WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN
FOR
HARRIS COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT NO. 157

Adopted October 8, 2015
Amended May 9, 2019

Section I
Introduction

Harris County Water Control and Improvement District No. 157 (the "District") is located in the northwest portion of Harris County, approximately 25 miles northwest of the City of Houston Central Business District and entirely within the extraterritorial jurisdiction of the City of Houston, Texas. The District is part of the master-planned community of Bridgeland.

Pursuant to Article XVI, Section 59 of the Texas Constitution and Chapters 49 and 51 of the Texas Water Code, as amended, the District is empowered, among other things, to finance, purchase, construct, operate, and maintain all works, improvements, facilities and plants necessary for the supply and distribution of water; the collection, transportation and treatment of wastewater; and the control and diversion of storm water. The District, however, currently plans to provide only major storm drainage and channel improvements necessary to serve the land within the boundaries of the District and to construct and operate certain recreational facilities, including combination detention/amenity lakes and irrigation facilities. The District's non-potable water supply sources described in Section VI hereof are only used to supply the District's irrigation system and to maintain water levels in the District's detention/amenity lakes. Consequently, the District does not have individual users or customers.

The District and Bridgeland Development, LP (the "Developer") have entered into that certain Water Supply Contract, dated May 1, 2013 (the "Contract"). Pursuant to the Contract, the District has purchased surface water supplies, such supplies being available for diversion from Cypress Creek pursuant to water rights held by the Developer, for non-potable purposes including irrigation and maintenance of detention/amenity lake levels.

Pursuant to the Texas Water Code and Section 10.1 of the Contract, the District is required to adopt a water conservation and drought contingency plan. The following is adopted as the standard operating procedures, drought contingency plan, and the water conservation plan for the District (this "Plan"). This Plan shall be effective from and after the date of its adoption and/or amendment.

Section II
Public Involvement

Opportunity for the public to provide input into the preparation of this Plan was provided by the District by means of holding a public meeting, for which proper notice was given, to accept input on this Plan.

Section III
Public Education

The District will periodically provide or make available to the public information about this Plan, including information about the conditions under which each stage of the drought contingency plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by various methods, as the Board of Directors deems appropriate from time to time.

Section IV
Coordination with Regional Water Planning Groups and the Texas Commission on Environmental Quality

The service area of the District is located within the Houston Region H Regional Water Planning Group and the District will provide a copy of this Plan to such regional water planning group within ninety (90) days following its adoption. The service area of the District is also located within the boundaries of the West Harris County Regional Water Authority and the District shall submit this Plan to, or make same available for inspection by, an appropriate representative of such regional water authority within ninety (90) days following its adoption.

To the extent required by 30 TAC §288.30, the District shall submit this Plan to, or make same available for inspection by, the Executive Director of the Texas Commission on Environmental Quality (the "Commission") within ninety (90) days of its adoption, or sooner if required by 30 TAC §288.30. The District shall notify the executive director of the Commission within five (5) business days of the implementation of any stage of this Plan, other than Stage 1. Further, to the extent required by the rules of the Texas Water Development Board, the District shall submit this Plan, or make same available for inspection by, the appropriate representatives of such board within ninety (90) days of its adoption, or sooner if required by such rules.

Section V
Authorization

The operating company engaged by the District and charged with the responsibility for operations and maintenance of the District's non-potable irrigation system (the "Operator") is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The District's Operator shall have the authority to initiate or terminate drought response measures as described in this Plan.

Section VI
Inventory of Facilities

The District has invested in various sources of water supply and related facilities to store water in the District's amenity/detention lakes for aesthetic and recreational purposes, including withdrawal of water from such lakes for use in the District's irrigation system and for

maintenance of certain amenity/detention lakes. The following includes an inventory of the sources of water, irrigation pump stations, and lift pumps owned and operated by the District. An aerial map showing the locations of the facilities described below is attached hereto as Exhibit A.

A. Sources of Water

1. HCWCID 157 Make Up Well No. 1 (500gpm to Lake at Elev. 140.0)
   Address: 18014 ½ House Hahl Road
   ESID No.: 10089010069001233001

2. HCWCID 157 Make Up Well No. 3 (1,000gpm to Lake at Elev. 142.0)
   Address: 12132 ½ Parkside Haven Dr.
   ESID No.: 10089010069003454701

3. HCWCID 157 Make Up Well No. 4 (500gpm to Lake at Elev. 140.0)
   Address: 11802 ½ Bayou Junction Rd., # 2, Cypress, TX 77433
   ESID No.: 1008961109090929913498

4. HCWCID 157 Make Up Well No. 5 (500gpm to Lake at Elev. 143.0)
   19127 ½ Bridgeland Creek Parkway, Cypress, TX 77433
   ESID No.: 10089010119014223200118

5. Cypress Creek Pump Station (385gpm at low flow to Lake at Elev. 140.0)
   Address: 17616 ½ House & Hahl Rd., Cypress, TX 77433
   ESID No.: 1008901020900663660113

6. WWTP Reclaimed water (variable with WWTP flows to Lake at Elev. 140.0)
   Address: Discharge at Oak Meadow Park

7. Storm water runoff
   Address: N/A; stored in amenity/detention lakes

B. Irrigation Pump Stations and Lift Pumps

1. Irrigation Pump Station No. 1 (2,000gpm from Lake at Elev. 140.0)
   Located at 18010 1/2 House Hahl Road, Cypress, TX 77433
   ESID No.: 10089010238166895801

2. Irrigation Pump Station No. 2 (2,700gpm from Lake at Elev. 142.0)
   Address: 12130 ½ Parkside Haven Dr., Cypress, TX 77433
   ESID No.: 10089010209003448701

3. Irrigation Pump Station No. 3 (4,000gpm from Lake at Elev. 140.0)
   Address: 11802 ½ Bayou Junction Rd., # 1, Cypress, TX 77433
   ESID No.:

4. Irrigation Pump Station No. 4 (4,200 gpm from Lake at Elev 140.0)
   Address: 19127 ½ Bridgeland Creek Parkway, Cypress, TX 77433
   ESID No.: 10089010119014223201l8

5. Bridge Cove Lift Pump (185gpm from Lake at Elev. 140.0 to Lake at Elev. 142.0)
   Address: 12001 Bridge Cove Dr., Cypress, TX 77433
   ESID No.: 10089010069004684301

6. Hidden Pass 6-Inch Cla Val Lake Fill (450gpm from IPS 3 to Lake at Elev. 142.0)
   Address: Hidden Pass between Bayou Junction and W. Creekside

Section VII
Triggering Conditions – Initiation and Termination of Drought Stages

The District's Operator shall monitor the lake levels on a weekly basis and shall determine, in consultation with the firm of professional engineers engaged by the District and duly designated as the District's primary engineering representatives (the "Engineer") and Board of Directors, when conditions warrant initiation or termination of each drought stage set forth below. If a drought stage is initiated, the District's Operator shall monitor the applicable lake levels on a daily basis until the termination of such drought stage. In addition to consulting with the District's Engineer and the President of the District's Board of Directors, the District's Operator shall also notify the representatives of the "Development Team" identified on Exhibit B attached hereto of the initiation or termination of a drought stage.

The triggering criteria described below are based on an analysis performed by the District's Operator and District's Engineer concerning the vulnerability of the District's water sources. The District has five separate amenity/detention lake systems that store water: (1) the lakes with a static water level elevation of 140.0 feet above mean sea level (the "140 Lake System"), and (2) the lakes with a static water level elevation of 142.0 feet above mean sea level (the "142 Lake System").Reference Exhibit A. Only the 140 Lake System and the 142 Lake System have pump stations that draw water from the lakes for irrigation. The 140 Lake System and the 142 Lake System have different triggering criteria for their respective drought stages and different responses to those drought stages. Therefore, the initiation and/or termination of a drought stage for the140 Lake System does not initiate and/or terminate a drought stage for the 142 Lake System, and the initiation and/or termination of a drought stage for the 142 Lake System does not initiate and/or terminate a drought stage for the 140 Lake System.

The District also has certain amenity/detention lakes with static water level elevations above 142.0 feet above mean sea level (the "Perched Lakes"). Reference Exhibit A. Water levels in the Perched Lakes are maintained with water supplied from the 140 Lake System and/or the 142 Lake System. The Perched Lakes do not store water for purpose of providing a source of supply for the District's irrigation system. As such, Triggering Conditions are not necessary with respect to the Perched Lakes.

A. LAKES AT STATIC WATER ELEVATION 140.0

1. Stage 1 Water Shortage Conditions ("Stage 1")

    i. Requirements for Initiation – The District will initiate Stage 1 when the lake level drops below Elev. 138.5 or when monitoring of water demands/weather forecasts indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 1.

    ii. Requirements for Termination – Stage 1 may be rescinded when the lake level rises above Elev. 138.5. The District's Operator will notify the Development Team of the termination of Stage 1.

2. Stage 2 Water Shortage Conditions ("Stage 2")

    i. Requirements for Initiation – The District will initiate Stage 2 when the lake level drops below Elev. 138.0 or when monitoring of water demands/weather forecasts indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 2.

    ii. Requirements for Termination – Stage 2 may be rescinded when the lake level rises above Elev. 138.0. The District's Operator will notify the Development Team of the termination of Stage 2. Upon the termination of Stage 2, Stage 1 becomes operative, if the lake level is below Elev. 138.5.

3. Stage 3 Water Shortage Conditions ("Stage 3")

    i. Requirements for Initiation – The District will initiate Stage 3 when the lake level drops below Elev. 137.5 or when monitoring of water demands/weather forecasts indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 3.

    ii. Requirements for Termination – Stage 3 may be rescinded when the lake level rises above Elev. 137.5. The District's Operator will notify the Development Team of the termination of Stage 3. Upon the termination of Stage 3, Stage 2 or Stage 1 becomes operative, if the lake level is below Elev. 138.0 or 138.5, respectively.

B. LAKES AT STATIC WATER ELEVATION 142.0

1. Stage 1 Water Shortage Conditions ("Stage 1")

    i. Requirements for Initiation – The District will initiate Stage 1 when the lake level drops below Elev. 140.5 or when monitoring of water demands/weather forecasts

indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 1.

ii. Requirements for Termination – Stage 1 may be rescinded when the lake level rises above Elev. 140.5. The District's Operator will notify the Development Team of the termination of Stage 1.

2. Stage 2 Water Shortage Conditions ("Stage 2")

iii. Requirements for Initiation – The District will initiate Stage 2 when the lake level drops below Elev. 140.0 or when monitoring of water demands/weather forecasts indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 1.

iv. Requirements for Termination – Stage 2 may be rescinded when the lake level rises above Elev. 140.0. The District's Operator will notify the Development Team of the termination of Stage 2. Upon termination of Stage 2, Stage 1 becomes operative, if the lake level is below Elev. 140.5.

3. Stage 3 Water Shortage Conditions ("Stage 3")

v. Requirements for Initiation – The District will initiate Stage 3 when the lake level drops below Elev. 139.5 or when monitoring of water demands/weather forecasts indicate earlier initiation is necessary. The District's Operator will notify the Development Team of the initiation of Stage 3.

vi. Requirements for Termination – Stage 3 may be rescinded when the lake level rises above Elev. 139.5. The District's Operator will notify the Development Team of the termination of Stage 3. Upon termination of Stage 3, Stage 2 or Stage 1 becomes operative, if the lake level is below Elev. 140.0 or 140.5, respectively.

Section VIII
Standard Operating Procedures and Drought Response Stages

A. STANDARD OPERATING PROCEDURES

Unless a drought stage is initiated, the District's Operator will implement the following standard operating procedures:

1. **LAKES AT STATIC WATER ELEVATION 140.0**

i. WWTP Reclaimed Water constantly flows to the 140 Lake System.

ii. When the lake level drops to Elev. 139.5, the District's automatic float control will turn on the Cypress Creek Pump Station.

2. LAKES AT STATIC WATER ELEVATION 142.0

i. When the lake levels drop to Elev. 141.5, the District's Operator will open the Hidden Pass Lake Fill during non-irrigation hours (10:00 AM – 5:00 PM). It will be turned off at Elev. 142.0 and have a low water turn off at Elev. 138.0 in the 140 Lake.

3. PERCHED LAKES

i. The Perched Lakes are maintained at or within 6 inches below the respective static water level elevations shown on Exhibit A.

B. DROUGHT RESPONSE STAGES

The District's Operator will implement the following actions, in connection with the designated Irrigation Operator (see Exhibit A) when a drought stage is initiated:

1. **LAKES AT STATIC WATER ELEVATION 140.0**

i. Stage 1 Water Shortage Conditions.

(a) Target. Achieve a 25% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 25%;
- Reduce Class A and Class B with wildflower turf areas to 2 cycles per week; and
- Reduce Class B areas to 1 cycle per week.

ii. Stage 2 Water Shortage Conditions.

(a) Target. Achieve a 50% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 50%; and
- Reduce Class B areas to zero cycles per week.

iii. Stage 3 Water Shortage Conditions.

(a) Target. Achieve a 75% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 75%;
- Reduce all turf areas to zero cycles per week; and
- Unless or until otherwise directed by the District's Board of Directors, turn on Make Up Well No. 1, Make Up Well No. 4, and Make Up Well No. 5.

2. **LAKES AT STATIC WATER ELEVATION 142.0**

i. Stage 1 Water Shortage Conditions.

(a) Target. Achieve a 25% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 25%; and
- Turn on Hidden Pass Lake Fill during all hours.

ii. Stage 2 Water Shortage Conditions.

(a) Target. Achieve a 50% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 50%; and
- Reduce Class B area to zero cycles per week.

iii. Stage 3 Water Shortage Conditions.

(a) Target. Achieve a 75% reduction in non-potable irrigation water use.

(b) Response Measures. The District's Operator shall instruct the Irrigation Operator to:

- Reduce non-potable irrigation water use by 75%;
- Reduce all turf areas to zero cycles per week;
- Unless or until otherwise directed by the District's Board of Directors, turn on Make Up Well 3 (turn off @ 139.0); and
- Turn off fill lines to Perched Lakes and Lake Bridgeland.

Section IX
Water Conservation Plan

The District has developed the following water conservation plan. A full description of the District's water utility profile is attached hereto and included herein for all purposes as Appendix A.

A. 5-and 10-year Water Conservation Target Goals

The District does not serve as a supplier to individual end users. Therefore, the water conservation measures described below relate only to the District's current and future demands and use of water. The District's goal is to achieve a reduction of 1% per annum per acre, for a 5-year goal of a 5% reduction and a 10-year goal of a 10% reduction.

Notwithstanding the targets identified above, the District shall not be obligated to achieve any water savings, and the District's failure to do so shall not subject the District to any liability whatsoever.

B. Water Conservation Methods

1. Recycling and Reuse - The District will promote water conservation by implementing a program for reuse of wastewater. The District uses, and will continue to use, WWTP reclaimed water to supply the District's irrigation system and to maintain amenity lake levels.

2. Standard Operating Procedures of Make Up Wells – To reduce the impact on groundwater resources, the District has implemented operating procedures that limit the use of groundwater from make-up wells. Pursuant to the operating procedures, the District Operator will only turn on the make-up wells during certain periods of water shortages.

Section X
Severability; Amendment

It is hereby declared to be the intention of the District that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared invalid, unenforceable or unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such invalidity, unenforceability, or unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, which shall be enforceable as if the same had been enacted by the District without the incorporation into this Plan of any such invalid, unenforceable or unconstitutional phrase, clause, sentence, paragraph, or section.

The District has and specifically reserves the right to change, alter or amend any provision of this Plan at any time. The District shall renew and update, as appropriate, this Plan at least every five (5) years, based on new or updated information, such as adoption or revision of any applicable regional water plan, or as may otherwise be required by applicable statutes or rules of the Commission.

EXHIBIT A

[Map Follows]

WWTP Reclaimed Water
Cypress Creek Pump Station Outfall

Cypress Creek
Pump Station

IPS1
Makeup Well #1

IPS2
Makeup Well #3

IPS3
Makeup Well #4

Bayou Junction
Lift Pump

Hidden Pass
Cla Val Lake Fill

IPS4
Makeup Well #5

N BRIDGELANDS LAKE PKWY
HOUSE HAHL RD
SHADY EDGE DR
PARKSIDE HAVEN
LONG HAVEN DR
LAKELAND HAVEN DR
BAYOU JUNCTION
SHORELANDS RD
FIRST BEND DR
HIDDEN PASS
COLUMBIA PINES LN
FRY RD

140 148 142 146.5 147.5 143.65 147 145 145.5 143

140 Static Water Level

Existing Waterbody

N

0 600 1,200
Feet

Disclaimer:
Every effort has been made to ensure the accuracy of the basemap data. BGE, Inc. assumes no liability or damages due to errors or omissions.

Bridgeland Irrigation Facilities and Lake Fill Standard Operating Procedure Exhibit 1

Date: Mar. 2019 | Job No: 626-00

Bridgeland Irrigation Facilities and Lake Fill Standard Operating Procedure Exhibit 1

BGE, Inc.
Tel: 281-558-8700
www.bgeinc.com

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EXHIBIT B

BOARD OF DIRECTORS

Keith Nystrom, President: keithnystrom@yahoo.com

DISTRICT ENGINEER

BGE, Inc:

Mike Fitzgerald: mfitzgerald@bgeinc.com

Will Gutowsky: wgutowsky@bgeinc.com

DISTRICT OPERATOR

Inframark:

Jason Demel: jason.demel@inframark.com

Dennis Reddin: dennis.reddin@inframark.com

DEVELOPMENT TEAM

Bridgeland Development, LP:

Heath Melton: heath.melton@howardhughes.com

Dan Kolkhorst: dan.kolkhorst@howardhughes.com

Mark Gehringer: mark.gehringer@howardhughes.com

Tricia Brasseaux: tricia.brasseaux@howardhughes.com

Fred LeBlanc: frederick.leblanc@howardhughes.com

Lona Shipp: lona.shipp@howardhughes.com

Bridgeland Council, Inc. / Planned Community Management, Inc.:

Melissa Hargrove: melissa.hargrove@inframark.com

Kevin Brown: kevin.brown@inframark.com

Irrigation Operator – Spencer Outdoor, LLC:

Jeremy Hitchcock: jhitchcock@spencerco.com

District Attorneys – Schwartz, Page & Harding, L.L.P.:

Mitchell Page: mgpage@sphllp.com

Shelby Yllana: syllana@sphllp.com

APPENDIX A

[Water Utility Profile Follows]

NOT APPLICABLE.