ☐Industrial ☐ Commercial ☐ Institutional	0
Other Please select all of the sectors that your account for as "Other". ☐Commercial ☐Multi-Family ☐ Industrial ☐ Institutional	0
TOTAL Retail Water Sold[1]	1,093,867,000.00

1. [Res +Com +Ind + Other = Retail Water Sold]

Wholesale Water Exported: *Wholesale water sold or transferred out of the distribution system.*

For the five-year reporting period, enter the gallons of **WHOLESALE water exported** to each major water use category.

Water Use Category*	**Gallons of Exported Wholesale Water**
Municipal Customers	0
Agricultural Customers	0
Industrial Customers	0
Commercial Customers	0
Institutional Customers	0
TOTAL Wholesale Water Exported [1]	**0.00**

1. [Mun +Agr +Ind +Com +Ins = Wholesale Water Exported]

System Data

Fields that are gray are entered by the user. Select fields that are white and hit F9 to updated fields.

	Total Gallons During the Five-Year Reporting Period
Water Produced: Volume produced from own sources	1,362,212,000
Wholesale Water Imported : Purchased wholesale water imported from other sources into the distribution system	0
Wholesale Water Exported: Wholesale water sold or transferred out of the distribution system (Insert Total Volume calculated on Page 4)	0
TOTAL System Input : Total water supplied to the infrastructure	1,362,212,000.00 [Produced + Imported – Exported = System Input]
Retail Water Sold : All retail water sold for public use and human consumption (Insert Total Residential Use from Option 1 or Option 2 calculated on Page 3)	1,093,867,000
Other Consumption Authorized for Use but not Sold: - back flushing water - line flushing - storage tank cleaning - golf courses - fire department use - parks - municipal government offices	47,058,300
TOTAL Authorized Water Use: All water that has been authorized for use or consumption.	0.00 [Retail Water Sold + Other Consumption = Total Authorized]
Apparent Losses – Water that has been consumed but not properly measured (Includes customer meter accuracy, systematic data discrepancy, un- authorized consumption such as theft)	14,560,017
Real Losses – Physical losses from the distribution system prior to reaching the customer destination (Includes physical losses from system or mains, reported breaks and leaks, storage overflow)	221,286,000
Unidentified Water Losses	0.00 [System Input- Total Authorized - Apparent Losses - Real Losses = Unidentified Water Losses]
TOTAL Water Loss	235,846,017.00 [Apparent + Real + Unidentified = Total Water Loss]

Targets and Goals

In the table below, please provide the **specific and quantified five and ten-year targets for water savings** listed in your water conservation plan.

Fields that are gray are entered by the user. Select fields that are white and hit F9 to update fields.

Date	Target for: Total GPCD	Target for: Water Loss (expressed in GPCD)	Target for: Water Loss Percentage (expressed in Percentage)
Five-year target date: 6/30/2019	155	24	15%
Ten-year target date: 6/30/2024	150	20	13%

Are targets in the water conservation plan being met? Yes ☑ No ☐

If these targets are not being met, provide an explanation as to why, including any progress on these targets: Click here to enter text.

Gallons per Capita per Day (GPCD) and Water Loss

Compare your current gpcd and water loss to the above targets and goals set in your previous water conservation plan.

Total System Input in Gallons	Permanent Population	Current GPCD
1,362,212,000 [Produced + Imported – Exported = System Input]	22,347	167 [(System Input ÷ Permanent Population) /5/ 365]

Permanent Population is the total permanent population of the service area. This includes single family, multi-family, and group quarter populations.

Total Residential Use	Permanent Population	Residential GPCD
1,093,867,000	22,347	134 [(Residential Use ÷ Residential Population) / 5/ 365]

Residential Population is the total residential population of the service area including single & multi-family population.

Total Water Loss	Total System Input in Gallons	Permanent Population	Water Loss calculated in	
			GPCD [1]	Percent [2]
235,846,017 [Apparent + Real + Unidentified = Total Water Loss]	1,362,212,000 [Water Produced + Wholesale Imported - Wholesale Exported]	22,347	28.9	17.3

1. [Total Water Loss ÷ Permanent Population] / 5/ 365 = Water Loss GPCD]
2. [Total Water Loss ÷ Total System Input] x 100 = Water Loss Percentage]

Water Conservation Programs and Activities

As you complete this section, please review your water conservation plan to see if you are making progress towards meeting your stated goals.

Fields that are gray are entered by the user. Select fields that are white and hit F9 to updated fields.

1. Water Conservation Plan

What year did your entity adopt, or revise, their most recent water conservation plan: 2009

Does the plan incorporate Best Management Practices? Yes ☐ No ☑

2. Water Conservation Programs

For the reporting period, please select the types of activities and programs that have been actively administered, and estimate the expense and savings that incurred in implementing the conservation activities and programs for the past five years. Leave the field blank if unknown:

Program or Activity	Estimated Expenses	Estimated Gallons Saved
Conservation Analysis & Planning		
☐ Conservation Coordinator		
☐ Water Survey for Single-Family and Multi-Family Customers		
Financial		
☐ Wholesale Agency Assistance Programs		
☑ Water Conservation Pricing/ Rate Structures	Staff Time <$500	1,000,000
System Operations		
☐ Water Loss Audits		
☐ Leak Detection		
☑ Universal Metering and Metering Repair	>$2,000,000	200,000
Landscaping		
☐ Landscape Irrigation Conservation and Incentives		

☐ Athletic Fields Conservation		
☑ Golf Course Conservation	Staff Time <$500	1,500,000
☑ Park Conservation	Staff Time <$500	3,000,000
Education & Public Awareness		
☐ School Education		
☑ Public Information	$2,000	150,000
Rebate, Retrofit, and Incentive Programs		
☐ Conservation Programs for ICI Accounts		
☐ Residential Clothes Washer Incentive Program		
☐ Water Wise Landscape Design and Conversion Programs		
☐ Showerhead, Aerator, and Toilet Flapper Retrofit		
☐ Residential Toilet Replacement Programs		
☐ Rainwater Harvesting Incentive Program		
☐ ICI Incentive Programs		
Conservation Technology		
☑ Recycling and Reuse Programs (Water or Wastewater Effluent)	Staff Time <$500	100,000
☐ Rainwater Harvesting and Condensate Reuse Programs		
Regulatory and Enforcement		
☑ Prohibition on Wasting Water	Staff Time <$500	50,000
TOTAL	> $2,000,000	6,000,000

3. Reuse (Water or Wastewater Effluent)

For the reporting period, please provide the following data regarding the types of direct and indirect reuse activities that were administered for the past five years:

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	
Plant wash down	
Chlorination/de-chlorination	50,000
Industrial	
Landscape irrigation (parks, golf courses)	250,000
Agricultural	
Other, please describe:	
Estimated Volume of Recycled or Reuse	300,000

4. Water Savings

For the five-year reporting period, estimate the total savings that resulted from your overall water conservation activities and programs?

Estimated Gallons Saved (Total from Conservation Programs Table)	**Estimated Gallons Recycled or Reused** (Total from Reuse Table)	**Total Volume of Water Saved** [1]	**Dollar Value of Water Saved** [2]
6,000,000	300,000	6,300,000	$20,000

1. [Estimated Gallons Saved + Estimated Gallons Recycled or Reused = Total Volume Saved]
2. Estimate this value by taking into account water savings, the cost of treatment or purchase of your water, and any deferred capital costs due to conservation.

5. Conservation Pricing / Conservation Rate Structures

During the five-year reporting period, have your rates or rate structure changed? Yes ☐ No ☐

Please indicate the type of rate pricing structures that you use:

☐ Uniform rates	☐ Water Budget Based rates	☐ Surcharge - seasonal
☐ Flat rates	☐ Excess Use Rates	☐ Surcharge - drought
☑ Inclining/ Inverted Block	☐ Drought Demand rates	☐ Surcharge - usage demand
☐ Declining Block rates	☐ Tailored rates	
☐ Seasonal rates		

6. Public Awareness and Education Program

For the five-year reporting period, please check the appropriate boxes regarding any public awareness and educational activities that your entity has provided:

	Implemented	**Number/Unit**
Example: Brochures Distributed	☐	*10,000/year*
Example: Educational School Programs	☐	*50 students/month*
Brochures Distributed	☐	
Messages Provided on Utility Bills	☑	40,000
Press Releases	☑	12
TV Public Service Announcements	☑	20
Radio Public Service Announcements	☑	50
Educational School Programs	☑	5
Displays, Exhibits, and Presentations	☐	
Community Events	☑	6

Social Media campaigns	☐	
Facility Tours	☑	5
Other : Public Notices posted at over 100 locations	☑	200

7. Leak Detection

During the five-year reporting period, how many leaks were repaired in the system or at service connections: Click here to enter text.

Please check the appropriate boxes regarding the main cause of water loss in your system during the reporting period:

☑ Leaks and breaks
☐ Un-metered utility or city uses
☐ Master meter problems
☐ Customer meter problems
☐ Record and data problems
☑ Other: Non-visible leaks-limestone/rocky soil
☐ Other: Click here to enter text.

8. Universal Metering and Meter Repair

For the five-year reporting period, please provide the following information regarding meter repair:

	Total Number	Total Tested	Total Repaired	Total
Production Meters	5	5	5	5
Meters larger than 1 ½"	627	627	627	627
Meters 1 ½ or smaller	9462	9462	9462	9462

Does your system have automated meter reading? Yes ☑ No ☐

9. Conservation Communication Effectiveness

In your opinion, how would you rank the effectiveness of your conservation activities in reaching the following types of customers for the past five years?

10. Drought Contingency and Emergency Water Demand Management

	Do not have activities or programs that target this type customer.	Less Than Effective	Somewhat Effective	Highly Effective
Residential Customers	☑	☐	☑	☐
Industrial Customers	☐	☐	☑	☐
Institutional Customers	☐	☐	☐	☐
Commercial Customers	☑	☑	☐	☐
Agricultural Customers	☐	☐	☑	☐

During the five-year reporting period, did you implement your Drought Contingency Plan?

Yes ☑ No ☐

If yes, indicate the number of days that your water use restrictions were in effect: Click here to enter text.

If yes, please check all the appropriate reasons for your drought contingency efforts going into effect.

☑ Water Supply Shortage	☐ Equipment Failure
☐ High Seasonal Demand	☐ Impaired Infrastructure
☐ Capacity Issues	☑ Other: TCEQ Water Rights Restriction

If you have any questions on how to fill out this form or about the Water Conservation program, please contact us at 512/239-4691.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

APPENDIX C

CITY OF KERRVILLE

WATER RATES

ARTICLE II. WATERWORKS AND SANITARY SEWER SYSTEM [2]

Sec. 110-48. Water and sewer rates.

(a) *Water service.* Every consumer and user of the municipal water system shall pay to the city a charge for the use of the water provided which is calculated as follows:

(1) Monthly account maintenance fee; plus

(2) The water consumption charge.

(b) *Definitions.* The words and phrases defined in section 110-32(b) shall have the same meanings in this section.

(c) *Monthly account maintenance fee defined.* A monthly account maintenance fee of $10.00 shall be paid with respect to each water meter through which water service is provided, regardless of the classification of the water user.

(d) *Water consumption charge.* The water consumption charge shall be calculated as follows:

(1) *Residential rate.* The residential rate for water service provided to one or more dwelling units, known as the water consumption charge, shall be determined as follows:

a. If the meter through which water is provided is serving only one dwelling unit, the water consumption charge shall be an amount equal to:

1. For water consumed during the billing period up to the 6000th gallon, an amount equal to $2.32 for each 1,000 gallons of water or fraction thereof; plus

2. For the 6001st to the 15,000th gallon consumed during the billing period, $2.65 for each 1,000 gallons of water or fraction thereof; plus

3. For the 15,001st gallon to the 25,000th gallon consumed during the billing period, $3.36 for each 1,000 gallons of water or fraction thereof; plus

4. For the 25,001st gallon to the 50,000th gallon consumed during the billing period, $4.19 for each 1,000 gallons of water or fraction thereof; plus

5. For water consumed during the billing period in excess of the 50,000th gallon, $5.13 for each 1,000 gallons of water or fraction thereof.

b. If the water meter through which the water is provided is serving a multifamily residential unit, the water consumption charge shall be determined by multiplying the number of dwelling units served by the master meter by the average dwelling unit consumption charge. The average dwelling unit consumption charge shall be determined as follows:

1. Divide the total consumption indicated on the master meter for the billing period by the number of dwelling units served by the master meter; then

2. Using the number determined by subsection (d)(1)b.1 of this section, determine the amount that would constitute the water consumption charge for each dwelling unit as if the dwelling unit were served by an individual meter pursuant to subsection (d)(1) of this section.

(2) *Nonresidential rate.* The nonresidential rate for water service provided to one or more business units through individual or master meters, known as the water consumption charge shall be calculated as follows:

a. For water consumed during the billing period up to the 25,000th gallon, an amount equal to $2.65 for each 1,000 gallons of water or fraction thereof; plus

b. For the 25,001st gallon to the 50,000th gallon consumed during the billing period, $2.87 for each 1,000 gallons of water or fraction thereof; plus

c. For water consumed during the billing period in excess of the 50,000th gallon, $3.09 for each 1,000 gallons of water or fraction thereof.

(3) *Irrigation rate.* For water service provided through an irrigation meter, the water consumption charge shall be determined as follows:

a. For water consumed during the billing period up to the 15,000th gallon consumed during the billing period, $3.36 for each 1,000 gallons of water or fraction thereof; plus

b. For the 15,001st gallon to the 25,000th gallon consumed during the billing period, $4.19 for each 1,000 gallons of water or fraction thereof; plus

c. For water consumed during the billing period in excess of the 25,000th gallon, $5.13 for each 1,000 gallons of water or fraction thereof.

For an irrigation meter which serves a residential development, the water consumption charge shall be determined by multiplying the number of residential units whose landscaping, including yards and gardens, is served by the irrigation meter, by the average residential unit consumption charge. The average residential unit consumption charge shall be determined by: (i) Dividing the total volume indicated on the irrigation meter for the billing period by the number of residential units served by the irrigation meter; then (ii) Using this derived number, determine the amount that would constitute the water consumption charge for each residential unit as if the residential unit were served by an individual meter.

(4) *Customers outside the city.* The monthly account maintenance fee and the water consumption charge for customers of water service located outside the incorporated limits of the city shall be calculated on the same basis as set forth in subsections (d)(1), (2) and (3) of this section, with a multiplier of 1.5.

(5) *Business use of dwelling unit.* If a dwelling unit is also used for nonresidential purposes, the charge for water service shall be determined as follows:

a. If the nonresidential use constitutes a home occupation the charge shall be calculated using the water consumption charge for residential customers;

b. If the nonresidential use does not constitute a home occupation the charge shall be calculated using the water consumption charge for nonresidential customers.

(e) *Sewer service.* Every consumer and user of the municipal sanitary sewer system shall pay to the city a charge for the use of the system which is calculated as follows:

(1) Monthly sewer account maintenance fee; plus

(2) Sewer use charge.

(f) *Monthly sewer account maintenance fee defined.* A monthly sewer account maintenance fee of $7.00 shall be paid with respect to each water meter through which water service is provided, regardless of the classification of the water user and regardless of whether or not the water user is receiving water service from the city.

(g) *Sewer use charge.* The sewer use charge shall be as follows:

(1) *Residential rate.* The sewer use charge for each residential user of the city's sanitary sewer system shall be calculated as follows:

a. Determine the total number of gallons of water consumed during the months of December, January, and February, as indicated on the customer's water bills for the months of January, February, and March, respectively; then

b. Divide by 3,000; then

c. Multiply by:

1. $2.76, for customers located inside the city's incorporated limits; or

2. $4.13 for customers located outside the city's incorporated limits.

(2) *Annual recalculation of residential sewer use charge.* The sewer use charge for residential sewer customers will be recalculated annually. The recalculation shall be effective on the customer's first bill received on or after April 1 of each year.

(3) *Sewer charges for current customer.* In calculating the monthly sewer charges for a current city residential sewer customer who moves to another property where city sewer services are to be provided, the sewer use charge for the residence shall be the same as established at the previous property until the next annual recalculation in accordance with subsection (g)(2) of this section.

(4) *Sewer charges for customer with no previous history.* In calculating the monthly sewer charges for a city residential sewer customer who has no previous history as a city water and sewer customer, the sewer use charge shall be based on a water usage of 4,000 gallons per month until the next annual recalculation in accordance with subsection (g)(2) of this section.

(5) *Nonresidential rate.* The sewer use charge for each non-residential user of the city's sanitary sewer system shall be calculated as follows:

a. Determine the total number of gallons of water metered during the billing period; then

b. Divide by 1,000; then

c. Multiply by:

1. $3.03, for customers located inside the city's incorporated limits; or

2. $4.55, for customers located outside the city's incorporated limits.

(h) *No sewer charges for irrigation meter.* Sewer charges shall not be billed for water consumed through an irrigation meter.

(i) *Contract rates.* The city council may from time to time enter into contracts with governmental entities, municipal utility districts or other special districts which provide water and/or wastewater services to retail customers, or other owners of water and/or wastewater systems wherein the rates are established by such contract. Any rates established by contract with the city shall control over the rates established in this section.

(j) *Additional rate changes.* The rates and charges established by this section may be adjusted from time to time by ordinance as may be necessary to produce sufficient revenues to:

(1) Pay for all operating, maintenance, depreciation, replacement, and betterment costs of such water and wastewater systems;

(2) Establish and maintain special revenue bond funds and reserve funds as required by bond covenants that currently exist or shall in the future exist, sufficient to pay the interest and maturities of such revenue bonds as may be outstanding as they become due, and to support the bonded debt that may accrue against future revenue bond issues made necessary for capital improvements required to maintain adequate water and wastewater systems for all residents living within the limits of the city and its extraterritorial jurisdiction; and

(3) Pay all outstanding indebtedness against the city water and wastewater systems when debt becomes due for payment.

APPENDIX D

CITY OF KERRVILLE

WATER MANAGEMENT PLAN

ADOPTED ORDINANCE

ARTICLE III. WATER MANAGEMENT PLAN [3]

Sec. 110-91. Application.

The provisions of this article shall apply to all persons, customers, and property located within the city and/or using water provided by the city. The terms "person" and "customer" as used in this article shall include individuals, corporations, partnerships, associations, and all other legal entities.

(Ord. No. 2004-04, § 1(art. 3-IV-1), 1-27-2004)

Sec. 110-92. Definitions.

As used in this chapter, the following phrases shall have the following meanings:

Athletic field means a sports playing field, the essential feature of which is the presence of turf grass, used primarily for organized sporting events for schools, professional sports, or sanctioned league play.

Automatic irrigation system means any system of one or more devices controlled by any means other than a manually operated, momentary action, valve or switch, which emits water into the air more than one inch from the discharge port of the device(s). For the purposes of this article momentary action shall mean a device that permits the flow of water only so long as a person manually holds the valve or switch in the open or on position.

Bulk potable water means water from the city public water supply system delivered to a customer in bulk quantities of 55 gallons or more at the city service center.

City means the City of Kerrville, Kerr County, Texas.

City manager means the chief executive officer and the head of the administrative branch of the city government or his designee.

Commercial water use means water use which is integral to the operations of commercial and non-profit establishments and governmental entities, including, but not limited to, retail establishments, hotels and motels, restaurants, and office buildings.

Conservation means those practices, techniques, and technologies that:

(1) Reduce the consumption of water;

(2) Reduce the loss or waste of water;

(3) Improve the efficiency in the use of water; or

(4) Increase the recycling and reuse of water so that a supply of water is conserved and made available for future or alternative uses.

Customer means any person, company, or organization using water within the city or using water supplied by the city.

Domestic water use means water use for personal needs or for household or sanitary purposes, including, but not limited to, drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Drip irrigation system means a permanently installed automatic watering system which applies water directly to or under the surface of the soil or, porous (soaker) hoses fitted with both a pressure reducing device set at ten psi maximum and an accurate pressure monitoring gauge. In no case shall any such system emit water more than one inch into the air from any discharge port or orifice.

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

Landscape watering means the application of water to any member of the plant kingdom, including any tree, shrub, vine, herb, flower, succulent, groundcover or grass species, that is growing or has been planted out of doors.

Licensed irrigation contractor means a person holding a license issued by the Texas Commission on Environmental Quality.

Manager means the person who is performing the duties of manager of the city's water and wastewater system or his designee.

MGD means million gallons per day.

Psi means pounds per square inch.

Power washer means a machine that uses water or a water-based product applied at high pressure greater than 499 pounds per square inch while simultaneously reducing the water flow rate to four gallons per minute or less, for the purpose of cleaning impervious surfaces.

Public water supply system (PWS) means any system designed for the purpose of treating, carrying and/or delivering potable water and is regulated by the Texas Commission on Environmental Quality.

Reclaimed water means domestic or municipal wastewater which has been treated to a quality suitable for a beneficial use in accordance with state law.

Safe operating capacity means the maximum amount of potable water which, expressed in millions of gallons per day (mgd), the city is safely capable of delivering to the city's water distribution system at any given time from:

(1) The total available from the city's water treatment plant(s);

(2) The total available from the city's aquifer storage and recovery well(s);

(3) The total available from the city's groundwater wells; and/or

(4) Total available from other potable water sources that may be added in the future or, due to regulatory changes that increase or decrease water availability, from existing facilities/sources.

Seven-day average demand means the daily average of the amount of water pumped to the city's water distribution system from all available sources for the period beginning at 12:00 a.m. on the seventh calendar day prior to the date the calculation is made and ending at 12:00 a.m. on the date the calculation is made.

South Texas Watermaster means the position designated by the executive director of the TCEQ to manage a water division established under Section 11.325 of the Texas Water Code. Such position has the authority to reduce or suspend water diversion rights under certain conditions.

TCEQ means Texas Commission on Environmental Quality or its successor agency.

Temporary fire hydrant meter means a meter applied for from and issued by the city and intended for a temporary connection to the city's potable water supply via a city-owned fire hydrant.

Vehicle wash facility means a business that washes vehicles with water or a water-based product, including self-service car washes, full-service car washes, roll-over/in-bay style car washes, and fleet maintenance wash facilities.

Waste means causing, suffering, or permitting a flow of water, if derived from any private well, private water company, or from a city water main, to run into any river, creek or other natural watercourse or drain, superficial or underground channel, bayou, or into any sanitary or storm sewer, any street, road or highway, or upon the lands of another person or upon public lands except as necessary for the proper operation of any public water supply system.

Water spray park means a structure onto which water is sprayed, including water that is recycled from fountains or other devices but which no water accumulates.

Water supply emergency means a water supply emergency may be declared by the city manager when one or more of the following conditions occur:

(1) The occurrence of one or more water line breaks, or pump or system failures, which cause unexpected loss of the city's capability to provide water service;

(2) A reduction or suspension of the diversion of surface water from the Guadalupe River, which includes complying with provisions of the city's water diversion permits or the directives or orders of the office of the South Texas Watermaster;

(3) Natural or manmade contamination of the water supply source(s) which prohibits or limits the distribution of water to the city's water distribution system; or

(4) Any other event, circumstance, or condition that may significantly reduce the amount of water available for delivery to the city's water distribution system and which thus may possibly jeopardize public health and safety.

(Ord. No. 2004-04, § 1(art. 3-IV-2), 1-27-2004; Ord. No. 2010-08, § 1, 5-25-2010)

Sec. 110-93. Year-round water conservation measures.

The city will utilize the following strategies to encourage, promote and require citizens to conserve and use water wisely at all times.

(1) *Education and information.* The city will promote water conservation by informing water users of methods to save water inside residences and other buildings. Information will be disseminated by:

a. Distributing a fact sheet to all new water customers explaining those provisions of this article relating to water conservation;

b. Publishing educational newspaper articles to correspond with peak seasonal demand periods;

c. Publishing educational information and fact sheets on the city's website; and

d. Providing educational information to the public through other governmental/private agencies including, but not limited to, the Water Education Task Force, UGRA, County of Kerr, and the Headwaters Groundwater Conservation District.

(2) *Plumbing code.* The city has adopted and shall enforce the requirements of a plumbing code and those provisions of other applicable codes relating to the installation of water conserving plumbing devices to ensure the use of such devices in new construction.

(3) *Universal metering.* Water from the city water system shall be sold and delivered through its mains only to persons at whose premises water meters are installed in conformance with city regulations.

(4) *Water conserving landscaping.* The city will further encourage water conservation by:

a. Encouraging the use of only those plants listed in the document titled "Recommended Plants for the Kerrville Area" as prepared by the Environmental Education Committee and approved by the city council in all commercial and residential landscaping projects.

b. Encouraging licensed irrigation contractors to use drip irrigation systems, where possible, and to design all irrigation systems with water conservation features such as sprinkler heads, which emit large drops of water rather than fine mist and sprinkler layouts that limit the impact of wind.

c. Encouraging commercial establishments to use drip irrigation for landscape watering, when practical.

d. Requiring that all ornamental fountains, ponds or other ornamental water features must recycle and use minimal quantities of water.

(5) *Leak detection and repair.* The city shall utilize leak detection techniques in locating and reducing leaks. A monthly accounting of water delivery efficiencies will be made to the city manager. Detected leaks shall be repaired as soon as possible.

(6) *Recycle and reuse.* The city owns and operates a wastewater treatment facility. Type I reclaimed wastewater generated from this facility may be used to offset water demand for irrigation purposes. The city will continue to examine the possibility of additional uses for this resource including its use in the potable water system.

(7) *Restaurants.* Restaurants shall not serve water to customers except when specifically requested by a customer.

(8) *Hotel/motels/lodging.* All lodging facilities within the city or utilizing the city's water shall institute a linen reuse program. This program will require the lodging operator to advertise this program

within each room by indicating that customers may elect to reuse their linens and the linens will not be replaced until such time as the customer indicates the desire to have them replaced. In this subsection lodging facilities shall mean a facilities that primarily provide short-term lodging services including rooms for rent with or without board.

(Ord. No. 2004-04, § 1(art. 3-IV-3), 1-27-2004)

Sec. 110-94. Year-round prohibited uses of water.

(a) *Irrigation outside restricted hours.* Landscape watering with hose-end sprinklers or automatic irrigation systems shall be prohibited at all times except between the hours of 6:00 p.m. and 10:00 a.m.

(b) *Defenses.* It shall be a defense to prosecution under subsection (a) if:

(1) The person is irrigating a landscaped area by means of:

a. A hand-held hose with a manual or automatic shutoff nozzle operated by one person;

b. A bucket or watering can with a holding capacity of not greater than five gallons; or

c. A properly functioning drip irrigation system;

(2) The landscape watering was performed by those commercial enterprises in the business of growing or maintaining plants for sale, including plant nurseries; provided, however, that such landscape watering shall be performed solely for the establishment, growth, and maintenance of such plants;

(3) A landscape watering permit has been issued pursuant to section 110-95 to allow for landscape watering on any newly planted or transplanted landscaping so as to accomplish a reasonable establishment and maintenance of growth; or

(4) Operation of an automatic irrigation system was performed solely for the purpose of conducting maintenance and testing, and such operation was conducted by a licensed irrigation contractor.

(c) *Waste of water.* It is unlawful for a person to use water in a manner that constitutes waste. Such waste is found to be contrary to the public health, safety and welfare of the citizens of Kerrville and is therefore declared to be a nuisance.

(d) *Streets and gutters.* It is unlawful for a person to use water obtained from the city to flush street gutters or to permit water to run off or to accumulate in any street gutter, street, or alley, or to flow into a public drain in a manner that constitutes waste. It shall be a defense to a violation of this paragraph if the person is using the water for the proper operation or maintenance of any public water supply system.

(e) *Water from hydrants and blow-offs.* It is unlawful for a person to use water from hydrants and blow-offs for any purpose other than firefighting, fire flow testing, flushing of mains, using water pursuant to a temporary fire hydrant meter permit from the city, or other actions necessary for the proper operation of the public water supply system.

(f) *Leaks.* Upon receiving notice of a leak, a person shall repair or otherwise abate such water leak within 24 hours after having been given written notice from the manager.

(Ord. No. 2004-04, § 1(art. 3-IV-4), 1-27-2004; Ord. No. 2007-12, § 1, 7-10-2007; Ord. No. 2010-08, § 2, 5-25-2010)

Sec. 110-95. Permit for newly planted lawns and landscaping.

(a) Newly planted lawns and landscaping shall not be watered at any time other than those hours and days allowed for all other landscaping by this article except where authorized by permit issued by the city in accordance with this article. Any such permit shall only be granted where a plant or seed is planted in or transplanted to an area within a period of time as to accomplish a reasonable establishment and maintenance of growth, which generally occurs over a three week period.

(b) Permit requirements and conditions:

(1) A permit application shall be completed by the owner of the property to be served by the city water service.

(2) A permit application shall be accompanied by written documentation indicating the planting date of the new lawn and/or landscaping.

(3) The permit shall be valid for a 30-day period from the date of issuance by the manager.

(4) The permit shall allow additional watering outside the restricted hours and days of this article; however, in no instance shall landscape irrigation be allowed between the hours 12:00 noon and 6:00 p.m. on any day of the week.

(5) Upon the effective date of entering into Stages 3, 4, or 5, as defined by this article, the city shall not issue any new permits.

(6) A permit, once issued, shall remain in full force and effect until the earlier of its expiration date or the effective date of entering into Stage 3, as defined by this article.

(7) Following the expiration of a permit or upon the effective date of entering into Stage 3, it shall be unlawful to water new lawns and/or landscaping at any time other than those hours and days allowed for all other landscaping by this article.

(Ord. No. 2004-04, § 1(art. 3-IV-5), 1-27-2004; Ord. No. 2010-08, § 3, 5-25-2010)

Sec. 110-96. Permit for athletic fields and golf courses.

(a) Unless using reclaimed water in accordance with an agreement with the city, athletic fields and golf courses shall not be watered at any time other than those hours and days allowed for all other landscaping by this article except where authorized by a permit issued by the city in accordance with this article. All landscaped and out-of-play areas shall at all times adhere to the regular landscape irrigation restrictions then in place under this article.

(b) Permit requirements and conditions:

(1) A permit application shall be completed by the owner or operator of the athletic field or golf course served by city water service.

(2) A permit application shall be accompanied by an analysis of the irrigation system prepared and sealed by a licensed irrigator which shall include a zone-by-zone analysis of the irrigation system that, at a minimum, includes a review of the design appropriateness for current landscape requirements; irrigation spray heads and valves; precipitation rates expressed in inches per hour; and an annual maintenance plan that includes irrigation system maintenance, landscape maintenance, and a basic summer and winter irrigation scheduling plan. The permit application shall also include a water conservation plan indicating specific measures to reduce consumption and improve efficiency.

(3) As part of the application, the applicant shall indicate the expected precipitation rates, schedules, and run times for each applicable zone.

(4) The permit shall be valid for six months from the date of issuance.

(5) The permit shall allow additional watering outside the restricted hours and days of this article; however, athletic field and golf course irrigation shall not be allowed between the hours 12:00 noon and 6:00 p.m. on any day of the week.

(6) A permit, once issued, shall remain in full force and effect until the earlier of its expiration date or the effective date of entering into Stage 3.

(7) Following the expiration of a permit or upon the effective date of entering into Stage 3, it shall be unlawful to water athletic fields or golf courses at any time other than those hours and days allowed for all other landscaping by this article, unless using reclaimed water.

(Ord. No. 2010-08, § 4, 5-25-2010)

Sec. 110-97. Water conservation stages defined.

(a) *Stage 1—Moderate water conservation conditions.* "Stage 1—Moderate water conservation conditions" shall be deemed to exist when the city manager finds that the seven day average water demand exceeds 65 percent of the safe operating capacity or where a water supply emergency is declared and the city manager determines that this stage is appropriate to address the emergency.

(b) *Stage 2—Critical water conservation conditions.* "Stage 2—Critical water conservation conditions" shall be deemed to exist when the city manager finds that the seven day average water demand exceeds 75 percent of the safe operating capacity or where a water supply emergency is declared and the city manager determines that this stage is appropriate to address the emergency.

(c) *Stage 3—Crucial water conservation conditions.* "Stage 3—Crucial water conservation conditions" shall be deemed to exist when the city manager finds that the seven day average water demand exceeds 85 percent of the safe operating capacity or where a water supply emergency is declared and the city manager determines that this stage is appropriate to address the emergency.

(d) *Stage 4—Severe water conservation conditions.* "Stage 4-Severe water conservation conditions" shall be deemed to exist when the city manager finds that the seven day average water demand exceeds 95 percent of the safe operating capacity or where a water supply emergency is declared and the city manager determines that this stage is appropriate to address the emergency.

(e) *Stage 5—Water emergency conditions.* "Stage 5—Water emergency conditions" shall be deemed to exist when the city Manager finds that the seven day average water demand exceeds 100 percent of the safe operating capacity or where a water supply emergency is declared and the city manager determines that this stage is appropriate to address the emergency.

(Ord. No. 2010-08, § 5, 5-25-2010)

Sec. 110-98. Changing and notice of safe operating capacity.

(a) *General.* The current safe operating capacity shall be posted on the city's official web site.

(b) *Increase in safe operating capacity.* The safe operating capacity may be increased by the city manager from time to time upon a finding that an event has occurred which has increased the available supply of potable water that can be delivered to the city's water distribution system, which events may include:

(1) The addition of water treatment capacity at either an existing water treatment plant or a new plant;

(2) The addition of groundwater wells;

(3) The addition of aquifer storage and recovery wells; or

(4) The addition of any other potable water source or due to regulatory changes that increase water availability from existing facilities/sources.

An increase to the safe operating capacity shall only occur after thorough testing of the new water source is completed to insure safety and reliability of the source.

(c) *Reduction in safe operating capacity.* The safe operating capacity may be reduced by the city manager from time to time upon a finding by the city manager that an event has occurred which has reduced the available supply of potable water that can be delivered to the city's water distribution system, which events may include:

(1) A temporary cessation of water treatment operations at the city's water treatment plant caused by mechanical failure, routine maintenance, flooding of the Guadalupe River, or other events which reduce the ability of the city to treat water to required drinking water standards;

(2) A reduction in total pumping capacity from the city's groundwater wells because of routine maintenance, pump failure, new or revised regulatory provisions or similar events;

(3) Inability to withdraw water from the aquifer storage and recovery wells because of routine maintenance, pump failure, new or revised regulatory provisions or similar events;

(4) A reduction in the flow of the Guadalupe River such that further diversion of water pursuant to the city's water diversion permits is limited or prohibited;

(5) A reduction in the allowable rate or amount of diversion ordered by the office of the South Texas Watermaster or other regulatory changes;

(6) Catastrophic failure of the city's ponding dam; or

(7) A water supply emergency is declared by the city manager.

(Ord. No. 2010-08, § 5, 5-25-2010);

Sec. 110-99. Declaration of water conservation conditions and stages; public notice.

(a) *City manager declaration.* Upon a finding by the city manager that "Stage 1—Moderate water conservation conditions," "Stage 2—Critical water conservation conditions," "Stage 3—Crucial water conservation conditions," "Stage 4—Severe water conservation conditions," or "Stage 5—Water emergency conditions" exist, the city manager shall issue notice of the commencement and/or termination of the imposition of the mandatory water conservation measures in effect for the respective stage. Said notice shall be:

(1) Posted on the city's official bulletin board and at all public entrances and exits of city hall and other city facilities where the public has access;

(2) Posted on the city's internet website; and

(3) Issued in a press release that is hand-delivered or sent by facsimile or electronic mail to:

a. The electronic and print media located within the city; and

b. The television networks located in Kerrville and San Antonio.

(b) *Contents of notice.* Each notice issued in accordance with subsection (a) shall contain at least the following information:

(1) The effective and/or termination date of the applicable water conservation stage;

(2) A brief description of the water conservation stage and the measures to be in effect and/or terminated;

(3) The telephone number(s) of the office to contact regarding questions about the water conservation stage in effect; and

(4) The following sentence printed in bold type: **"Failure to comply with the water conservation measures currently in effect is a violation of Chapter 110, Article III of the Kerrville City Code and, upon conviction, may result in a fine of not less than $50.00 nor more than $2,000.00 per offense plus court costs. Repeated violations may also result in disconnection of water service."**

(Ord. No. 2010-08, § 6, 5-25-2010)

Sec. 110-100. Stage 1—Conservation measures.

(a) *Stage 1 conservation measures defined.* The following water conservation measures shall be in effect at 12:01 a.m. on the day following notice of the declaration of Stage 1—Moderate water conservation conditions:

(1) Landscape watering with hose-end sprinklers or automatic irrigation systems is prohibited at all times except on the following days between the hours of 6:00 a.m. and 10:00 a.m. and between the hours of 8:00 p.m. and 12:00 a.m.:

a. On Tuesdays and Saturdays for street addresses whose last digit ends in an odd number; or

b. On Wednesdays and Sundays for street addresses whose last digit ends in an even number.

(2) Landscape watering is permitted at any time if conducted by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person, a faucet-filled bucket or watering can with a capacity of five gallons or less, or a drip irrigation system.

(3) The use of water from a temporary fire hydrant meter shall be limited for construction and irrigation purposes at a rate not to exceed 25,000 gallons per day; in addition, the use of the water for irrigation purposes is restricted to those hours and days allowed for all other landscaping by this section.

(4) The following uses of water are prohibited:

a. Operation of any fountain, pond, or other ornamental water feature for aesthetic purposes except where necessary to support aquatic life or where such fountains or ponds are equipped with a re-circulation system.

b. Washing down any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced areas except when the use is required by law for the protection of health and safety or when it is required to perform duties related to construction activity and a power washer is used.

(b) *Termination of Stage 1.* Stage 1 shall terminate at 12:01 a.m. on the day following notice of the declaration by the city manager that the conditions triggering Stage 1 have ceased to exist for a period of 15 consecutive days. Such declaration may be made prior to the expiration of the 15-day period if, in the discretion of the city manager, extraordinary circumstances exist, such as the occurrence of significant and/or a prolonged period of precipitation.

(Ord. No. 2010-08, §.7, 5-25-2010; Ord. No. 2011-12, § 1, 6-14-2011)

Sec. 110-101. Stage 2—Conservation measures.

(a) *Stage 2 conservation measures defined.* The following water conservation measures shall be in effect at 12:01 a.m. on the day following notice of the declaration of Stage 2—Critical water conservation conditions:

(1) Landscape watering with hose-end sprinklers or automatic irrigation systems is prohibited at all times except on the following days between the hours of 6:00 a.m. and 9:00 a.m. and between the hours of 8:00 p.m. and 10:00 p.m.:

a. On Tuesdays and Saturdays for street addresses whose last digit ends in an odd number; or

b. On Wednesdays and Sundays for street addresses whose last digit ends in an even number.

(2) Landscape watering conducted by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person, a faucet-filled bucket or watering can with a capacity of five gallons or less, or a drip irrigation system is prohibited at all times except between the hours of 7:00 p.m. and 9:00 a.m.

(3) The use of water from a temporary fire hydrant meter shall be limited for construction and irrigation purposes at a rate not to exceed 20,000 gallons per day; in addition, the use of the water for irrigation purposes is restricted to those hours and days allowed for all other landscaping by this section.

(4) The following uses of water are prohibited:

a. Operation of any ornamental fountain, pond, or other ornamental water feature for aesthetic purposes except where necessary to support aquatic life or where such fountains or ponds are equipped with a re-circulation system.

b. Washing down any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced areas except when the use is required by law for the protection of health and safety or when it is required to perform duties related to construction activity and a power washer is used.

c. Use of water for dust control.

d. Washing down buildings or structures for purposes other than immediate fire protection or when it is required to perform duties related to construction activity and a power washer is used.

e. Use of bulk potable water obtained from the city for construction purposes.

(b) *Termination of Stage 2.* Stage 2 shall terminate at 12:01 a.m. on the day following the notice of the declaration by the city manager that the conditions triggering the Stage 2 have ceased to exist for a period of 15 consecutive days. Such declaration may be made prior to the expiration of the 15-day period if, in the discretion of the city manager, extraordinary circumstances exist, such as the occurrence of significant and/or a prolonged period of precipitation. Upon the termination of Stage 2, the city manager, based upon the existing conditions, has the discretion to determine which appropriate stage, if any, and the water conservation measures set forth in that stage, shall become effective.

(Ord. No. 2010-08, § 8, 5-25-2010; Ord. No. 2011-12, § 2, 6-14-2011)

Sec. 110-102. Stage 3—Conservation measures.

(a) *Stage 3 conservation measures defined.* The following water conservation measures shall be in effect at 12:01 a.m. on the day following notice of the declaration of Stage 3—Crucial water conservation conditions:

(1) Landscape watering with hose-end sprinklers or automatic irrigation systems is prohibited at all times except on the following days between the hours of 6:00 a.m. and 9:00 a.m.:

a. On Tuesdays and Saturdays for street addresses whose last digit ends in an odd number; or

b. On Wednesdays and Sundays for street addresses whose last digit ends in an even number.

(2) Landscape watering conducted by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person, a faucet-filled bucket or watering can with a capacity of five gallons or less, or a drip irrigation system is prohibited at all times except between the hours of 7:00 p.m. and 11:00 p.m. and between the hours of 6:00 a.m. and 9:00 a.m.

(3) The use of water from a temporary fire hydrant meter shall be limited for construction and irrigation purposes at a rate not to exceed 15,000 gallons per day; in addition, the use of the water for irrigation purposes is restricted to those hours and days allowed for all other landscaping by this section.

(4) The following uses of water are prohibited:

a. Operation of any ornamental fountain, pond, or other ornamental water feature for aesthetic purposes except where necessary to support aquatic life or where such fountains or ponds are equipped with a re-circulation system.

b. Washing down any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced areas except when such is required by law for the protection of health and safety or when it is required to perform duties related to construction activity and a power washer is used.

c. Use of water for dust control.

d. Washing down buildings or structures for purposes other than immediate fire protection or when it is required to perform duties related to construction activity and a power washer is used.

e. Use of bulk potable water obtained from the city for construction purposes.

(b) *Termination of Stage 3.* Stage 3 shall terminate at 12:01 a.m. on the day following the notice of the declaration by the City manager that the conditions triggering Stage 3 have ceased to exist for a period of 15 consecutive days. Such declaration may be made prior to the expiration of the 15-day period if, in the discretion of the city manager, extraordinary circumstances exist, such as the occurrence of significant and/or a prolonged period of precipitation. Upon the termination of Stage 3, the city manager, based upon the existing conditions, has the discretion to determine which appropriate stage, if any, and the water conservation measures set forth in that stage, shall become effective.

(Ord. No. 2010-08, § 9, 5-25-2010; Ord. No. 2011-12, § 3, 6-14-2011)

Sec. 110-103. Stage 4—Conservation measures.

(a) *Stage 4 conservation measures defined.* The following water conservation measures shall be in effect at 12:01 a.m. on the day following notice of the declaration of Stage 4—Severe water conservation conditions:

(1) Landscape watering with hose-end sprinklers or automatic irrigation systems is prohibited at all times;

(2) Landscape watering conducted by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person, a faucet-filled bucket or watering can with a capacity of five gallons or less, or a drip irrigation system is prohibited at all times except between the hours of 7:00 p.m. and 11:00 p.m. and between the hours of 6:00 a.m. and 9:00 a.m.

(3) The use of water from a temporary fire hydrant meter shall be limited for construction and irrigation purposes at a rate not to exceed 10,000 gallons per day; in addition, the use of the water for irrigation purposes is restricted to those hours and days allowed for all other landscaping by this section.

(4) The following uses of water are prohibited:

a. Operation of any ornamental fountain, pond, or other ornamental water feature for aesthetic purposes except where necessary to support aquatic life.

b. Washing down any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced areas except when such is required by law for the protection of health and safety or when it is required to perform duties related to construction activity and a power washer is used.

c. Use of water for dust control.

d. Washing down buildings or structures for purposes other than immediate fire protection or when it is required to perform duties related to construction activity and a power washer is used.

e. Use of bulk potable water obtained from the city for construction purposes.

f. Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle other than at a commercial car wash facility or service station or by a person washing any public safety vehicle on public property.

(5) No permits for new, additional, or expanded water service connections, meters, or service lines shall be granted. An exception applies where the city has already issued either a final plat for a residential lot or a commercial building permit for the site or the construction project that requires the water service.

(b) *Termination of Stage 4.* Stage 4 shall terminate at 12:01 a.m. on the day following the notice of the declaration by the city manager that the conditions triggering Stage 4 have ceased to exist for a period of three consecutive days. Such declaration may be made prior to the expiration of the three-day period if, in the discretion of the city manager, extraordinary circumstances exist, such as the occurrence of significant and/or a prolonged period of precipitation. Upon the termination of Stage 4, the city manager, based upon the existing conditions, has the discretion to determine which appropriate stage, if any, and the water conservation measures set forth in that stage, shall become effective.

(Ord. No. 2010-08, § 10, 5-25-2010)

Sec. 110-104. Stage 5—Conservation measures.

(a) *Stage 5 conservation measures defined.* The following water conservation measures shall be in effect at 12:01 a.m. on the day following the notice of the declaration of Stage 5—Water emergency conditions:

(1) Landscape watering, including handheld irrigation, with potable water is prohibited at all times;

(2) The following uses of water are prohibited:

a. Operation of any ornamental fountain, pond or other ornamental water feature for aesthetic purposes except where necessary to support aquatic life.

b. Washing down any sidewalk, walkway, driveway, parking lot, tennis court, or other hard-surfaced areas except when such is required by law for the protection of health and safety.

c. Use of water for dust control.

d. Washing down buildings or structures for purposes other than immediate fire protection.

e. Use of bulk potable water obtained from the city for construction purposes.

f. Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle other than by a person washing any public safety vehicle on public property.

g. Filling, refilling, or adding water to swimming pools, wading pools, and jacuzzis-type pools, which are located outside.

h. Using a fire hydrant pursuant to a temporary fire hydrant permit.

i. Use of water for a water spray park, even where such water is recirculated.

(3) Vehicle washing at a vehicle wash facility is prohibited at all times except between the hours of 7:00 a.m. and 7:00 p.m. A person owning or operating a vehicle wash facility shall take affirmative action to prevent use of the vehicle wash facility during the prohibited hours specified herein. Such actions shall include posting a sign indicating that the vehicle wash facility is closed and preventing vehicular access onto the property or into the washing bays. In addition, the owner/operator may also choose to disable the washing mechanisms so as to prevent operation.

(4) No permits for new, additional, or expanded water service connections, meters, or service lines shall be granted. An exception applies where the city has already issued either a final plat for a residential lot or a commercial building permit for the site or the construction project that requires the water service.

(b) *Termination of Stage 5.* Stage 5 shall terminate at 12:01 a.m. on the day following the notice of the declaration by the city manager that the conditions triggering Stage 5—Water emergency conditions have ceased to exist for a period of three consecutive days. Such declaration may be made prior to the expiration of the three-day period if, in the discretion of the city manager, extraordinary circumstances exist, such as the occurrence of significant and/or prolonged periods of precipitation. Upon the termination of Stage 2, the city manager, based upon the existing conditions, has the discretion to determine which appropriate stage, if any, and the water conservation measures set forth in that stage, shall become effective.

(Ord. No. 2010-08, § 11, 5-25-2010)

Sec. 110-105. Enforcement.

(a) *Violation of article prohibited.* It shall be unlawful for a person to use water obtained from a private well, public water supply company, or the city in a manner contrary to the provisions of this article. The penalty for violation of this article shall be in accordance with the general penalty provisions contained in chapter 1 of the Code of Ordinances but in no case shall the fine of any violation hereof be less than $50.00. Proof of a culpable mental state is not required for conviction of an offense under this article.

(b) *Issuance of citations.* The manager or any other personnel authorized to issue class C misdemeanor citations are authorized to issue citations for violations of this article.

(c) *Multiple violations.* If a person is convicted of:

(1) Three or more separate violations of this article within a single calendar year, the city manager shall, upon written notice to the customer, be authorized to install a flow restriction device in the service line(s) of the customer, in which case the city manager may place a service charge equal to the cost of the installation and subsequent removal of such device on the customer's water bill.

(2) Four or more separate violations of this article within a single calendar year, the city manager shall, upon written notice to the customer, be authorized to discontinue water service to the premises where such multiple violations have occurred and such discontinuance of service shall continue until such time as all fines or penalties are paid in full and payment by the violator of a re-connection charge as set by the city council within the city fee schedule.

(d) *Injunction.* In addition to such other civil or criminal penalties that may be available, the city attorney may seek an injunction in accordance with Texas Local Gov. Code Section 54.016 against a person or entity believed to be in violation of this article.

(e) *Person responsible.* The following presumptions shall be in effect with regard to the person responsible for a violation of this article:

(1) Any person, including a person classified as a water customer, who is in apparent control of the property where a violation occurs or originates shall be presumed to be the violator.

(2) Proof that a violation occurred on a person's property shall constitute a rebuttable 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.

(3) Parents shall be presumed to be responsible for the 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 directed or assisted in the commission of 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 article and that the parent could not have reasonably known of the violation.

(f) *Defenses.* It shall be a defense to a violation of this article if:

(1) The water is being used to irrigate or water the plant inventory of a wholesale or retail landscape nursery or other commercial business selling landscape or house plants;

(2) The person is using water, other than that provided by the city, that has been recirculated;

(3) The person is using water from a source other than the city's public (potable) water supply system, including:

a. Reclaimed water in compliance with applicable TCEQ regulations for landscape watering. Such landscape watering with hose-end sprinklers or an automatic irrigation system shall

be prohibited at all times except between the hours of 6:00 p.m. and 10:00 a.m. Landscape watering is permitted at anytime if conducted by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person, a faucet-filled bucket or watering can with a capacity of five gallons or less, or a drip irrigation system; or

b. Surface water diversion rights which the person has the legal right to use.

(4) The use of the water was necessary to prevent damage or destruction to property other than landscaping plants and ground covers suffering damage from dehydration;

(5) The person is:

a. The owner, or his or her agent, of a commercial car wash or service station with a car wash;

b. The hours in which use of a commercial car wash is prohibited are posted at a location visible to customers entering or attempting to use the car wash at the time of the alleged offense;

c. Said owner or agent did not otherwise authorize the use of the car wash during the prohibited hours of operation;

(6) The person is washing down sidewalks, walkways, driveways, vehicles used to transport food and perishables, garbage trucks, or aircraft that the manager or the city health officer determines requires frequent cleaning in order to protect the health, safety, and welfare of the public; or

(7) Operation of an automatic irrigation system was performed solely for the purpose of conducting maintenance and testing, and such operation was conducted by a licensed irrigation contractor.

(Ord. No. 2010-08, § 12, 5-25-2010)

Sec. 110-106. Variances.

(a) *Authority to grant variances.* The city manager is authorized to grant variances pursuant to the provisions of this section.

(b) *Grounds for granting variances.* A variance may be granted to authorize the use of water otherwise prohibited under this article if the city manager finds:

(1) That failure to grant a requested variance would adversely affect public health or sanitation;

(2) That failure to grant the requested variance would adversely affect the health or safety of the person requesting such variance;

(3) Compliance with this article cannot technically be accomplished during the duration of the water supply shortage or other condition for which water conservation measures are in effect;

(4) Alternative methods can be implemented which will achieve the same level of reduction in water use as the water conservation measure from which the variance is sought; or

(5) that the person has a disability in accordance with subsection (j) below.

(c) *Application for variance.* A person requesting a variance from the provisions of this article must file an application with the city manager on forms promulgated by the city. Each application shall include the following information:

(1) Name and address of the applicant(s);

(2) A full description of the proposed water use, including, but not limited to:

a. The daily amount of the proposed use;

b. The hours of the proposed use;

(3) A reference to the specific provision(s) of this article from which the applicant is requesting relief;

(4) A detailed statement as to how the specific provision of the article adversely affects the applicant and/or what damage or harm will occur to the applicant or others if applicant complies with this article;

(5) A description of the relief requested;

(6) The period of time for which the variance is sought;

(7) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this article and the compliance date; and

(8) Any additional information that the city manager deems relevant and necessary in making a determination regarding the request.

(d) *Filing period.* An application for a variance requested pursuant to this section may not be filed prior to the effective date of the water conservation measure(s) from which relief is being sought.

(e) *Consideration of variance application.* The city manager shall grant or deny the application for variance not later than 5:00 p.m. on the third city business day following delivery of the application to the city manager. A variance shall be deemed to be approved in the manner requested in the application if the city manager has not denied the application within the time set forth in this section.

(f) *Contents of variance.* A variance granted by the city manager shall contain the following provisions:

(1) A description of the allowable water uses granted by the variance;

(2) A description of any conditions imposed which must be satisfied in order to maintain the variance in effect;

(3) A timetable for compliance with any conditions set forth in the variance; and

(4) Such other provisions as the city manager determines to be reasonable and necessary.

(g) *Termination of variance.* Variances granted shall expire upon the earlier of:

(1) The date the water conservation measure from which the variance was granted is no longer in effect;

(2) The date the city manager determines that the applicant has failed to comply with any deadline imposed with respect to compliance with the conditions set forth in the variance; or

(3) The date the city manager specifically sets forth for termination of the variance.

(h) *Variance not a defense.* The granting of a variance shall not be a defense to a violation of the provisions of this article which occurs prior to the effective date of the variance.

(i) *Appeal of denial by city manager.* An applicant may appeal the denial by the city manager of an application for a variance to the city council pursuant to the following procedures:

(1) An appeal must be filed in writing with the city secretary not later than three city business days following the date of the denial;

(2) The appeal will be considered by the city council at its first regularly scheduled meeting following the third city business day after the date the appeal is filed with the city secretary;

(3) The city council may hear testimony from the city manager and the applicant, but shall not be required to hear such testimony;

(4) The city council shall grant or deny the variance in accordance with the criteria set forth in subsection (b); and

(5) The city council shall grant or deny the variance at the meeting at which the appeal is considered.

(j) *Variances for people with disabilities.* The city manager shall grant a variance to a person to use a hose-end sprinkler or an automatic irrigation system to perform landscape watering when the use of hose-end sprinklers or automatic irrigation systems are otherwise prohibited by this article subject to the following findings:

(1) The property is a single-family residence and constitutes the permanent residence of the applicant;

(2) The applicant has provided to the city manager a written statement from a medical doctor licensed to practice medicine in the State of Texas that the applicant is physically incapable of:

a. Walking without assistance;

b. Standing for periods in excess of 15 minutes;

c. Carrying a five-gallon bucket of water; or

d. Carrying a standard garden hose; and

(3) There is no other person who resides on the property with the applicant who is physically capable of performing landscape watering by means of a hand-held hose with a manual or automatic shutoff nozzle operated by one person or, a faucet-filled bucket or watering can with a capacity of five gallons or less.

(k) The variance granted by the city manager pursuant to this section may not authorize landscape watering at any time outside of the days and hours during which landscape watering is otherwise permitted by this article. Said variance may restrict landscape watering to times and days less than those otherwise allowed by this article and, with respect to automatic irrigation systems, may limit the amount of time each station of the system is allowed to run.

(Ord. No. 2010-08, § 13, 5-25-2010)

Secs. 110-107—110-130. Reserved.

FOOTNOTE(S):

--- (3) ---

Editor's note— Ord. No. 2010-08, §§ 1—13 adopted May 25, 2010, substantially renumbered the provisions of former Art. III. Renumbered former §§ 110-96—110-104 pertained to similar subject matter and derived from Ord. No. 2004-04, § 1, 1-27-2004; Ord. No. 2006-13, §§ 1, 2, 8-22-2006. (Back)