



Water Conservation Plan for the City of Galveston

Section I: Objectives

Having a dependable water supply has been a key issue in economic and land development in Texas. The growing population and economic expansion occurring in Southeast Texas are placing increased demands on our water supplies. In order to meet the challenge of providing for our current and future needs we must learn to use more efficiently the water we already have. By stretching our existing supplies we can delay the need for new supplies, minimize the environmental impacts associated with developing new water resources, and postpone the high cost of constructing the infrastructure (pump stations, storage and pipelines) necessary to store, and transport the additional water into our homes and businesses.

The objectives of this water conservation plan are as follows:

- To reduce water consumption from the levels that would prevail without conservation efforts.
- To reduce the loss and waste of water.
- To improve the efficiency of the water utility.
- To document the level of reuse in the water supply.
- To extend the life of current water supplies by reducing the rate of growth in water demand.

The water conservation plan presented in this document is a model water conservation plan ("WCP") intended for adoption by wholesale and retail customers of the City of Galveston. This WCP includes all the plan elements required by the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB).

Section II: Texas Commission on Environmental Quality (TCEQ) Rules

II.1 Water Conservation Plans

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288. 2 of the Texas Administrative Code which is included in this document as **Appendix A**. Based on these rules, a water conservation plan is defined as "A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water." The elements in the TCEQ water conservation rules covered in this WCP are listed below.



44 **Minimum Conservation Plan Requirements**

45 The minimum requirements in the Texas Administrative Code (TAC) for Water Conservation Plans for
 46 Public Water Suppliers are covered in this report as follows:
 47

<u>TAC Section</u>	<u>Content</u>	<u>WCP Section</u>
288.2(a)(1)(A)	Utility Profile	Section III & Appendix B
288.2(a)(2)(B)	Record Management System	Section V-II
288.2(a)(1)(C)	Specification of Goals	Section IV
288.2(a)(1)(D)	Accurate Metering	Section V-I
288.2(a)(1)(E)	Universal Metering	Section V-I
288.2(a)(1)(E)	Determination and Control of Non-Revenue Water	Section V-III
288.2(a)(1)(G)	Public Education and Information	Section VI
288.2(a)(1)(H)	Non-Promotional Water Rate Structure	Section VII
288.2(a)(1)(I)	Reservoir System Operation Plan	Section VIII-II
288.2(a)(1)(J)	Means of Implementation & Enforcement	Section IX
288.2(a)(1)(K)	Coordination with Regional Water Planning Group(s)	Section VIII-V

48
 49 As the City of Galveston maintains a population exceeding 5,000 people, the TAC requires the following
 50 additional items be included in water conservation plans:
 51

<u>TAC Section</u>	<u>Content</u>	<u>WCP Section</u>
288.2(a)(2)(A)	Leak Detection, Repair, and Water Loss Accounting	Section V-III, V-I, V-V
288.2(a)(2)(C)	Requirement for Water Conservation Plans by Wholesale Customers	Section VIII-IV

52
 53 **Additional Conservation Strategies**

54
 55 TCEQ rules also list additional *optional* but not required conservation strategies, which may be adopted by
 56 suppliers. The City of Galveston has chosen to include the following optional strategies within this WCP:
 57

<u>TAC Section</u>	<u>Content</u>	<u>WCP Section</u>
288.2(a)(3)(A)	Conservation Oriented Water Rates	Section VII
288.2(a)(3)(B)	Ordinances, Plumbing Codes or Rules on Water Conserving Fixtures	Section VIII-1
288.2(a)(3)(G)	Monitoring Methods	Section V-V
288.2(a)(3)(H)	Other conservation practices	Section VIII

58
 59



60 **Section III: Water Utility Profile**

61

62 **Appendix B** to this water conservation plan is the City of Galveston water utility profile. The information
63 provided was obtained from monthly Utility Billing, and the Gulf Coast Water Authority take point meter.
64 The data in the report is based on water use for calendar years 2014-2018. Similar information was provided
65 to the Texas Water Development Board using Form TWDB-1965 *Water Conservation Utility Profile* which
66 was submitted online at URL (active as of 11/26/2018):

67 <http://www.twdb.texas.gov/conservation/municipal/plans/UP.asp>

68

69 **Section IV: Specification of Goals**

70

71 Current TCEQ rules require the adoption of specific water conservation goals for a water conservation plan.
72 As part of the plan adoption, 5-year and 10-year goals for per capita municipal use, following TCEQ
73 procedures described in the water utility profile (**Appendix C**) have been developed. The goals for this water
74 conservation plan include the following:

75

- 76 • Strive to attain water use below the specified amount in gallons per capita per day shown on the
77 completed TWDB Form No. 1964 (5- and 10-year goals for water savings). The goals form is
78 included in Appendix C and lists the 5-year goal as 218.2 GPCD and the 10-year goal as 208.2 GPCD.
79 Current water usage is 233.3 GPCD.
- 80 • Conduct water audits as required by TCEQ and reduce Non-Revenue Water (NRW) quantities to
81 levels below the goals listed on TWDB Form No. 1964 (Appendix C). The NRW 5-year goal is 40.6
82 GPCD or 779.6 MG/yr and the 10 year goal is 30.6 GPCD or 606 MG/yr. The current NRW quantity
83 is 55.4 GPCD.
- 84 • Raise public awareness of water conservation and encourage responsible public behavior by a public
85 education and information program as discussed in Section VI.

86

87 The City will attempt to recruit a water conservation plan coordinator to assist the Director of Municipal
88 Utilities in meeting these goals.

89

90 **Section V: Metering, Water Use Records, Control of Non-Revenue Water, and Leak Detection and**
91 **Repair**

92

93 One of the key elements in water conservation is the careful tracking of water use and control of losses through
94 illegal diversion and leaks. Careful metering of water deliveries and water use, detection and repair of leaks
95 in the distribution system and regular monitoring of unaccounted water are important in controlling losses.

96

97 The City of Galveston is currently developing a comprehensive plan to reduce non-revenue water use,
98 including continuing subsurface leak detection efforts for the entire distribution system.

99

100 V.I. Metering of Customer and Public Uses and Meter Testing, Repair and Replacement.

101

102 The City of Galveston replaced all meters throughout its system in 2005, and has implemented a meter testing
103 program since that date. In 2018, meter tests showed a volume-averaged 95.3% accuracy. Most of the
104 inaccuracies appeared in the larger meters (i.e., 2 inch +) categories. During 2019, the City will further refine
105 its meter testing and replacement program to decrease the quantities of non-revenue water utilized by City
106 customers. Meters will be preferentially tested according to their age, size and volume of water recorded. The
107 City will strive to achieve a weighted average accuracy rating of no less than 98.5%.

108



109 V-II Record Management System

110
111 The City of Galveston classifies water customers as residential (single-family and multi-family), commercial,
112 institutional/government, and industrial. Water usage by customers in each use category is included in the
113 yearly conservation reports submitted to the Texas Water Development Board. Usage data is a key component
114 of the continuous water supply planning process for the City, the Region H water planning group, and the
115 entire State of Texas. Monthly analysis of water usage records allows for the identification of high-water
116 users, usage trends, potential leak development, and distribution system evaluation by City staff. Water usage
117 records will be scrutinized in more detail when the City operates under the higher drought stages of its drought
118 contingency plan.

119
120 V-III Determination and Control of Non-Revenue Water

121
122 The City is currently developing a comprehensive program to mitigate non-revenue water. Non-revenue water
123 is the difference between water obtained by the City (from the Gulf Coast Water Authority and potentially
124 other sources) and total water deliveries to customers as measured by water meters. Minimizing non-revenue
125 water quantities ensures that the City of Galveston is efficiently using only the volume of water required to
126 meet its needs, and that the City is not using water in excess of its needs (which results in higher costs and
127 less water available for the region). Minimizing non-revenue water also allows the City to delay development
128 of additional water supplies and infrastructure needed to convey the supplies to customers. Non-revenue water
129 includes water from several categories:

- 130 • Inaccuracies in customer meters (meters tend to run more slowly as they age, thereby under-
- 131 recording actual usage)
- 132 • Losses due to water main break and leaks in the water distribution system
- 133 • Losses due to illegal connections and theft
- 134 • Water uses that are unmetered, including use for firefighting, line flushing, and uses related
- 135 to new construction.

136 Representatives from the Utility Billing, Finance, and Public Works departments hold monthly discussions
137 regarding estimates of non-revenue water. These discussions may result in actions or projects to be undertaken
138 to reduce non-revenue water quantities. In November 2017, City staff identified and repaired a large water
139 leak which contributed approximately 831,000,000 gallons of non-revenue water per year. Future leak
140 detection and repair projects will further reduce water leakage and non-revenue water quantities. Prior to the
141 detection and repair of the water leak in 2017, the City of Galveston averaged 98.8 gallons per person per day
142 (GPCD) of non-revenue water. Repairing the leak reduced the non-revenue water rate to 55.4 GPCD. The
143 City of Galveston, through measures implemented as a result of this water conservation plan, will strive to
144 achieve a 40.6 GPCD and 30.6 GPCD non-revenue water goal by 2024 and 2029, respectively. Achieving
145 these goals will make the City of Galveston one of the most water efficient cities of its size and age within
146 Texas, given its unique demographics and economy.

147
148 V-IV Leak Detection and Repair

149
150 City crews and contractors will look for and report evidence of leaks in the water distribution system, as well
151 as analyze water usage data to assess where leaks may be occurring. As part of the non-revenue water
152 program, the City is exploring the establishment of district metered areas and the use of satellite technology
153 to identify leaks in the system. If this technology turns out to be effective and provides a compelling business
154 case justification, the City will incorporate this technology into its leak detection plans. Leak repairs are
155 prioritized based on the severity of the leak and are made pending availability of resources. The City of



156 Galveston attempts to repair leaks as quickly as possible with minimal disruption of the distribution of water
157 to its customers.

158
159 V-V. Monitoring of Effectiveness and Efficiency – Annual Water Conservation Reporting
160

161 The City of Galveston will prepare an annual water conservation report update and deliver the report to the
162 Texas Water Development Board by May 1 of each year. Development of the report will aid in monitoring
163 the effectiveness and efficiency of the water conservation program and planned conservation related
164 activities. The report will contain water usage records by category, per capita municipal usage, and non-
165 revenue water quantities for the past year, as well as provide a longer historical record of such quantities. The
166 report will be used to assess whether the City is achieving its water conservation goals. Similar data is
167 provided within the City of Galveston Utility Profile accompanying this water conservation plan. Annual
168 water usage reports are public records and can be requested at the Office of the City Secretary during normal
169 business hours or online at <https://www.galvestontx.gov/537/Public-Records> (as of 1/31/2019).

170
171 **Section VI: Continuing Public Education and Information Campaigns**
172

173 The continuing public education and information campaigns regarding water conservation developed by the
174 City of Galveston include the following general elements:

- 175
176 • Water conservation informational inserts included with water bills to thousands of customers and
177 posted online. Inserts include material developed by City of Galveston staff as well as material
178 obtained by the TWDB, the TCEQ, GCWA, the Harris-Galveston Subsidence District, and other
179 sources.
- 180 • Online water conservation resources available from the City of Galveston website and the City’s
181 social media pages. These resources include information about how to shop for high-efficiency
182 plumbing fixtures and appliances.
- 183 • Promotion of the Texas Smartscape program for managing water usage in landscaping
184 (<http://www.txsmartscape.com/> as of 1/29/2019)
- 185 • Promotion of rainwater harvesting activities and other activities to reduce water usage, including
186 landscape irrigation and instructions for addressing leaks.
- 187 • Researching water conservation strategies implemented elsewhere that could be of benefit to the City
188 of Galveston.
- 189 • The City of Galveston regularly shares informational material from its water supplier, the Gulf Coast
190 Water Authority, on its social media pages.
- 191 • Creating videos geared for all ages with water conservation tips to share on the City’s websites and
192 YouTube channel.

193
194 The City of Galveston is also considering retrofitting City Hall with additional infrastructure to increase water
195 reuse. If economically and logistically feasible, such retrofitting will be performed during the upcoming
196 planned City Hall renovations. Based on the success of the retrofitting, the City will provide information to
197 developers to aid in other rehabilitation projects throughout the City. Guidelines and permitting requirements
198 for water re-use within the City of Galveston will be further developed and improved.

199
200 **Section VII: Water Rate Structure**

201 The current water rate ordinance is structured using a tiered method to provide monetary incentives for water
202 conservation. The following is taken from the City of Galveston Ordinance No. 19-004:



203
204
205
206
207

City of Galveston Residential Water Rates (As of 2/1/2019)

Meter Size	Base Rate^^	Usage Tier	Volumetric Rate**
5/8" x 3/4"	\$10.78	0-500 CF	\$1.78
1"	\$24.36	500-1000 CF	\$4.45
1 1/2"	\$46.99	1000-2000 CF	\$6.22
2"	\$74.14	2000+ CF	\$9.26
3"	\$146.55	**Volumetric rate is the charge per 100 CF of monthly usage ^^Base rate is the monthly charge for water service irrespective of usage. CF = cubic feet	
4"	\$228.01		
6"	\$454.29		
8"	\$725.83		
10"	\$1,042.63		
12"	\$1,947.76		

208
209

City of Galveston Non-Residential Water Rates (As of 2/1/2019)

Meter Size	Base Rate^^	Usage Tier	Volumetric Rate**
5/8" x 3/4"	\$10.78	All metered usage	\$4.29
1"	\$24.36		
1 1/2"	\$46.99		
2"	\$74.14		
3"	\$146.55	**Volumetric rate is the charge per 100 CF of monthly usage ^^Base rate is the monthly charge for water service irrespective of usage. CF = cubic feet	
4"	\$228.01		
6"	\$454.29		
8"	\$725.83		
10"	\$1,042.63		
12"	\$1,947.76		

210
211
212

City of Galveston Sprinkler Water Rates (As of 2/1/2019)

Meter Size	Base Rate^^	Usage Tier	Volumetric Rate**
5/8" x 3/4"	\$10.78	0-500 CF	\$4.29
1"	\$24.36	500-1500 CF	\$6.44
1 1/2"	\$46.99	1500+	\$9.67
2"	\$74.14		
3"	\$146.55	**Volumetric rate is the charge per 100 CF of monthly usage ^^Base rate is the monthly charge for water service irrespective of usage. CF = cubic feet	
4"	\$228.01		
6"	\$454.29		
8"	\$725.83		
10"	\$1,042.63		
12"	\$1,947.76		

213
214
215



216 **Section VIII Other Water Conservation Measures**

217
218 VIII-1 Ordinances, Plumbing Codes or Rules on Water Conserving Fixtures

219
220 The International Plumbing Code, 2012 Edition, as amended by the City of Galveston was adopted by the
221 Galveston City Council on June 11, 2015 by reference. Unless deleted, amended, expanded or otherwise
222 changed, all provisions of such Code are applicable and binding. (Ordinance No. 15-045, § 2,)

223
224 VIII-II Reservoir System Operational Plan

225
226 The City of Galveston does not have any reservoirs. Water is purchased from the Gulf Coast Water Authority
227 or other sources. The City maintains numerous elevated and ground storage tanks, and operates these tanks
228 to maintain distribution system pressure as well as provide backup capacity for short-term events limiting
229 water delivery from GCWA.

230
231 VIII-III Considerations for Landscape Water Management Regulations (Optional)

232
233 Reserved

234
235 VIII-IV Requirement for Water Conservation Plans by Wholesale Customers

236
237 Within each of its contracts with wholesale water providers, the City of Galveston requires that each provider
238 enact and implement a Water Conservation/Drought Contingency Plan. The City of Galveston is willing to
239 review any such plans developed by wholesale water providers to whom the City provides water, in order to
240 ensure consistency with the City of Galveston Water Conservation and Drought Contingency Plans.

241
242 VIII-V Coordination with Regional Water Planning Group

243
244 In accordance with TCEQ regulations, a copy of this adopted water conservation plan will be sent to the
245 Region H water planning group. A copy of the transmittal letter to the Region H Water Planning Group is
246 included as **Appendix D**.

247
248 VIII-VI Drought Contingency Plan

249
250 The City of Galveston City Council adopted Ordinance No. ___ - ___ on ___ putting in place an updated
251 drought contingency plan. The updated drought contingency plan is incorporated into this overall water
252 conservation plan as **Appendix E**, and replaces the former drought contingency plan adopted under Ordinance
253 No. 09-048. All language set forth in Ordinance No. ___ - ___ remains enforceable and intact with the exception
254 of a conflict between it and this Water Conservation Plan. If such a conflict exists, the Drought Contingency
255 Plan takes precedent.

256
257 **Section IX: Implementation and Enforcement of the Water Conservation Plan**

258
259 A copy of Ordinance ___ - ___ amending Ordinance No. 09-048 adopted by the City of Galveston on ___ is
260 attached and made part of this plan. Ordinance No. ___ designates responsible officials to implement and
261 enforce the water conservation plan. Enforcement of Ordinance ___ becomes effective immediately as
262 adopted by the Galveston City Council on _____. Ordinance ___ is attached hereto as **Appendix F**.



Appendix A

Texas Commission on Environmental Quality
Rules on
Municipal Water Conservation Plans

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[<<Prev Rule](#)[Next Rule>>](#)

Texas Administrative Code

TITLE 30

ENVIRONMENTAL QUALITY

PART 1

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHAPTER 288WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS,
GUIDELINES AND REQUIREMENTS**SUBCHAPTER A**

WATER CONSERVATION PLANS

RULE §288.2

Water Conservation Plans for Municipal Uses by Public Water Suppliers

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for municipal uses by public water suppliers must include the following elements:

(A) a utility profile in accordance with the Texas Water Use Methodology, including, but not limited to, information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data;

(B) a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it, including, if possible, the sectors listed in clauses (i) - (vi) of this subparagraph. Any new billing system purchased by a public water supplier must be capable of reporting detailed water use data as described in clauses (i) - (vi) of this subparagraph:

(i) residential;

(I) single family;

(II) multi-family;

(ii) commercial;

(iii) institutional;

(iv) industrial;

(v) agricultural; and,

(vi) wholesale.

(C) specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD. The goals established by a public water supplier under this subparagraph are not enforceable;

(D) 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;

(E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(F) measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.);

(G) a program of continuing public education and information regarding water conservation;

(H) 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;

(I) 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 in order to optimize available water supplies; and

(J) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff indicating official adoption of the water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system;

(B) 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.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

(A) 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;

(B) 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;

(C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

(D) reuse and/or recycling of wastewater and/or graywater;

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

- (F) a program and/or ordinance(s) for landscape water management;
 - (G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and
 - (H) 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.
- (b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.
- (c) 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 every five years to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective December 6, 2012, 37 TexReg 9515

[List of Titles](#)

[Back to List](#)

[HOME](#) | [TEXAS REGISTER](#) | [TEXAS ADMINISTRATIVE CODE](#) | [OPEN MEETINGS](#)

Appendix B

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Fill out this form as completely as possible.
If a field does not apply to your entity, leave it blank.

CONTACT INFORMATION

Name of Utility: City of Galveston

Public Water Supply Identification Number (PWS ID): TX0840003

Certificate of Convenience and Necessity (CCN) Number: 11324

Surface Water Right ID Number: _____

Wastewater ID Number: 20519

Completed By: Brandon Cook Title: Asst. City Manager

Address: 823 Rosenberg, Room 203 City: Galveston Zip Code: 77550

Email: BCook@galvestontx.gov Telephone Number: 409-797-3962

Date: 2/15/2019

Regional Water Planning Group: H [Map](#)

Groundwater Conservation District: HGSD [Map](#)

Check all that apply:

- Received financial assistance of \$500,000 or more from TWDB
- Have 3,300 or more retail connections
- Have a surface water right with TCEQ

Section I: Utility Data

A. Population and Service Area Data

1. Current service area size in square miles: 42
 (Attach or email a copy of the service area map.)

2. Provide historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Service
2018	50,944	1,585	50,944
2017	50,497	1,585	50,497
2016	50,279	1,585	50,279
2015	49,765	1,585	49,765
2014	49,322	1,585	49,322

3. Provide the projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Service
2020	51,260	1,585	51,260
2030	54,643	1,585	54,643
2040	57,846	1,585	57,846
2050	60,955	1,585	60,955
2060	63,941	1,585	63,941

4. Describe the source(s)/method(s) for estimating current and projected populations.

Population projections were taken from the Region H water planning database. 2014-2018 populations were derived from the US Census Bureau website, with 2018 population extrapolated from the US Census data (provided through 2017). Wholesale water service populations were provided by City of Galveston staff, and were assumed constant over time. 86% of retail water service customers are also wastewater service customers.

The City of Galveston is a tourist destination and many travel to the island daily for work. The populations used above reflect only the permanent populations and do not represent the true number of individuals who receive water services from the City of Galveston on any given day.

B. System Input

Provide system input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Self-supplied Water in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2018	0	4,130,420,900	85,155,246	4,045,265,654	218
2017	0	4,966,698,000	85,155,246	4,881,542,754	265
2016	0	5,172,041,000	85,155,246	5,086,885,754	277
2015	0	5,235,565,000	85,155,246	5,150,409,754	284
2014	0	5,313,418,000	85,155,246	5,228,262,754	290
Historic 5-year Average	0	4,963,628,580	85,155,246	4,878,473,334	267

C. Water Supply System (Attach description of water system)

1. Designed daily capacity of system 44,500,000 gallons per day.
2. Storage Capacity:
 Elevated 6,500,000 gallons
 Ground 38,000,000 gallons
3. List all current water supply sources in gallons.

Water Supply Source	Source Type*	Total Gallons
Gulf Coast Water Authority	Contract	21,000,000
Alta Loma Emergency Wells	Ground	10,300,000
	Choose One	

*Select one of the following source types: *Surface water, Groundwater, or Contract*

4. If surface water is a source type, do you recycle backwash to the head of the plant?
 Yes _____ estimated gallons per day
 No

D. Projected Demands

1. Estimate the water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demands (gallons)
2019	51,102	4,299,339,015
2020	51,260	4,277,544,480
2021	51,598	4,246,902,385
2022	51,936	4,227,330,720
2023	52,274	4,207,142,205
2024	52,612	4,201,657,454
2025	52,950	4,178,443,350
2026	53,288	4,166,215,704
2027	53,626	4,153,494,578
2028	53,964	4,151,623,205

2. Describe sources of data and how projected water demands were determined. Attach additional sheets if necessary.

Population numbers were interpolated from the population projections developed during the current Region H water planning process and provided in Table A3.

Water demands were based on City of Galveston's Baseline, 5-yr, and 10-yr total water usage goals of 233 GPCD, 218.2 GPCD, and 208.2 GPCD, respectively. These GPCD goals were set based on the City's planned methods to lessen water losses over the next 20-years. Note: in 2017, City of Galveston identified and repaired a major water line leak, which they estimate to have accounted for 807 million gallons over the first 11 months of 2017. The baseline 233 GPCD number reflects adjustments in historical City of Galveston water usage to reflect the repair of this leak, which the city expects was occurring for many years prior to the leak discovery. Water demand numbers currently used in the Region H water plan for the City of Galveston DO NOT reflect the repair of this leak, and are therefore too high.

Water usage rates were interpolated by year based on the City's GPCD goals. These rates were then multiplied by the population numbers shown above, and then multiplied by 365 days or 366 days (when appropriate) to derive an expected future water use rate by year.

As shown, the City of Galveston expects to use less water over the next 10 years, even though the City population is expected to increase. This is primarily due to its increased investment and attention in its non-revenue water mitigation program.

E. High Volume Customers

- List the annual water use, in gallons, for the five highest volume **RETAIL customers**. Select one of the following water use categories to describe the customer; choose Residential, Industrial, Commercial, Institutional, or Agricultural.

Retail Customer	Water Use Category*	Annual Water Use	Treated or Raw
UTMB	Industrial	374,149,600	Treated
Port of Galveston/ Wharves	Industrial	79,254,346	Treated
Gulf Sulphur Services Lts.	Institutional	59,313,791	Treated
Texas A&M University	Industrial	54,142,507	Treated
Galveston County	Institutional	33,991,481	Treated

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use.](#)

- If applicable, list the annual water use for the five highest volume **WHOLESALE customers**. Select one of the following water use categories to describe the customer; choose Municipal, Industrial, Commercial, Institutional, or Agricultural.

Wholesale Customer	Water Use Category*	Annual Water Use	Treated or Raw
Jamaica Beach - Village	Municipal	69,735,651	Treated
Treasure Island Mud	Municipal	11,965,839	Treated
Tiffany Water Co.	Commercial	3,453,756	Treated
	Choose One		Treated
	Choose One		Choose One

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use.](#)

F. Utility Data Comment Section

Provide additional comments about utility data below.

See Exhibit 1, which is the the description of the City's utility system as requested in Sec. I., Subsection C.

Section II: System Data

A. Retail Connections

- List the active retail connections by major water use category.

Water Use Category*	Active Retail Connections			
	Metered	Unmetered	Total Connections	Percent of Total Connections
Residential – Single Family	20,295	0	20,295	82%
Residential – Multi-family (units)	1,960	0	1,960	8%
Industrial	137	0	137	1%
Commercial	2,241	0	2,241	9%
Institutional	157	0	157	1%
Agricultural	0	0	0	0%
TOTAL	24,790	0	24,790	

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use.](#)

- List the net number of new retail connections by water use category for the previous five years.

Water Use Category*	Net Number of New Retail Connections				
	2018	2017	2016	2015	2014
Residential – Single Family	31	-2,253	-81	486	874
Residential – Multi-family (units)	-3	0	-893	93	1,974
Industrial	75	-2	-303	-49	416
Commercial	-13	2,053	-281	-71	355
Institutional	-58	117	29	-760	416
Agricultural	0	0	0	0	0
TOTAL	32	-85	-1,529	-301	4,035

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use.](#)

B. Accounting Data

For the previous five years, enter the number of gallons of RETAIL water provided in each major water use category.

Water Use Category*	Total Gallons of Retail Water				
	2018	2017	2016	2015	2014
Residential - Single Family	1,108,625,012	1,057,917,396	1,093,290,264	1,139,534,631	1,185,951,659
Residential – Multi-family	102,913,580	98,507,860	97,189,136	95,049,108	97,070,682
Industrial	566,800,740	499,069,340	441,020,800	622,530,480	643,618,874
Commercial	1,179,409,748	1,185,588,602	1,186,865,064	1,206,230,784	1,167,431,740
Institutional	239,315,868	215,480,848	203,696,108	199,946,384	184,892,106
Agricultural	0	0	0	0	0
TOTAL	3,197,064,948	3,056,564,046	3,022,061,372	3,263,291,387	3,278,965,061

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

C. Residential Water Use

For the previous five years, enter the residential GPCD for single family and multi-family units.

Water Use Category*	Residential GPCD				
	2018	2017	2016	2015	2014
Residential - Single Family	65	63	65	68	71
Residential – Multi-family	65	63	65	68	71

D. Annual and Seasonal Water Use

- For the previous five years, enter the gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Retail Water				
	2018	2017	2016	2015	2014
January	306,632,000	379,890,000	386,703,000	383,753,000	362,042,000
February	256,056,000	340,709,000	368,879,000	350,908,000	335,401,000
March	322,099,000	402,737,000	408,885,000	391,747,000	394,167,000
April	331,602,000	410,773,000	396,052,000	397,410,000	412,143,000
May	397,139,000	456,610,000	413,710,000	439,766,000	477,890,000
June	425,241,000	451,430,000	436,856,000	461,620,000	506,387,000
July	437,239,000	510,621,000	543,645,000	561,691,000	533,246,000
August	433,099,000	472,860,000	496,793,000	556,834,000	528,424,000
September	341,203,000	446,613,000	448,880,000	444,642,000	465,947,000
October	333,151,000	437,907,000	459,589,000	452,592,000	503,088,000
November	279,460,000	369,498,000	418,167,000	400,961,000	412,077,000
December	267,549,000	287,050,000	393,917,000	393,641,000	382,606,000
TOTAL	4,130,470,000	4,966,698,000	5,172,076,000	5,235,565,000	5,313,418,000

2. For the previous five years, enter the gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Retail Water				
	2018	2017	2016	2015	2014
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
TOTAL	0	0	0	0	0

3. Summary of seasonal and annual water use.

Water Use	Seasonal and Annual Water Use					Average in Gallons
	2018	2017	2016	2015	2014	
Summer Retail (Treated + Raw)	1,295,579,000	1,434,911,000	1,477,294,000	1,580,145,000	1,568,057,000	1,471,197,200 5yr Average
TOTAL Retail (Treated + Raw)	4,130,470,000	4,966,698,000	5,172,076,000	5,235,565,000	5,313,418,000	4,963,645,400 5yr Average

E. Water Loss

Provide Water Loss data for the previous five years.

$Water\ Loss\ GPCD = [Total\ Water\ Loss\ in\ Gallons \div Permanent\ Population\ Served] \div 365$

$Water\ Loss\ Percentage = [Total\ Water\ Loss \div Total\ System\ Input] \times 100$

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2018	929,246,172	50	23%
2017	1,894,342,926	103	39%
2016	2,139,288,308	117	42%
2015	1,942,867,489	107	38%
2014	2,003,302,479	111	38%
5-year average	1,781,809,475	98	36%

F. Peak Water Use

Provide the Average Daily Water Use and Peak Day Water Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2018	11,318,468	20,400,000	1.80
2017	13,584,954	20,400,000	1.50
2016	14,001,307	19,410,000	1.39
2015	14,341,147	21,718,000	1.51
2014	14,557,305	21,355,000	1.47

G. Summary of Historic Water Use

Water Use Category	Historic 5-year Average	Percent of Connections	Percent of Water Use
Residential SF	1,117,063,792	82%	0%
Residential MF	98,146,073	8%	0%
Industrial	554,608,047	1%	0%
Commercial	1,185,105,188	9%	0%
Institutional	208,666,263	1%	0%
Agricultural	0	0%	0%

H. System Data Comment Section

Provide additional comments about system data below.

The city of Galveston does not collect and track certain data requested in this utility profile. For example, we perform monthly calculations of water usage, yet do not look at daily usage records. We also don't record populations served from single family vs. multi-family residential connections, only residential populations as a whole. As such, answers provided above should be regarded only as estimates based on assumptions we've made (using the data we collect).

Data provided in Section D above is the total amount of water delivered to Galveston from the Gulf Coast Water Authority. It is not the total amount of RETAIL water delivered by Galveston to its customers. Section B above IS the total amount of retail water provided to the City's customers.

Section III: Wastewater System Data

If you do not provide wastewater system services then you have completed the Utility Profile. Save and Print this form to submit with your Plan. Continue with the [Water Conservation Plan Checklist](#) to complete your Water Conservation Plan.

A. Wastewater System Data (Attach a description of your wastewater system.)

1. Design capacity of wastewater treatment plant(s): 14,875,000
gallons per day.
2. List the active wastewater connections by major water use category.

Water Use Category*	Active Wastewater Connections			
	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	19,381		19,381	91%
Industrial	82		82	0%
Commercial	1,768		1,768	8%
Institutional	118		118	1%
Agricultural	0		0	0%
TOTAL	21,349	0	21,349	

2. What percent of water is serviced by the wastewater system? 86%
3. For the previous five years, enter the number of gallons of wastewater that was treated by the utility.

Month	Total Gallons of Treated Wastewater				
	2018	2017	2016	2015	2014
January	241,382,500	168,980,000	247,700,000	333,880,000	205,516,000
February	192,603,000	159,811,000	176,930,000	216,500,000	190,777,000
March	195,015,000	174,342,000	231,590,000	330,409,000	209,166,000
April	190,425,000	159,340,000	292,700,000	346,792,000	201,511,000
May	181,995,000	183,567,000	343,470,000	283,240,000	212,162,000
June	211,076,000	308,172,000	358,070,000	309,320,000	235,786,000
July	237,729,000	263,195,000	214,480,000	259,540,000	231,583,000
August	205,188,000	373,743,000	296,500,000	247,440,000	228,614,000
September	538,342,000	229,936,000	245,680,000	354,510,000	311,740,000
October	403,692,000	210,712,000	204,960,000	316,470,000	252,130,000
November	276,394,000	164,501,000	181,850,000	365,560,000	228,780,000
December	236,531,000	244,963,400	299,650,000	304,000,000	278,030,000
TOTAL	3,110,372,500	2,641,262,400	3,093,580,000	3,667,661,000	2,785,795,000

4. Can treated wastewater be substituted for potable water?

Yes No

B. Reuse Data

1. Provide data on the types of recycling and reuse activities implemented during the current reporting period.

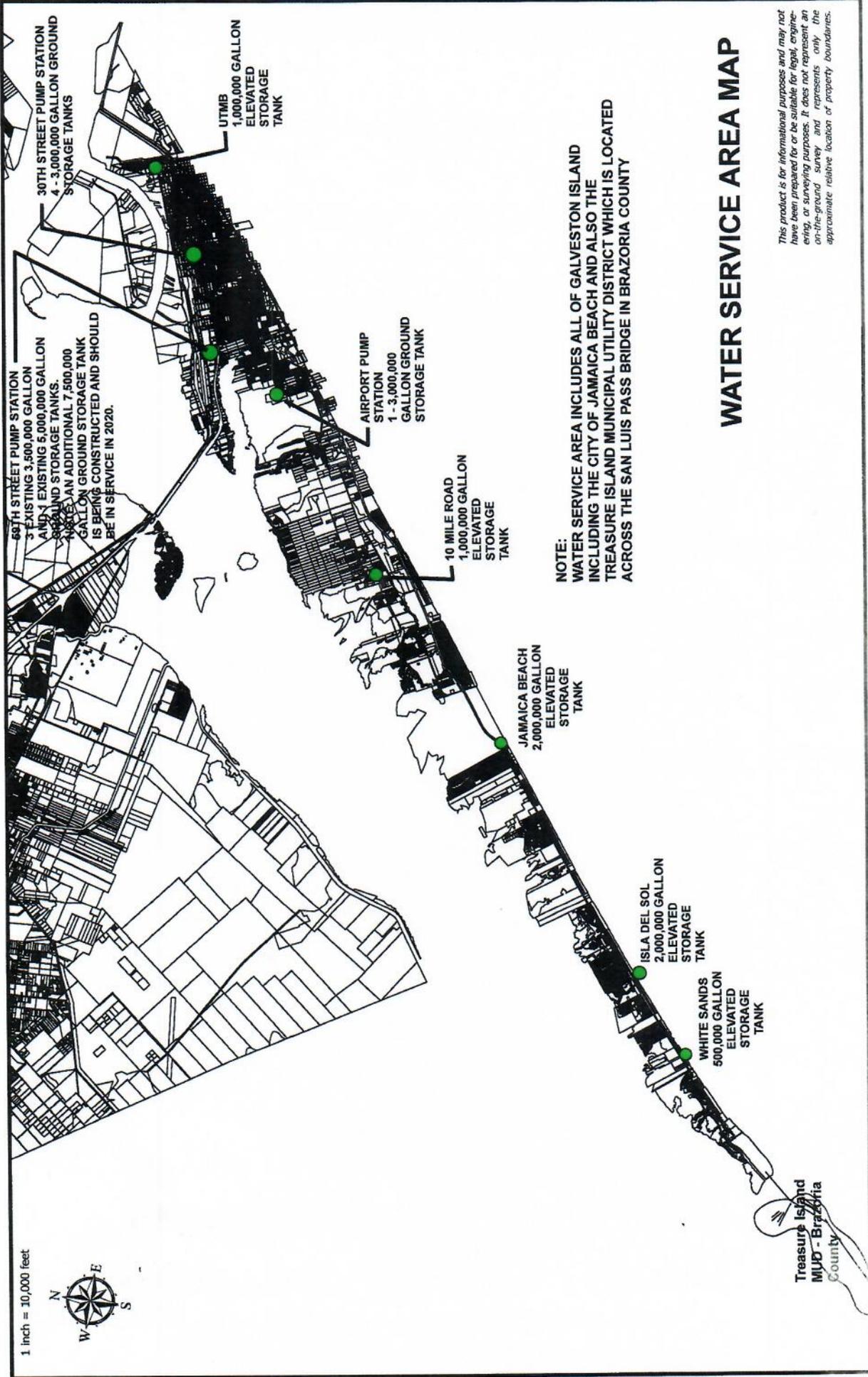
Type of Reuse	Total Annual Volume (in gallons)
On-site irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (parks, golf courses)	201,001,651
Agricultural	0
Discharge to surface water	0
Evaporation pond	0
Other	0
TOTAL	201,001,651

C. Wastewater System Data Comment

Provide additional comments about wastewater system data below.

See Exhibit 1

You have completed the Utility Profile. Save and Print this form to submit with your Plan. Continue with the [Water Conservation Plan Checklist](#) to complete your Water Conservation Plan.



1 inch = 10,000 feet



NOTE:
 WATER SERVICE AREA INCLUDES ALL OF GALVESTON ISLAND INCLUDING THE CITY OF JAMAICA BEACH AND ALSO THE TREASURE ISLAND MUNICIPAL UTILITY DISTRICT WHICH IS LOCATED ACROSS THE SAN LUIS PASS BRIDGE IN BRAZORIA COUNTY

WATER SERVICE AREA MAP

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

Treasure Island
 MUD - Brazoria
 County



Exhibit 1:

Water System Description

Section 1, Part C of TWDB Form No. 1965-R (Utility Profile for Retail Water Supplier) requires a description of the water system.

The City of Galveston obtains treated water via pipeline from the Gulf Coast Water Authority (GCWA). The City of Galveston maintains a contract for up to 21.0 MGD from the Gulf Coast Water Authority. In 2018, the City of Galveston, on average, used 11.3 MGD of water provided by GCWA.

The City of Galveston also maintains the Alta Loma wellfield, which can provide up to 10.3 MGD of locally-sourced groundwater. The City intends to utilize this source only under extreme drought conditions when water from GCWA is not sufficiently available. Capital Improvement projects being done on the well fields include well disinfection and flushing for 7 wells and well liner rehabilitation for 2 wells.

The City of Galveston maintains 5 elevated storage tanks to store and aid in the distribution of water throughout the service area. Tank names and sizes are provided in the table below. The total elevated storage capacity for the City of Galveston is 6.5 Million Gallons.

Table 1 - City of Galveston Elevated Storage Tanks

Name	Capacity
UTMB Elevated Storage Tank	1,000,000 gallons
10 Mile Road Elevated Storage Tank	1,000,000 gallons
Jamaica Beach Elevated Storage Tank	2,000,000 gallons
Isla Del Sol Elevated Storage Tank	2,000,000 gallons
White Sands Elevated Storage Tank	500,000 gallons
Total Storage Capacity	6,500,000 gallons

The City also maintains numerous ground storage tanks as detailed in Table 2 below. As shown in Table 2, the combined storage of the currently operational tanks is 15 Million Gallons. The combined storage capacity from ground tanks will more than double when four additional existing tanks are refurbished and brought back online prior to the Summer of 2019. The City has also commenced construction of a 7.5 Million gallon tank at its 59th street pump station. This tank will be brought online in 2020.



Table 1 - City of Galveston Ground Storage Tanks

Name	Capacity	Current Status	Expected Operational Date
30 th Street Pump Station	4 x 3,000,000 gallons	Operational	Now
Airport Pump Station	1 x 3,000,000 gallons	Operational	Now
59 th Street Pump Station Out-of-Service #1	3 x 3,500,000 gallons	Offline	Summer 2019
59 th Street Pump Station Out-of-Service #2	1 x 5,000,000 gallons	Offline	Summer 2019
59 th Street Pump Station	1 x 7,500,000 gallons	Under Construction	2020
Current Capacity		15,000,000 gallons	
Summer 2019 Capacity		30,500,000 gallons	
Post 2020 Capacity		38,000,000 gallons	

With both the elevated and ground storage tanks combined, the City of Galveston currently maintains a total storage capacity of 21,500,000 gallons, or 190% of its average daily usage for 2018. Upon completion of the existing tank refurbishment and construction of the new tank at the 59th street pump station, the City will have a combined storage capacity of 44,500,000 gallons, or 394% of its average daily usage for 2018.

The City of Galveston currently operates 5 wastewater treatment facilities. The Main Wastewater Treatment Facility is located at 5200 Port Industrial Boulevard. It utilizes an activated sludge process to treat the wastewater, operates under TPDES Permit No. WQ0010688-001 and has the EPAID No. TX0047309. Wastewater discharges from this facility enters Lower Galveston Bay, segment No. 2439.

The Airport Wastewater Treatment Facility is located at 7618 Mustang Drive. This facility utilizes an activated sludge process, operates under TPDES Permit No. WQ0010688-002 and has the EPAID No. TX0027791. Wastewater discharges from this facility enter into a tidal canal which connects Lake Madeline to Offatts Bayou, then to Galveston West Bay (Segment No. 2424).

The Terramar Wastewater Treatment Facility is located approximately 4.5 miles east of the San Louis Bridge and 1,900 feet west of the San Louis Pass Road (FM 3005) in Galveston County.

This facility utilizes an activated sludge process and sequenced batch reactor, operates under TPDES Permit No. WQ0010688-005 and has the EPAID No. TX0066125. Wastewater discharges from this facility travel via pipeline to Galveston West Bay (Segment No. 2424).



The Pirates Beach Wastewater Treatment Facility is located approximately 0.5 miles north of Steward Road and 0.25 miles east of 12-Mile road on Galveston Island in Galveston County. This facility utilizes an activated sludge process, operates under TPDES Permit No. WQ0011477-001 and has the EPAID No. TX0126977. Wastewater discharges from this facility travel via pipeline to irrigation ponds within the Galveston Country Club Golf Course.

The Seawolf Park Wastewater Treatment Facility is located in Seawolf Park on Pelican Island approximately 3.5 miles northeast of the Pelican Island Bridge in Galveston County. This facility utilizes an activated sludge process, operates under TPDES Permit No. WQ0010688-004 and has the EPAID No. TX0063665. Wastewater discharges from this facility enter Lower Galveston Bay, Segment No. 2439.



Water Conservation Plan Goals Table
TWDB Form No.1964
Revised 12/14/2012 1:53 PM

WATER CONSERVATION PLAN 5- AND 10-YR GOALS FOR WATER SAVINGS

Facility Name: City of Galveston
Water Conservation Plan Year: 2019

	Historic 5yr Average	Baseline	5-yr Goal for year <u>2024</u>	10-yr Goal for year <u>2029</u>
Total GPCD ¹	271.2	233.3	218.2	208.2
Residential GPCD ²	66.4	66.4	66.4	66.4
Water Loss (GPCD) ³	98.8	55.4	40.6	30.6
Water Loss (Percentage) ⁴	36 %	24 %	19 %	15 %

1. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
2. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
3. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
4. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

Region H Water Planning Group
C/O Mark Evans
N. Harris Co. Regional Water Authority
PO Box 2342
Trinity, TX 75862
Ph. (281) 440-3924
mevans@nhcrwa.com

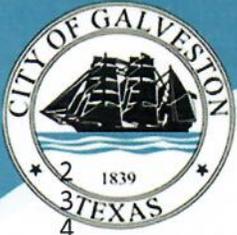
 , 2019

Re: City of Galveston Water Conservation Plan

Dear Chairman Evans,

Attached is a copy of the City of Galveston Water Conservation Plan filed with the Texas Water Development Board in accordance with TCEQ rules governing development of water conservation plans for public water suppliers in Title 30, Part 1, Chapter 288, Subchapter A, Section 288.2 of the Texas Administrative Code. Also included is a copy of Ordinance passed by the City Council of Galveston on , 2019.

Sincerely,



Appendix E:

Drought Contingency Plan for the City of Galveston

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the City of Galveston (the “City”) hereby adopts the following Drought Contingency Plan (the “Plan”). The Plan includes regulations and restrictions on the delivery and consumption of water within the jurisdiction of the City of Galveston.

Water uses regulated or prohibited under this Plan are considered to constitute a waste of water which subjects the offender(s) to penalties as defined in Section X of this Plan.

Section II: Public Involvement

Opportunity for the public and wholesale water customers to provide input into the preparation of the Plan was provided by the City of Galveston by means of scheduling and providing public notice of a public meeting, scheduled by the City Secretary, to accept input on the Plan. A public meeting regarding this Plan was held on **February 28, 2019** at 823 Rosenberg Dr, City Council Chambers, and the City of Galveston made the draft plan available for review (via the City website) one week prior to the public meeting.

Section III: Public Education

Successful implementation of the Plan depends on effective communication with the public. The City must exchange ideas with the public to understand its needs and determine what water uses are most essential. The public must believe that the measures adopted are credible. A public awareness and education campaign will be successful if it conveys the following:

1. The water management condition is real
2. Reductions in water demand are necessary
3. The adopted measures realistically correspond to the severity of the situation.
4. All customers share the inconvenience during water shortages
5. The City is effectively managing this existing water supply.

To accomplish these objectives, the City will take the following steps during drought or water emergency conditions:



- 44 • Alert the public and keep the public regularly informed through local media and the City’s website
- 45 and social media
- 46 • Initiate public discussions when appropriate
- 47 • Promote public understanding of the Plan and convey restrictions required should situations
- 48 worsen.
- 49 • Educate the public about ways to use water more efficiently
- 50 • Gather public support for the Plan’s actions
- 51 • Highlight the leadership role of the city government to save water
- 52 • Work to gather support from various forms of news media to successfully keep the public informed.
- 53 Once initiated, and especially during stages 3, 4, and 5, the City and the news media will provide
- 54 regular alerts to successfully implement public awareness and education through the following
- 55 options:
- 56

57 **News Media:**

- 58 • Radio, television, internet, and public service announcements
- 59 • Newspaper and other local publication announcements
- 60 • Interviews on radio and television programs, when appropriate
- 61 • Other radio and television pieces
- 62 • Newspaper and local magazine articles
- 63 • Press releases
- 64 • Paid or donated advertising
- 65

66 **Communications:**

- 67 • Utilize the “one call reaches all” solution to inform subscribers of the situation.
- 68 • Citizen hotline (number to be included in all communications)
- 69 • Communication to media websites of the current stage and applicable restrictions in water use.
- 70 • Telephone and written notifications to large water use customers when applicable.
- 71 • Water bill inserts or messages
- 72 • Distribution of fact sheets, brochures, and pamphlets
- 73 • Mail distinctive-looking post cards to customers beginning in Stage 2, conveying internal water
- 74 restrictions that apply during this stage as well as a reminder to stay tuned to the media for
- 75 mandatory restrictions during subsequent possible stages.
- 76 • Posting of signs and notices (e.g. city and county buildings, post offices)
- 77 • Billboards (if time and availability allow)
- 78 • Training of City customer service representatives
- 79 • Post current Plan stage and applicable restrictions to the City’s website
- 80

81 At all times, including during periods when water usage restrictions are not in place per this Plan, the City

82 will instigate community involvement activities designed to educate the public regarding water usage and

83 conservation needs. Such community involvement measures may include, but are not limited to:

- 84 • Public meetings and hearings
- 85 • Public education seminars
- 86 • City employee training
- 87 • School programs
- 88 • Organized contests (e.g. poster or T-shirt design, showing new ideas related to water savings)
- 89 • Community outreach programs



- 90 • Education and outreach from community volunteers
- 91 • Formation of citizen’s committees or other public forms

92
93
94

Wholesale Customer Education

95 The City will periodically provide wholesale water customers with information about the Plan, including
96 conditions that initiate each stage and the drought response measures to be implemented. Upon Plan
97 adoption, the City will schedule meetings with each wholesale customer to describe the plan and
98 communication arrangements between the customer and the City to be implemented should the City initiate
99 water usage restrictions under the Plan.

100

Section IV: Coordination with Regional Water Planning Groups

101
102

103 The City’s water service area is located within the Region H water planning area, and the City’s Director
104 of Municipal Utilities has provided a copy of the Plan to the Region H water planning group and to the
105 City’s water supplier, the Gulf Coast Water Authority (GCWA). Copies of the Plan transmittal letters to
106 the Region H water planning group and the GCWA are provided in Appendix A.

107

Section V: Authorization

108
109

110 The Director of Municipal Utilities (“Director”) or his/her designee, is hereby authorized and directed to
111 implement and administer, at the direction of the City Manager, the applicable provisions of this Plan upon
112 determination that such implementation is necessary to protect public health, safety, and welfare.

113

Section VI: Plan Application & Notice Procedures

114
115

116 The provisions of this Plan shall apply to all entities using water provided by the City of Galveston. The
117 terms “person” and “customer” as used in the Plan include individuals, corporations, partnerships,
118 associations, and all other legal entities. When the Director of Municipal Utilities or a designee initiates or
119 terminates response stages under this Plan, he/she shall immediately notify the public by means of
120 announcements in local media. Update releases will be on at least a daily basis during implementation of
121 this Plan, unless otherwise specified for specific responses listed below.

122

Section VII: Recommended Residential Water Conservation & Demand Reduction Measures

123
124

125 During any stage drought response, efforts must be made to reduce water usage and minimize water
126 demand. The following means of conserving water and minimizing water usage are **recommended**. These
127 measures are **voluntary** and are not enforceable by the City of Galveston.

128

- 129 • Limit showers to 5, 4, 3, and 2 minutes or less for Stage 2, 3, 4, and 5 drought responses,
130 respectively.
- 131 • Turning off showers while lathering hair and body, and only turning on showers to rinse.
- 132 • Capturing in buckets water from showers prior to showers being warm; Re-using the water for dish
133 cleaning, toilet flushing, or landscape irrigation.
- 134 • Re-using cooking water to water plants, or to rinse/wash dishes
- 135 • Delay clothes washing until full loads are available. Also limit clothes laundering to Tuesdays and
136 Thursdays for customers with **Property in East Galveston**, and Wednesdays and Fridays for



- customers with **Property in West Galveston**
- Utilize hand sanitizers rather than washing hands with potable water.
- Utilize dry shampoos and wet-wipes to clean your body and decrease the frequency of showering.
- Cook larger meals and save leftovers for future meals, thus reducing the frequency of needing water for cooking and cleaning of cookware.
- Rainwater harvesting using rain barrels, with the water later used for landscape irrigation.

Voluntary Water Conservation Measures – All Drought Stages

#1	Limit showers to 5, 4, 3, and 2 minutes or less for Stage 2, 3, 4, and 5 drought responses, respectively:	
#2	Turn off showers while lathering hair and body, and only turning on showers to rinse	
#3	Capture in buckets water from showers prior to showers being warm; Re-use the water for dish cleaning, toilet flushing, or landscape irrigation	
#4	Re-use cooking water to water plants, or to rinse/wash dishes	
#5	Delay clothes washing until full loads are available. Limit clothes laundering to:	
	For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
	Tuesdays & Thursdays	Wednesdays & Fridays
#6	Utilize hand sanitizers rather than washing hands with potable water	
#7	Utilize dry shampoos and wet-wipes to clean your body and decrease the frequency of showering.	
#8	Cook larger meals and save leftovers for future meals, thus reducing the frequency of needing water for cooking and cleaning of cookware	
#9	Harvest rainwater using rain barrels, with the water later used for landscape irrigation	

Section VIII: Definitions

For the purposes of this Plan, the following definitions shall apply. Defined terms are shown in **BOLD** fonts throughout the Plan.

- Gulf Coast Water Authority (GCWA)** – the primary water supplier for the City of Galveston, whose water allocation decisions directly affect water availability under the City of Galveston’s contract for water supplies. Water conservation procedures within the GCWA drought contingency



155 plan directly affect water availability for the City of Galveston, and the Director of Municipal
156 Utilities or a designee may implement City of Galveston drought stage responses in direct accord
157 with those implemented by GCWA.

158 • **Historical Monthly Average Water Usage** - the computed monthly average usage for the City of
159 Galveston based on actual usage during the same month during the three previous calendar years,
160 excluding any reductions in usage as a result of implementing a Stage Response measure
161 pursuant to this Plan.

162 • **Aesthetic Water Use:** water use for ornamental or decorative purposes such as in fountains,
163 reflecting pools, and water gardens.

164 • **Commercial and Institutional Water Use:** water use which is integral to the operations of
165 commercial entities, non-profit establishments, and governmental entities. These entities include
166 but are not limited to retail establishments, large housing complexes, hotels/ motels and
167 entertainment complexes, Port of Galveston entities, restaurants, and office buildings.

168 • **Conservation:** those practices, techniques, and technologies that reduce the consumption of water,
169 reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling
170 and reuse of water so that a supply is conserved.

171 • **Retail Customer:** any person or entity purchasing drinking water from the City of Galveston for
172 use or consumption.

173 • **Wholesale Customer:** any entity purchasing potable water from the City of Galveston for resale
174 or redistribution.

175 • **Domestic Water Use:** commonly known as “drinking water,” used for personal needs or sanitary
176 purposes such as drinking, bathing, heating, cooking, sanitation, or cleaning.

177 • **Property in East Galveston:** property located east of an extended line running north and south
178 along the center of 103rd street. Property in East Galveston is located behind the seawall.

179 • **Property in West Galveston:** property located west of an extended line running north and south
180 along the center of 103rd street. Property in West Galveston is not located behind the seawall.

181 • **Industrial Water Use:** the use of water in processes designed to convert materials of lower value
182 into forms having greater usability and value.

183 • **Landscape Irrigation Use:** water used for the irrigation and maintenance of landscaped areas,
184 whether publicly or privately owned, including but not limited to residential and commercial lawns,
185 gardens, golf courses, parks, right-of-ways, and medians. Both potable and non-potable water may
186 be used for this purpose.

187 • **Non-Essential Water Use:** the use of potable water for activities deemed beneficial yet non-
188 essential for the maintenance of public health, safety and welfare for the City of Galveston. Non-
189 essential water use will be regulated or prohibited, depending on implementation stages of this
190 Plan. The Director of Municipal Utilities may designate whether a water usage activity results in
191 Non-Essential Water Use, and may modify such designations from time to time. The following
192 water use activities are considered as Non-Essential Water Use activities for the purposes of this
193 Plan: :

194 ○ irrigation of landscape areas, including parks, schools, athletic fields, and golf courses,
195 except otherwise provided under this Plan;

196 ○ washing any motor vehicle, motorbike, boat, trailer, airplane or other vehicle, other than in
197 a commercial car wash, if not necessary for the protection of public health, safety, and
198 welfare;

199 ○ washing any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-
200 surfaced areas;

201 ○ washing buildings or structures for purposes other than immediate fire protection;



- 202 ○ flushing gutters or allowing water to run or accumulate in any gutter or street;
- 203 ○ filling, refilling, or adding to any indoor or outdoor swimming pools or jacuzzi-type pools;
- 204 ○ filling, refilling, or adding to any fountain or pond for aesthetic or scenic purposes except
- 205 where necessary to support aquatic life;
- 206 ○ using water hydrants for construction purposes or any other purposes other than
- 207 firefighting, hydrant flushing and street cleaning;
- 208 ○ water loss because a responsible party has not repaired controllable leak(s) within a
- 209 reasonable period after having been given notice directing the repair of such leak(s).

210
211 **Section IX: Drought Response Stage Criteria and Response Actions**

212
213 The Director of Municipal Utilities, or his/her designee, under the direction of the City Manager, shall
214 monitor water supply and demand conditions on a daily basis and shall determine when conditions warrant
215 initiation or termination of each stage of the Plan.

216
217 The triggering criteria and response measures described below are based on City staff experience obtained
218 through managing water supplies through recent drought periods, including the most recent 2011 extreme
219 single-year drought for the Brazos River basin. Triggering criteria and response measures are also based on
220 similar criteria and measures utilized by the GCWA.

221
222 **Section VIII.1 - Stage 1 Response (Mild Water Shortage; TCEQ “Watch” Level)**

223
224 A Stage 1 Response may be triggered when the Director of Municipal Utilities finds that the Response
225 Conditions warrant the declaration of a Stage 1 Response. The Director of Municipal Utilities will consider
226 declaring a Stage 1 Response when at least one of the following Response Conditions is satisfied:

227
228 **Response Conditions:**

- 229
- 230 1. The GCWA has initiated a Stage 1 Response under its Drought Contingency Plan.
- 231 2. Total water demand exceeds 80% of deliverable capacity for four consecutive days
- 232 3. Storage in City water reservoirs/storage tanks falls below 80% of capacity for four consecutive
- 233 days
- 234 4. Single day demand exceeds 85% of deliverable capacity in a normal demand environment.
- 235 5. Storage in City water reservoirs/storage tanks falls below 70% of capacity for a single day

236
237 A Stage 1 Response may be terminated by the Director of Municipal Utilities when the Response
238 Conditions that triggered the initiation of a Stage 1 Response no longer prevail.

239 **Response Measures:**

240 The goal for water use under Stage 1 is a reduction of 5% of water use compared to **Historical Monthly**
241 **Average Water Usage** as calculated by GCWA and approved by the City. The Director of Municipal
242 Utilities may implement of any of the following actions deemed necessary, and may implement other
243 appropriate actions not listed below:

244
245 **General Measures:**

- 246 ● Notify all **Retail and Wholesale Customers** that a Stage 1 Response condition exists;
- 247 ● Request voluntary reductions in water use by all **Retail Customers and Wholesale Customers**;
- 248 ● Increase public awareness of drought or system conditions and measures to reduce demand



- 249
- 250 **Supply Management Measures:**
- 251 • Monitor water supply and demand on a constant basis and notify users by press releases of
 - 252 conditions as appropriate
 - 253 • Notify water consumers regarding the need to reduce their usage on a voluntary basis by at least
 - 254 5%.
 - 255 • Distribute water to City reservoirs based on demand in specific service areas
 - 256 • Defer or delay City maintenance services (e.g. flushing of water mains, watering of City property)
 - 257 • Utilize reclaimed, non-potable water for irrigation purposes, where feasible
 - 258 • Explore alternative sources of potable water
 - 259 • Notify **Wholesale Customers** of reductions in available water and advise implementation of the
 - 260 **Wholesale Customer's** drought contingency plan.

261

262 **Stage 1 Voluntary Demand Reduction Measures**

Issue press releases and/or published notices in all media, requesting practice of water conservation activities, and minimization or discontinuance of all Non-Essential Water Uses .	
Request, via press releases and/or published notices, that Retail Customers voluntarily limit Landscape Irrigation Use :	
For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
Tuesdays & Thursdays	Wednesdays & Fridays
before 10:00am OR after 8:00pm	before 10:00am OR after 8:00pm

263

264 **Section VIII.2 - Stage 2 Response (Moderate Water Shortage; TCEQ “Concern” Level)**

265

266 A Stage 2 Response may be triggered when the Director of Municipal Utilities finds that the Response

267 Conditions warrant the declaration of a Stage 2 Response. The Director of Municipal Utilities will consider

268 declaring a Stage 2 Response when at least one of the following Response Conditions is satisfied:

269

270 **Response Conditions:**

271

- 272 1. The **GCWA** has initiated a Stage 2 Response under its Drought Contingency Plan.
 - 273 2. Total water demand exceeds 85% of deliverable capacity for four consecutive days
 - 274 3. Storage in City water reservoirs falls below 70% of capacity for four consecutive days
 - 275 4. Single day demand exceeds 90% of deliverable capacity in a normal demand environment.
 - 276 5. Storage in City water reservoirs falls below 65% of capacity for a single day
- 277

278 A Stage 2 Response may be terminated by the Director of Municipal Utilities when the Response

279 Conditions that triggered the initiation of a Stage 2 Response no longer prevail. Excessive water usage

280 under Stage 2 Conditions will result in surcharges on all City of Galveston water bills.

281 **Response Measures:**

282

283 The goal for water use under Stage 2 is a reduction of **10%** of water use compared to the **Historical Monthly**

284 **Average Water Usage** as calculated by **GCWA** and approved by the City. The Director of Municipal

285 Utilities may implement any of the following actions deemed necessary, and may implement other

286 appropriate actions not listed below. Within five (5) days of implementing (or terminating) mandatory water

287 use restrictions, the Director of Municipal Utilities will notify the Texas Commission on Environmental



288 Quality (TCEQ). Notifications will be submitted to the TCEQ Public Drinking Water Section Drought
 289 Team, and will be submitted via the TCEQ-required online form, currently available at:
 290 [https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form)
 291 [plan-reporting-form](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form). Assistance in making notifications may be obtained via e-mail to wcp@tceq.texas.gov
 292 or via phone at 512-239-4691.

293
 294 **General Measures:**

- 295 • Notify all **Retail** and **Wholesale Customers** that a Stage 2 Response condition exists;
- 296 • Require reductions in water use by all **Retail Customers** and **Wholesale Customers**;
- 297 • Increase public awareness of drought or system conditions and measures to reduce demand

298
 299 **Supply Management Measures:**

- 300 • Monitor water supply and demand on a constant basis and notify users by press releases of
- 301 conditions as appropriate
- 302 • Reduce distribution pressure in 10% increments as possible and appropriate to attempt to stabilize
- 303 reservoir storage levels-
- 304 • Meet with customers and develop water usage reduction plans
- 305 • Distribute water to City reservoirs based on demand in specific service areas
- 306 • Defer or delay City maintenance services (e.g. flushing of water mains, watering of City property)
- 307 • Initiate usage of reclaimed, non-potable water for **Landscape Irrigation Use**, wherever feasible.
- 308 • Explore alternative sources of potable water
- 309 • Notify **Wholesale Customers** of reductions in available water and advise implementation of the
- 310 **Wholesale Customer’s** drought contingency plan.

311
 312
 313
 314
 315 **Stage 2 Mandatory Demand Reduction Measures**

#1	Limit Landscape Irrigation Use:	
	For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
	Tuesdays & Thursdays	Wednesdays & Fridays
	before 10:00am OR after 8:00pm	before 10:00am OR after 8:00pm
**Landscape irrigation is permitted at ANYTIME on designated days if it is by means of a hand-held hose, a faucet filled bucket, or watering can of five (5) gallons or less, or via a drip irrigation system		
#2	Limit Private Vehicle Washing , including any motor vehicle, motorbike, boat, trailer, airplane, or other vehicle:	
	For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
	Tuesdays & Thursdays	Wednesdays & Fridays
	Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rinses	
Vehicle washing may be done at any time at a commercial car wash or commercial service		



	station.	
	Further, such washing may be exempted from the Plan if, as determined by the Director of Municipal Utilities, the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks, fishing vessels, and vehicles used to transport food and perishables.	
#3	Limit Pool Filling or Refilling , including any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools	
	For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
	Tuesdays & Thursdays before 10:00am OR after 8:00pm	Wednesdays & Fridays before 10:00am OR after 8:00pm
#4	Prohibit usage of potable water to fill, refill, or add water to any ornamental fountain or pond for aesthetic or scenic purposes, except where necessary to support aquatic life	

316 **Stage 2 Mandatory Demand Reduction Measures, continued.**

#5	Limit water usage from fire hydrants for only firefighting, related activities, or other activities necessary to maintain public health, safety, and welfare. Use of water from designated fire hydrants for construction purposes may be allowed under special permit from the Director of Municipal Utilities or his/her designee.	
#6	Limit Potable Water Use for Golf Course Irrigation for greens, tees, and fairways:	
	Tuesdays & Thursdays before 10:00am OR after 8:00pm	Wednesdays & Fridays before 10:00am OR after 8:00pm
	Properties utilizing a water source other than potable water provided by the City of Galveston (e.g. reclaimed, non-potable water) are not subject to this regulation	
#7	Prohibit all restaurants from serving water to patrons except on patron request.	
#8	Prohibit Non-Essential Water Uses, including:	
	Wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas	
	Wash down of buildings or structures for purposes other than immediate fire protection	
	Use of water for dust control, except as permitted by the Director of Municipal Utilities	
	Hydrant flushing (except for water system repairs), flushing gutters, or allowing water to run or accumulate in any street	
Failure to repair controllable leaks within a reasonable period after having been given notice directing the repair of such leaks		

317
318 **Section VIII.3 - Stage 3 Response (Severe Water Shortage; TCEQ “Priority” Level)**
319



320 A Stage 3 Response may be triggered when the Director of Municipal Utilities finds that the Response
321 Conditions warrant the declaration of a Stage 3 Response. The Director of Municipal Utilities will consider
322 declaring a Stage 3 Response when at least one of the following Response Conditions is satisfied:
323

324 **Response Conditions:**

- 325
- 326 1. The GCWA has initiated a Stage 3 Response under its Drought Contingency Plan.
 - 327 2. Total water demand exceeds 90% of deliverable capacity for three consecutive days
 - 328 3. Storage in City water reservoirs falls below 65% of capacity for three consecutive days
 - 329 4. Single day demand exceeds 95% of deliverable capacity in a normal demand environment.
- 330

331 A Stage 3 Response may be terminated by the Director of Municipal Utilities when the Response
332 Conditions that triggered the initiation of a Stage 3 Response no longer prevail.
333

334 **Response Measures:**

335

336 The goal for water use under Stage 3 is a reduction of 15% of water use compared to the **Historical Monthly**
337 **Average Water Usage** as calculated by GCWA and approved by the City. The Director of Municipal
338 Utilities may implement any of the following actions deemed necessary, and may implement other
339 appropriate actions not listed below. Within five (5) days of implementing (or terminating) mandatory water
340 use restrictions, the Director of Municipal Utilities will notify the Texas Commission on Environmental
341 Quality (TCEQ). Notifications will be submitted to the TCEQ Public Drinking Water Section Drought
342 Team, and will be submitted via the TCEQ-required online form, currently available at:
343 [https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form)
344 [plan-reporting-form](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form). Assistance in making notifications may be obtained via e-mail to wcp@tceq.texas.gov
345 or via phone at 512-239-4691.
346

347 **General Measures:**

- 348 • Notify all **Retail** and **Wholesale Customers** that a Stage 3 Response condition exists;
 - 349 • Require reductions in water use by all **Retail Customers** and **Wholesale Customers**;
 - 350 • Increase public awareness of drought or system conditions and measures to reduce demand
- 351

352 **Supply Management Measures:**

- 353 • Monitor water supply and demand on a constant basis and notify users by press releases of
354 conditions as appropriate
 - 355 • Reduce distribution pressure in 10% increments as possible and appropriate to attempt to stabilize
356 reservoir storage levels.
 - 357 • Meet with customers and develop water usage reduction plans
 - 358 • Distribute water to City reservoirs based on demand in specific service areas
 - 359 • Defer or delay City maintenance services (e.g. flushing of water mains, watering of City property)
 - 360 • Initiate usage of reclaimed, non-potable water for **Landscape Irrigation Use**, wherever feasible.
 - 361 • Explore alternative sources of potable water
 - 362 • Notify **Wholesale Customers** of reductions in available water and advise implementation of the
363 **Wholesale Customer's** drought contingency plan.
- 364

365

366 **Stage 3 Mandatory Demand Reduction Measures**



#1	Continue ALL Stage 2 Demand Reduction Measures
#2	Prohibit usage of hose-end sprinklers and automatic sprinkler systems at all times. Limit Landscape Irrigation Usage to use of hand-held hoses, hand-held buckets, or drip irrigation only. .
#3	Prohibit water use for construction purposes from designated fire hydrants, unless written permission is obtained from the Director of Municipal Utilities.
#4	Prohibit watering of golf course tees unless the golf course utilizes a water source other than that provided by the City (e.g. reclaimed, non-potable water)

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Section VIII.4: Stage 4 Response (Extreme Water Shortage; TCEQ “Emergency” Level)

371 A Stage 4 Response may be triggered when the Director of Municipal Utilities finds that the Response
372 Conditions warrant the declaration of a Stage 4 Response. The Director of Municipal Utilities will consider
373 declaring a Stage 4 Response when at least one of the following Response Conditions is satisfied:

374
375 **Response Conditions:**

- 376
377 1. The **GCWA** has initiated a Stage 4 Response under its Drought Contingency Plan.
378 2. Total water demand exceeds 95% of deliverable capacity for one day
379 3. Storage in City water reservoirs falls below 50% of capacity for one day, or below 60% of capacity
380 for 3 consecutive days

381
382 A Stage 4 Response may be terminated by the Director of Municipal Utilities when the Response
383 Conditions that triggered the initiation of a Stage 4 Response no longer prevail.

384
385 **Response Measures:**

386
387 The goal for water use under Stage 4 is a reduction of 20% of water use compared to the **Historical Monthly**
388 **Average Water Usage** as calculated by GCWA and approved by the City. The Director of Municipal
389 Utilities may implement any of the following actions deemed necessary, and may implement other
390 appropriate actions not listed below. Within five (5) days of implementing (or terminating) mandatory water
391 use restrictions, the Director of Municipal Utilities will notify the Texas Commission on Environmental
392 Quality (TCEQ). Notifications will be submitted to the TCEQ Public Drinking Water Section Drought
393 Team, and will be submitted via the TCEQ-required online form, currently available at:
394 [https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form)
395 [plan-reporting-form](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form). Assistance in making notifications may be obtained via e-mail to wcp@tceq.texas.gov
396 or via phone at 512-239-4691.

397
398 **General Measures:**

- 399 • Notify all **Retail** and **Wholesale Customers** that a Stage 4 Response condition exists;
400 • Require reductions in water use by all **Retail Customers** and **Wholesale Customers**;
401 • Increase public awareness of drought or system conditions and measures to reduce demand



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Supply Management Measures:

- Monitor water supply and demand on a constant basis and notify users by press releases of conditions as appropriate
- Reduce distribution pressure in 10% increments as possible and appropriate to attempt to stabilize reservoir storage levels.
- Meet with customers and develop water usage reduction plans
- Distribute water to City reservoirs based on demand in specific service areas
- Defer or delay City maintenance services (e.g. flushing of water mains, watering of City property)
- Initiate usage of reclaimed, non-potable water for **Landscape Irrigation Use**, wherever feasible.
- Aggressively explore alternative sources of potable water
- Notify **Wholesale Customers** of reductions in available water and advise implementation of the **Wholesale Customer’s** drought contingency plan.

Stage 4 Mandatory Demand Reduction Measures

#1	Continue ALL Stage 3 Demand Reduction Measures	
#2	Prohibit usage of hose-end sprinklers and automatic sprinkler systems at all times. Limit Landscape Irrigation Usage to use of hand-held hoses, hand-held buckets, or drip irrigation only:	
	For Customers with Property in East Galveston:	For Customers with Property in West Galveston:
	Tuesdays & Thursdays	Wednesdays & Fridays
	before 8:00am OR after 8:00pm	before 8:00am OR after 8:00pm
#3	Prohibit use of potable water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle unless the wash is occurring at a commercial car wash or commercial service station and cleaning the vehicle is necessary to maintain public health, safety and welfare. Any such vehicle washes may only occur between 6:00am and 10:00am, or between 6:00pm and 10:00pm.	
#4	Prohibit the filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools:	
#5	Prohibit the operation of any ornamental fountain or pond for aesthetic or scenic purposes, except where necessary to support aquatic life of where such fountains or ponds are equipped with a recirculation system (approved for use by the Director of Municipal Utilities).	

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Under Stage 4 response conditions, the Director of Municipal Utilities may suspend pending applications for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind.



425
426 **Section VIII.5: Stage 5 - Water Emergency Response (Emergency Water Shortage; TCEQ**
427 **“Emergency” Level)**
428

429 A Stage 5 Response may be triggered when the Director of Municipal Utilities finds that the Response
430 Conditions warrant the declaration of a Stage 5 Response. The Director of Municipal Utilities will consider
431 declaring a Stage 5 Response when at least one of the following Response Conditions is satisfied:
432

433 **Response Conditions:**
434

- 435 1. The GCWA has initiated a Stage 5 Response under its Drought Contingency Plan.
- 436 2. Major water line breaks, pump failures, or system failures occur which cause significant loss of
437 capability to provide water service
- 438 3. Natural or man-made contamination of the water supply sources limits or prohibits the delivery of
439 potable water
- 440 4. Stage 4 Response measures have not reduced the water usage to goal levels, and the Director of
441 Municipal Utilities determines the City may not be able to meet the water demands of customers.
442

443 A Stage 5 Response may be terminated by the Director of Municipal Utilities when the Response
444 Conditions that triggered the initiation of a Stage 5 Response no longer prevail.
445

446 **Response Measures:**
447

448 The goal for water use under Stage 5 is subject to the scope of the emergency. The Director of Municipal
449 Utilities may implement any of the following actions deemed necessary, and may implement other
450 appropriate actions not listed below. Within five (5) days of implementing (or terminating) mandatory water
451 use restrictions, the Director of Municipal Utilities will notify the Texas Commission on Environmental
452 Quality (TCEQ). Notifications will be submitted to the TCEQ Public Drinking Water Section Drought
453 Team, and will be submitted via the TCEQ-required online form, currently available at:
454 [https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form)
455 [plan-reporting-form](https://www.tceq.texas.gov/drinkingwater/homeland_security/security_pws/pws-drought-contingency-plan-reporting-form). Assistance in making notifications may be obtained via e-mail to wcp@tceq.texas.gov
456 or via phone at 512-239-4691.
457

458 **General Measures:**

- 459 • Notify all **Retail** and **Wholesale Customers** that a Stage 5 Response condition exists;
- 460 • Require reductions in water use by all **Retail Customers** and **Wholesale Customers**;
- 461 • Increase public awareness of drought or system conditions and measures to reduce demand
462

463 **Supply Management Measures:**

- 464 • Discontinue all water system operations and correct the emergency situation to insure a safe supply
465 of water
- 466 • Monitor water supply and demand on a constant basis and notify users by press releases of
467 conditions as appropriate, with notices provided at least every 4 hours.
- 468 • Reduce distribution pressure in 10% increments as possible and appropriate to attempt to stabilize
469 reservoir storage levels.
- 470 • Issue Boil Water notices via press releases, and if necessary, published notices
- 471 • Place Fire Department on Alert



- 472 • Distribute water to City reservoirs based on demand in specific service areas
- 473 • Defer or delay City maintenance services (e.g. flushing of water mains, watering of City property)
- 474 • Initiate usage of reclaimed, non-potable water for **Landscape Irrigation Use**, wherever feasible.
- 475 • Aggressively explore alternative sources of potable water
- 476 • Notify **Wholesale Customers** of reductions in available water and advise implementation of the
- 477 **Wholesale Customer's** drought contingency plan.
- 478
- 479

Stage 5 Mandatory Demand Reduction Measures

#1	Continue ALL Stage 4 Demand Reduction Measures
#2	Prohibit Landscape Irrigation Water Use at all times
#3	Prohibit use of potable water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle, unless written permission is provided by the Director of Municipal Utilities..

480
 481 Water deliveries to wholesale water providers will be allocated on a pro-rata basis as provided under the
 482 Texas Water Code §11.039, following the water allocation plan developed between the City and the
 483 wholesale water provider.

Section IX: Emergency Water Allocation

484
 485 **If the supply of available potable water reaches such a low level that anticipated demand cannot be**
 486 **met and the health and safety of the community may be at risk, the Director of Municipal Utilities,**
 487 **at the direction of the City Manager, shall be responsible for administering an allocation program**
 488 **under which the City may limit the times and/or days water will be pumped into the water**
 489 **distribution system.** If necessary, this allocation may vary for areas of the City served by different storage
 490 tanks/reservoirs and water will be distributed accordingly to these storage tanks/reservoirs. Schedules of
 491 water availability in different areas of the City will be announced by press releases to all media, and may
 492 be supplemented by the distribution of circulars at businesses and public buildings throughout the City, as
 493 determined by the Directory of Municipal Utilities.

494
 495 Water distribution will be administered by the Director of Municipal Utilities, at the direction of the City
 496 Manager, based on priorities established at a meeting with the Mayor, City Manager, the City Emergency
 497 Operation Officer, and any other official(s) the aforementioned individuals deem necessary, including
 498 wholesale customer representatives. The agreement should include, but not be limited to, considering the
 499 following facilities in setting area priorities:

- 500 • Fire and Public Safety facilities
- 501 • Hospitals and Medical-related (including veterinary) facilities
- 502 • Facilities housing distribution points for food and bottled water
- 503 • Geriatric and Assisted Living facilities
- 504 • Educational and Day Care facilities (while in session)
- 505 • Food service facilities (e.g. restaurants, food kitchens)
- 506 • Government, Commercial and Industrial facilities (e.g. courts, Public Works water system stations,
 507 power complexes, manufacturers, distributors, retail stores, auto service stations, hotels,



- 511 mortuaries, entertainment complexes)
- 512 • Port of Galveston facilities.
- 513 • Residential users and housing complexes
- 514

515 **Water distribution to wholesale accounts:** There will be a provision in every wholesale water contract
516 entered into or renewed by the City after adoption of this plan, including contract extensions, that in case
517 of a shortage of water resulting from drought, the water to be distributed shall be allocated in accordance
518 with Texas Water Code, §11.039.

519
520 **Section X: Enforcement**

- 521
- 522 (a) No person shall knowingly or intentionally allow the use of water from the City of Galveston for
523 any use contrary to any provision of this Plan, as specified by the drought response stage in effect
524 at the time as a result of action taken by Director of Municipal Utilities, or a designee, in accordance
525 with provisions of this Plan. Any violation shall be considered an infraction against the public
526 health and sanitation of the City.
- 527
- 528 (b) Any person who violates this Plan is guilty of a misdemeanor and shall be punishable by a fine not
529 exceeding \$2,000.00 dollars and a surcharge of 20% applied to their current water bill. Each day
530 that one or more of the provisions in this Plan is violated shall constitute a separate offense. If a
531 person is convicted of three or more distinct violations of this Plan, the Director of Municipal
532 Utilities shall, upon 48-hour advance notice to the customer, be authorized to discontinue water
533 service to the premises where such violations occur. Services discontinued under such
534 circumstances shall be restored only upon advance payment of a re-connection charge, hereby
535 established at \$40.00 same day or \$25.00 next day, and any other cost incurred by the City of
536 Galveston in disconnecting and restoring service. In addition, suitable assurance must be given to
537 the Director of Municipal Utilities that the same action shall not be repeated while the Plan is in
538 effect. Compliance with this plan may also be sought through injunctive relief in the district court.
- 539
- 540 (c) The Director of Municipal Utilities shall assume that the billing name for a water customer account
541 is the person responsible for any violations to this Plan, and shall be presumed to be the violator,
542 unless that person can submit tangible proof to the Director that another person or entity bears
543 responsibility for the property.
- 544
- 545 (d) Any employee of the City of Galveston designated by the City Marshal, or a police officer, may
546 issue a citation to a person or entity in violation of this Ordinance. The citation shall be prepared
547 in duplicate and shall contain the name and address of the violator, if known, and the offense
548 charged. The citation shall direct him/her to appear in the city municipal court on the date shown
549 on the citation, for which the date shall not be less than 3 days nor more than 5 days from the date
550 the citation was issued. The alleged violator shall be served a copy of the citation. Service of the
551 citation shall be complete upon delivery of the citation to the alleged violator, to an agent or
552 employee of a violator, or to a person over 14 years of age who is a member of the violator's
553 immediate family or is a resident of the violator's residence. The alleged violator shall appear in
554 city municipal court to enter a plea of guilty or not guilty for the violation of this Plan. If the alleged
555 violator fails to appear in city municipal court, a warrant for arrest may be issued. A summons to
556 appear may be issued in lieu of an arrest warrant. These cases shall be expedited and given
557 preferential setting in city municipal court before all other cases.
- 558



559 (e) In the event of water allocation, appropriate security measures should be implemented by the
 560 affected City departments
 561

562 (f) Any surcharge assessed to the City of Galveston by the GCWA will be passed on to ALL **Retail**
 563 and **Wholesale Customers**. The assessed fine will be divided amongst Retail and Wholesale
 564 Customers based on the relative volume of water used during the month in which the fine was
 565 imposed. The portion of the fine assessed to **Retail Customers** will be divided amongst all
 566 customers based on their individual customer "Base Rate" related to the customer's meter size.
 567 Assessed surcharges will be included on the next month's water bill from the City of Galveston.
 568

569 The following example depicts how the City of Galveston will divide any assessed fines from
 570 GCWA amongst its customers. **NOTE: GCWA** will only assess surcharges if the monthly
 571 water usage by the City of Galveston exceeds the City's **Historical Monthly Average Water**
 572 **Usage** as calculated by **GCWA** and approved by the City. Surcharges from GCWA are avoided if
 573 the City of Galveston reduces its usage below the **Historical Monthly Average Water Usage**.
 574

575 **Example GCWA-imposed surcharge Passed on to City of Galveston Customers:**

576 ****Note:** number of connections varies by month and is continuously updated by City of Galveston.
 577 Numbers shown below are for illustrative purposes only.
 578

579 GCWA Imposed Surcharge: \$1,000,000
 580

			Surcharge
Total Water Delivered to City of Galveston:	400,000,000 Gallons	100%	\$1,000,000
Water to Wholesale Customers	16,000,000 Gallons	4%	\$40,000
Water to Retail Customers	384,000,000 Gallons	96%	\$960,000

581 Surcharge Division among Retail Customers:
 582 Total Retail Surcharge \$960,000

Meter Class	Base Rate	Number of Connections	Portion of Retail Surcharge		
			By Meter Class	%	Per Connection
5/8" x 3/4"	\$10.78	15000	\$174,876.09	18%	\$11.66
1"	\$24.36	1500	\$39,517.45	4%	\$26.34
1 1/2"	\$46.99	1000	\$50,818.97	5%	\$50.82
2"	\$74.14	1000	\$80,181.28	8%	\$80.18
3"	\$146.55	750	\$118,868.70	12%	\$158.49
4"	\$228.01	250	\$61,647.34	6%	\$246.59
6"	\$454.29	200	\$98,261.55	10%	\$491.31
8"	\$725.83	150	\$117,746.12	12%	\$784.97
10"	\$1,042.63	100	\$112,758.85	12%	\$1,127.59
12"	\$1,947.76	50	\$105,323.64	11%	\$2,106.47

583 (g) Any credit assessed to the City of Galveston by the GCWA will be passed on to ALL **Retail** and
 584 **Wholesale Customers** in the same manner as surcharges will be determined (see example above).
 585 Alternatively, earned credits received from the GCWA for meeting goals will be included on the
 586 following month's water bill from the City of Galveston.
 587



588

589 **Section XI: Variances**

590

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

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

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

598

599 Persons requesting an exemption from the provisions of this Ordinance shall file a petition for variance,
600 obtained from the Director of Municipal Utilities or a designee, with the City of Galveston within 5 days
601 after the Plan or a particular drought response stage has been invoked. All petitions for variances shall be
602 reviewed by the Director of Municipal Utilities, or a designee, and shall include the following:

603

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

605 (b) Purpose of water use.

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

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

610 (e) Description of the relief requested.

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

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

614 (h) Other pertinent information.

615

616 Variances granted by the City of Galveston shall be subject to the following conditions, unless waived or
617 modified by the Director of Municipal Utilities or a designee:

618

619 (a) Variances granted shall be valid only for the granted limited time period during the current situation
620 where Stages of conservation are declared, and shall expire on the designated date or the
621 termination of Stage 1 (and a return to non-drought conditions) in the current sequence, whichever
622 occurs first.

623 (b) All variances granted shall be valid for a maximum of 90 days, at which time, if the City is still
624 under a declared conservation period, the customer will have to re-apply for a new variance.

625

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

628

629 **Section XIII: Severability**

630

631 It is declared to be the intention of the City of Galveston that the sections, paragraphs, sentences, clauses,
632 and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan
633 shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction,
634 such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and
635 sections of this Plan, since the same would not have been enacted by the City of Galveston without the



636 incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

