

REGION H

Water Planning Group

POPULATION DEMANDS COMMITTEE MEETING MATERIALS

July 31, 2017

**Freese and Nichols, Inc.
Houston Office**

**Region H Water Planning Group
Population Demands Committee
2:00 PM Monday
July 31, 2017
Freese and Nichols Houston Office
10497 Town and Country Way, Suite 600, Houston, TX 77024**

AGENDA

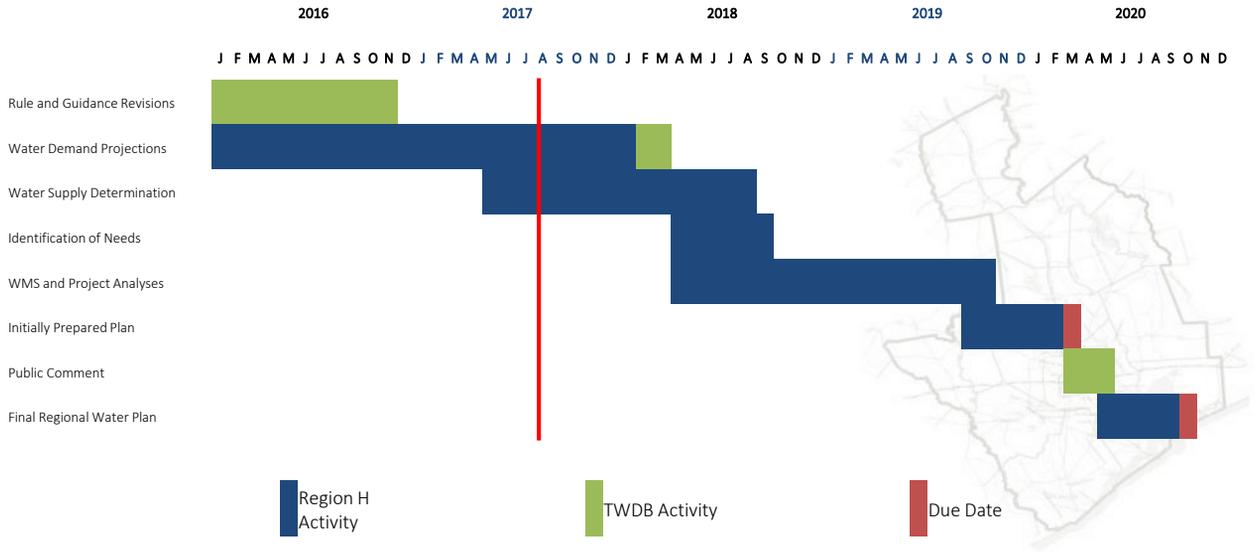
1. Introductions.
2. **Receive public comments on specific issues related to agenda items 3 through 7.** (Public comments limited to 3 minutes per speaker)
3. Discuss Committee activities and schedule.
4. Receive presentation regarding the sub-WUG planning option and take action on use of the option for Region H and directing the Consultant Team to coordinate with TWDB regarding any recommendations.
5. Receive presentation on and discuss the Region H WUG survey.
6. Receive presentation on and discuss TWDB data, projections, and the process for requesting revised projections and make recommendations regarding revised projections.
7. Receive presentation on identification of Major Water Providers for Region H and consider recommendations to the Region H Planning group.
8. **Receive public comments.** (Public comments limited to 3 minutes per speaker)
9. Adjourn

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact Philip Taucer at (713) 600-6835 at least three business days prior to the meeting so that appropriate arrangements can be made.

Agenda Item 3

Discuss Committee activities and schedule.

Agenda Item 3 Committee Activities and Schedule



Agenda Item 3 Committee Activities and Schedule

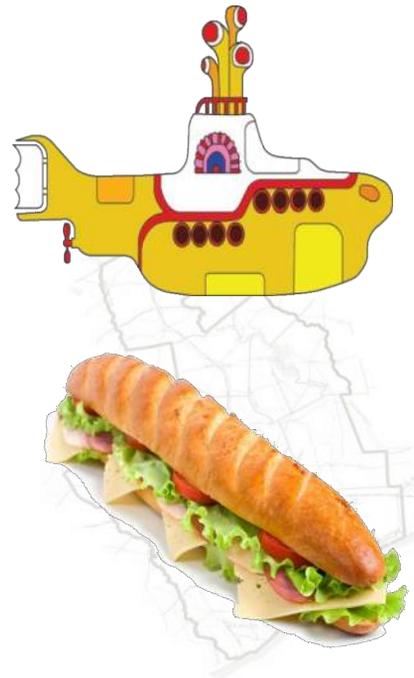
Date	Scheduled Events/Tasks
07/2017	Population Demands Committee Meeting
09/2017	Due date to submit requests for sub-WUGs
01/2018	Due date for adjustment requests to TWDB
03/2018	Estimated adoption date for projections
09/2018	DUE DATE: Technical Memorandum
03/2020	DUE DATE: Initially Prepared Plan
10/2020	DUE DATE: FINAL RWP

Agenda Item 4

Receive presentation regarding the sub-WUG planning option and take action on use of the option for Region H and directing the Consultant Team to coordinate with TWDB regarding any recommendations.

Agenda Item 4 Sub-WUG Option

- Primarily for rural
 - Small entities
 - Buried in County-Other
- Mainly database
- Any Region can utilize, but...
- Regions develop data
- Discussed at last Region H meeting
- Committee authorized to decide.



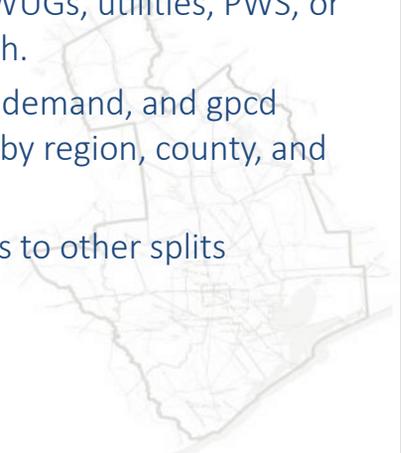
Agenda Item 4 Sub-WUG Option

Criteria for Adjustment

- Due 09/01/2017
- Existing utility, PWS, or area
- RWPG develops projections, supplies, needs, WMS volumes, etc.
- Splits must roll up to WUG
- Adjustment other splits

Data Required

- List of sub-WUGs, utilities, PWS, or areas in each.
- Population, demand, and gpcd projections by region, county, and basin
- Adjustments to other splits



Agenda Item 4 Sub-WUG Option

- Should Region H utilize?
 - Increased detail
 - Data and schedule challenges
- Potential applications
 - Rural – less of an issue for Region H
 - GRPs in CO – planned for by sponsor
 - Annexations/future developments – data availability



Agenda Item 4 Sub-WUG Option

Action:

Direct the Consultant Team regarding which areas if any to analyze as sub-WUGs and authorize the Consultant Team to coordinate with TWDB regarding sub-WUG requests.

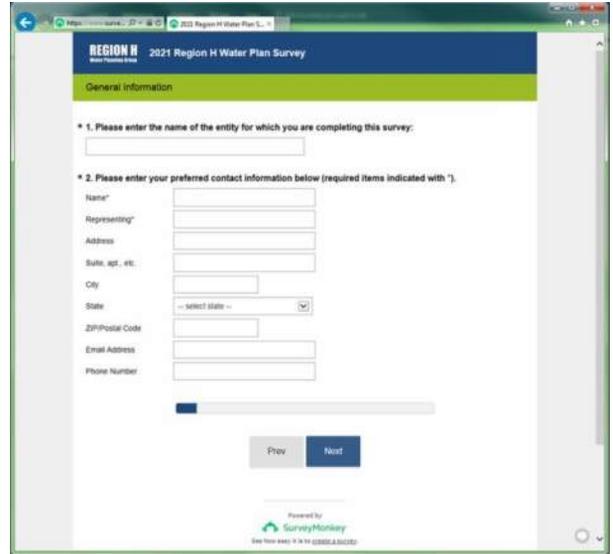


Agenda Item 5

Receive presentation on and discuss the Region H WUG survey.

Agenda Item 5 WUG Survey

- Regular part of planning process
- Gather information from WUGs:
 - Projections
 - Existing supplies and infrastructure
 - Interconnect facilities
 - Future projects
 - Conservation and Drought Contingency
- **New and Improved!**
 - WUG-centric
 - Half the questions
 - Hip, stylish Region H theme



The screenshot shows a web browser displaying the "2021 Region H Water Plan Survey" form. The form is titled "General Information" and contains two main sections. Section 1 asks for the name of the entity completing the survey. Section 2 asks for preferred contact information, including fields for Name, Representing, Address, State, apt, etc., City, State (a dropdown menu), ZIP/Postal Code, Email Address, and Phone Number. There are "Prev" and "Next" buttons at the bottom of the form. The browser's address bar shows "Region H Water Plan Survey".

Agenda Item 5 WUG Survey

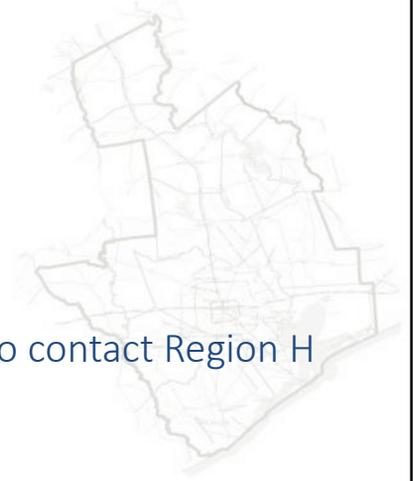


- Distributed July 19th/20th
 - Survey link
 - Entity-specific data
- Emailed to 342 WUGs
 - Small number of redo mails
 - Only a few without known email address.
- Initial response is encouraging
 - 20+ online responses in first week
 - Multiple confirmation messages and questions
 - Several requests for revision

Agenda Item 5

WUG Survey

- August 21st if possible
- Next Steps
 - Continued follow-up with respondents
 - Examining revision requests
 - Reminders to non-respondents
- Thanks to those spreading the word
- And to those who received multiple surveys
- Strongly encourage those who want revisions to contact Region H early.



TO: John Doe Water System
FROM: Philip I. Taucer, P.E.
SUBJECT: Region H Water Planning Survey – Reference Data
DATE: July 17, 2017

Introduction:

You were recently contacted regarding an online survey on behalf of the Region H Water Planning Group. Freese and Nichols is the lead consultant for the Planning Group, which is currently engaged in the process of preparing the 2021 Regional Water Plan (RWP) for the region. This plan is submitted to the Texas Water Development Board (TWDB) and will be used to compile the 2022 State Water Plan (SWP). Region H is working with local stakeholders like the John Doe Water System to facilitate accurate reflection of current and future water supply plans for water users in the 2021 Regional Water Plan. Therefore, your input in this matter is critical to the planning process and any assistance you may be able to provide would be appreciated. This document is intended to provide you with an overview of the regional water planning process, summarize available planning data for your entity, and provide references to additional sources of information.

Process Overview:

Region H is tasked with assessing water supplies and demands for Water User Groups (WUGs) in Region H to determine projected future water shortages. A WUG consists of a demand center to which water resources can be allocated. Municipal WUGs are associated with populations, and the projections of these populations are used to estimate future water demands. The development of demand projections is a crucial first step for the planning process. These demands are compared to available water supplies to generate an overview of expected shortages for the future. Once these shortages are identified, projects are recommended to meet future needs. The projects from the RWP will eventually be written into the SWP. This is important to WUGs because proposed water projects must be consistent with the SWP to be eligible for State funding.

Population and Demand Projections:

For the 2021 Regional Water Plan, draft population and water demand projections have been provided by TWDB. Please note that these projections are intended to represent the population within your entity's water utility service area and may not align with city, town, or district boundaries. If you sell water on a wholesale basis to other cities or districts, projections for those users are included under a different entity. References for additional information on TWDB's projection methodology can be found at the end of this memorandum. The table below shows the projected populations and projected water demands (acre-feet/yr) for your WUG through year 2070:

TWDB Draft Projections	2020	2030	2040	2050	2060	2070
WUG Projected Population:	22,042	23,835	25,579	27,338	29,132	30,998
WUG Projected Demand (acre-feet/yr):	4,465	4,725	4,991	5,291	5,628	5,986

We are asking that you review the population and demand projections for your WUG and determine if either:

1. The numbers represent reasonable projections and require no revision, or
2. You would like to revise your projections and can provide information to justify your request, such as a planning level study of your water system.

If you would like to propose revisions to population or water demand projections, you will have the opportunity to do so in the Region H online survey. Please note that TWDB has established criteria for allowable reasons for adjusting projections and acceptable forms of supporting data. If you would like to review these requirements, a link to additional information is provided at the end of this memorandum.

Projects:

Comparing projections of future water demand against existing supplies for each WUG reveals projected water need for that WUG. The planning process then considers and recommends projects that could potentially address projected shortages. These recommendations are intended for planning and guidance and do not mandate that projects must be implemented.

The following is a list of the projects proposed for your entity in the prior (2016) Region H Water Plan, along with the implementation decade (nearest value following implementation year). During the survey, you will be given the opportunity to provide input on these projects and recommend additional projects for your WUG for the 2021 Region H Water Plan.

- 2020 - Municipal water conservation
- 2020 - Water loss reduction

The regional water planning process considers a large number of potential project types including water conservation measures, contract expansions, contractual water transfers, reuse, desalination, major transmission pipelines and canals, reservoirs, and many other options. If you would like to propose additional projects for consideration for your entity, please note that TWDB does require projects to meet certain criteria in order to align with the planning process. For example, project supply volumes listed in the Regional Plan can only reflect the portion of supplies that would be fully reliable under a repeat of the drought of record. Additionally, the following items should not be included as proposed projects or as components of larger projects:

- New facilities associated with internal distribution networks, such as retail distribution within a WUG, that do not convey additional water supply volumes.
- Internal distribution facilities for direct reuse water.
- Wastewater collection systems associated with direct reuse projects.
- Replacement wells that are only required to replace aging wells.
- Other upgrades or maintenance for existing equipment or facilities that do not directly increase volumetric water supply.
- Preventative measures to protect or maintain infrastructure against future water loss or degradation.
- Water storage facilities directly associated with retail water distribution networks.

If you are not sure if a project qualifies for inclusion or have any other questions regarding the survey, please contact Philip Taucer at 713-600-6835 or philip.taucer@freeze.com for additional information.

Notes on Survey Navigation:

The online survey has been designed to be easily navigated by a wide variety of water users and providers. As you proceed through the survey, your responses will be used to guide you to relevant questions and allow you to bypass items not applicable to your entity. It is recommended that prior to accessing the online survey you review the blank survey available through the link at the end of this memorandum to assist in gathering relevant data and determining which portions of the survey will be applicable to your entity.

As you fill out the survey, if you wish to return to an earlier section please only use the “Prev” button imbedded in the survey. Please do NOT use the “Back” button on your browser. You can navigate back to previous sections at any time as long as you have not yet submitted the completed survey. You can also close your browser and return to your stopping point later, but to do so you MUST be on the same computer and allow your browser to store cookies.

Please note that if the person completing the survey for the John Doe Water System represents other surveyed entities as well, they will need to complete one survey at a time and clear cookies from their browser between surveys.

References:

- 2016 Regional Water Plans:
<http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/index.asp>
- TWDB projection methodology:
http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current_docs/project_docs/20170405_pop_muni_proj_method_summ.pdf
- TWDB projection revision criteria:
http://www.regionhwater.org/documents/TWDB_ExhibitCSection2.pdf
- Blank survey form:
http://www.regionhwater.org/documents/2021_RegionH_Water_Plan_Survey.pdf

Introduction

Thank you for logging on to the Region H Water Plan Survey. Your entity was recently contacted regarding this survey because you have been identified by the Texas Water Development Board (TWDB) as a Water User Group, or WUG. A WUG consists of a demand center to which water resources can be allocated, such as a city, town, utility district, or other community.

Your input is requested for this survey on behalf of the Region H Planning Group. The Region H Planning Group is currently in the process of developing the 2021 Regional Water Plan (RWP). This plan is submitted to TWDB and will be used to compile the 2022 State Water Plan. Accurate representation of your water system in the Plan is essential to the securing of TWDB funding for water supply projects and is also necessary for any water rights applications that may be required as part of future supply strategies.

The regional water planning process is intended to be a ground-up, grassroots process, and is defined by the following primary questions:

- Water Demands - How much water is needed?**
- Water Supplies - How much water is available?**
- Water Shortages - What is the difference between how much water is available and needed?**
- Water Management Strategies - What can be done to meet shortages?**

The following questions are intended to collect information regarding your population and water demand projections, existing supplies and infrastructure, and plans for the future. Some of the questions will also reference summary data that was provided to you with the message requesting your completion of this survey. A response by August 21, 2017 would be appreciated to allow proper representation of your entity's water needs in the 2021 Region H Water Plan. If you have any questions, please contact Philip Taucer at philip.taucer@freese.com or by phone at 713-600-6835.

CAUTION: If you wish to return to an earlier portion of the survey to change an answer to a previous question, please use the navigation buttons at the bottom of the page. DO NOT use the "Back" button on your browser.

General Information

* 1. Please enter the name of the entity for which you are completing this survey:

* 2. Please enter your preferred contact information below (required items indicated with *).

Name*

Representing*

Address

Suite, apt., etc.

City

State

ZIP/Postal Code

Email Address

Phone Number

Section 1 – Population and Water Demand Projections

Estimation of future population and water demands is a crucial first step for the planning process. Before completing this section, please review the reference document provided to you with the survey request. The reference document includes TWDB population and water demand projections for your entity. Please note that these projections are intended to represent the population within your entity's WATER UTILITY SERVICE AREA and may not align with city, town, or district boundaries. If you sell water on a wholesale basis to other cities or districts, projections for those users are included elsewhere.

TWDB requires that you provide supporting documentation for proposed modifications to the population or water demand projections. If you indicate that you wish to modify the projections for your entity, we will contact you for additional information.

1. Do you have significant disagreement with and wish to make modifications to the projected population for the water users directly supplied by your entity?

Yes

No

2. If you answered "Yes" on the item above, please describe the primary reason(s) for the adjustments in population.

Study conducted by entity

Study conducted by other party

Other (please specify)

3. Do you have significant disagreement with and wish to make modifications to the projected water demand for the water users directly supplied by your entity?

Yes

No

4. If you answered "Yes" on the item above, please describe the primary reason(s) for the adjustments in water demand projections.

Study conducted by entity

Study conducted by other party

Other (please specify)

Section 2 – Wholesale Water Sales

* 1. Does your entity provide water to other entities on a wholesale basis (i.e. do you provide water to other water suppliers including cities, water supply corporations, water districts, etc.)? If you indicate below that you do not have wholesale customers, the survey will allow you to skip to the next section.

Yes

No

Section 2 – Wholesale Water Sales

If you indicated that you have wholesale water customers, the following items will enable you to enter additional information for up to five wholesale customers. If you indicated that you have more than five wholesale customers, please skip to the last question on this page. The Region H consultant staff will contact you for additional information.

1. The items below ask for contract amounts. Please select the units (millions of gallons, acre-feet, etc.) that you are using for these volumes.

- Thousand gallons (kgal)
- Million gallons (MG)
- Millions of gallons per day (mgd)
- Acre-feet (ac-ft)
- Other (please specify)

2. Please enter the following information for your first wholesale customer.

Customer name

Contract amount (annual)

3. Please enter the following information for your second wholesale customer.

Customer name

Contract amount (annual)

4. Please enter the following information for your third wholesale customer.

Customer name

Contract amount (annual)

5. Please enter the following information for your fourth wholesale customer.

Customer name

Contract amount (annual)

6. Please enter the following information for your fifth wholesale customer.

Customer name

Contract amount (annual)

7. If you indicated that you have more than five wholesale customers, please list the names of your wholesale customers.

Section 3 - Water Supply and Infrastructure

Assessing water supply availability serves as the second key step in the regional water planning process. This portion of the survey includes questions regarding your entity's water supply sources and infrastructure. Some of these items may not be relevant to your particular entity. As you proceed through this section, the survey will allow you to skip questions which are not applicable.

Please proceed to the following page.

Section 3a - Groundwater

* 1. Does your entity own or operate groundwater supply wells? If you select "No", you will be able to skip to the next subsection (Surface Water).

Yes

No

Section 3a - Groundwater

1. Which of following statements best describes the operation of your groundwater wells relative to other sources of water?

- We use groundwater to meet our demands, and we use other sources for emergencies only.
- We use groundwater to meet base demand, and we use other sources to meet peak demands.
- We use both our groundwater wells and our other water sources approximately equally.
- We use other sources to meet base demand, and we use groundwater to meet peak demands.
- We use other sources to meet our demands, and we use groundwater for emergencies only.

Other (please specify)

2. If known, please provide the production capacity of your groundwater system.

Production capacity

Units (gpm, mgd, ac-ft/yr, etc.)

3. If known, please select the aquifer(s) that your entity pumps groundwater from (select all that apply).

- Carrizo-Wilcox
- Gulf Coast (Including Chicot, Evangeline, Jasper, and Catahoula formations)
- Queen City
- Sparta
- Yegua-Jackson
- Not sure
- Other (please specify)

Section 3b - Surface Water

* 1. Does your entity hold any water right permits for surface water? If you select "No" you will be able to skip to the next subsection (Reclaimed Water).

Yes

No

Section 3b - Surface Water

1. Which of following statements best describes your use of surface water relative to other sources of water?

- We use surface water to meet our demands, and we use other sources for emergencies only.
- We use surface water to meet base demand, and we use other sources to meet peak demands.
- We use both our surface water and our other water sources approximately equally.
- We use other sources to meet base demand, and we use surface water to meet peak demands.
- We use other sources to meet our demands, and we use surface water for emergencies only.

Other (please specify)

2. If known, please provide the production capacity of your surface water system.

Production capacity

Units (gpm, mgd, ac-ft/yr, etc.)

3. Pleaser list the TCEQ water right numbers for any surface water rights that your entity owns.

Section 3c - Reclaimed Water

Reclaimed systems include direct reuse (conveyed directly from a treatment plant to points of use by pipeline) or indirect use (discharged to a stream or other conveyance and diverted at another location downstream).

* 1. Does your entity currently utilize reclaimed water for supply? If you select "No" you will be able to skip to the next subsection (Contracted/Purchased Supply).

Yes

No

Section 3c - Reclaimed Water

The following items will enable you to enter additional information on your reclaimed supplies. Reclaimed systems can include direct reuse (conveyed directly from treatment plant to use location by pipeline) or indirect use (discharged to a stream or other conveyance and diverted at another location downstream). The Region H consultant staff will contact you for additional information.

1. Please specify the type of reclaimed water that your entity utilizes.

- Direct reuse
- Indirect reuse
- Both

2. Does your entity sell (wholesale) reclaimed water to another entity?

- Yes
- No

3. Does your entity purchase reclaimed water from another entity?

- Yes
- No

4. If you utilize reclaimed supplies, please describe what water demands they are used to meet.

Section 3d – Contracted / Purchased Supply

Many entities purchase water from others. This section presents several questions regarding your purchase of raw or treated water from other entities.

* 1. Does your entity have existing contracts or agreements to purchase water from other entities (cities, regional water authorities, river authorities, water districts, etc.)? If you select "No" you will be able to skip to the next subsection (Water Treatment Plant Capacity).

Yes

No

Section 3d – Contracted / Purchased Supply

If you indicated that you have contracts or agreements to purchase supplies, the following items will enable you to enter additional information for up to five contracts. If you indicated that you have more than five contracts to purchase water, please skip to the end of the page and select "Next." The Region H consultant staff will contact you for additional information.

1. Please input the number of supply contracts and agreements to purchase water supplies that you have.

2. The items below ask for contract and deliverable (if infrastructure-limited) supply volumes. Please select the units (millions of gallons, acre-feet, etc.) that you are using for these volumes.

- Thousand gallons (kgal)
- Million gallons (MG)
- Millions of gallons per day (mgd)
- Acre-feet (ac-ft)
- Other (please specify)

3. Please enter the following information for your first supplier.

Supplier name

Contract amount (annual)

Deliverable amount

4. Please enter the following information for your second supplier.

Supplier name

Contract amount (annual)

Deliverable amount

5. Please enter the following information for your third supplier.

Supplier name

Contract amount (annual)

Deliverable amount

6. Please enter the following information for your fourth supplier.

Supplier name

Contract amount (annual)

Deliverable amount

7. Please enter the following information for your fifth supplier.

Supplier name

Contract amount (annual)

Deliverable amount

8. If you indicated that you have more than five suppliers, please list the names of your suppliers.

A large, empty rectangular box with a thin black border, intended for the user to list the names of their suppliers. The box is positioned in the upper left quadrant of the page.

Section 3e - Water Treatment Plant Capacity

* 1. Does your entity own and/or operate any water treatment plants (WTPs)? If you select "No" you will be able to skip to the next section (Emergency Interconnects).

Yes

No

Section 3e - Water Treatment Plant Capacity

1. Please enter the number of WTPs you own and/or operate.

2. If known, please provide the production capacity of your water treatment system.

Production capacity

Units (gpm, mgd, ac-ft/yr, etc.)

Section 4 - Emergency Interconnects

The Regional Water Planning Group is required by the TWDB to collect information on existing major water infrastructure facilities that may be used for emergency interconnects. Please note that this information is to be submitted to TWDB's Executive Administrator and will be kept confidential. This data will NOT be included in the Regional Water Plan. For additional information, please consult Texas Administrative Code Title 31, Part 10, Rule §357.42. If you indicate that your entity has emergency interconnects with other systems, the Region H consultant team will contact you for additional information.

* 1. Does your entity have existing emergency interconnect facilities either to supply your entity or provide emergency supply to another user?

Yes

No

Section 5 – Projects

The next key component of the water planning process is consideration of future projects. In the Regional Planning process, projects are activities with non-zero capital cost that would develop, deliver, treat, or conserve water for an entity. Comparing projections of future water demand against existing supplies for each WUG reveals the projected water need for that WUG and any other entity that supplies it. The planning process then considers and recommends projects that could potentially address projected shortages.

These recommendations are intended for planning and guidance and do not mandate that projects must be implemented. However, inclusion in the Regional Plan is essential to the securing of TWDB funding for water supply projects and is also necessary for any water rights applications that may be required as part of future supply strategies.

Before answering the questions in this section, please review the packet that was sent to you for information on any projects that were recommended for your entity in the 2016 Region H Water Plan. Note that if your entity was not previously listed as a WUG, there may not be specific project information in the 2016 Region H Water Plan.

Please proceed to the following page.

Section 5a – Projects from the 2016 Regional Water Plan

* 1. Do you agree with the recommended projects listed for your entity in the 2016 Regional Water Plan? If your answer is N/A, you may skip to the next subsection (Additional Projects).

- N/A – no projects listed in 2016 Regional Plan
- Yes
- No

If you answered "No", please list the projects that you disagree with.

Section 5a – Projects from the 2016 Regional Water Plan

1. Have you already implemented any of the recommended projects listed for your entity in the 2016 Regional Water Plan?

Yes

No

If you answered "Yes", please list the projects that you have implemented.

2. Are you currently in the process of implementing (permitting, design, or construction) any projects from the 2016 Regional Water Plan listed above?

Yes

No

If you answered "Yes", please list the projects that you are in the process of implementing along with the estimated implementation date.

3. Have the implementation (active use) dates of any of the projects recommended in the 2016 Regional Water Plan changed? Please note that the plan reflects data in ten year intervals, so dates are not shown for intermediate years. For example, projects starting in 2021 or 2029 would both be reflected in the Regional Plan under Year 2030.

Yes

No

If you answered "Yes", please list the projects that are expected to change in schedule along with the expected implementation date.

Section 5b – Additional Projects

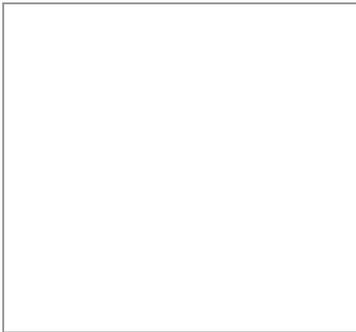
Before answering the questions in this section, please review the packet that was sent to you for information on criteria for inclusion of projects.

* 1. Are there any projects which you would like to propose or add for consideration?

Yes

No

2. If you answered “Yes” to the item above, please list any projects you would like to propose. The Region H consultant team will contact you for more information.



Section 6 - Water Conservation

An understanding of local water conservation practices is a key component of the regional planning process. Municipal conservation in particular has been identified as a significant strategy for meeting projected shortages in prior Region H Water Plans.

* 1. Does your entity have a Water Conservation Plan? If so, more information on where to submit this data will be provided at the end of the survey.

- Yes
- No

The following item will ask for information on a number of common water conservation measures. Note that this section applies specifically to measures that are applied regularly or year-round. Temporary strategies such as those used for drought response will be discussed separately in a later section. Please indicate if you have implemented a measure in the past, if you are currently implementing the measure, and if you would consider implementing the measure in the future. Please select all that apply. For example, if your entity currently uses days per week watering restrictions and intends to continue applying this measure in the future, select both of the relevant checkboxes on the row for days per week watering restrictions.

2. Please provide input on potential water conservation measures.

	Past strategy?	Current Strategy?	Would continue / would consider in future?
System audits / leak detection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Residential watering audits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial water audits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conservation pricing structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prohibition on wasting water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public and / or school education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time of day watering restriction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Days per week watering restriction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clothes washer incentive program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletic field / golf course conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Municipal landscape conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection metering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. If you have implemented or are considering any additional measures, please describe them below. If available, please note water savings, implementation date, and startup and annual costs.

A large, empty rectangular box with a thin black border, intended for the user to provide details about additional measures implemented or considered, including water savings, implementation dates, and costs.

Section 7 - Drought Contingency

This section will ask a series of questions regarding your entity's plans for responding to drought conditions.

* 1. Does your entity have a Drought Contingency Plan? If so, more information on where to submit this data will be provided at the end of the survey.

Yes

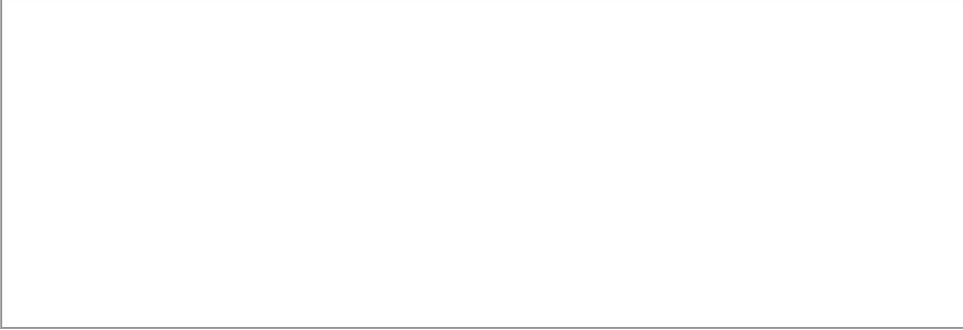
No

The following item will ask for information on a number of common drought contingency measures. Note that this section applies specifically to TEMPORARY measures enacted in response to drought conditions or other emergencies which reduce water supplies. Please indicate if you have implemented a measure in the previous five years and if you would consider implementing the measure in the future.

2. Please provide input on potential drought contingency measures.

	Implemented in previous 10 years?	Would consider implementing in future?
System audits / leak detection	<input type="checkbox"/>	<input type="checkbox"/>
Residential watering audits	<input type="checkbox"/>	<input type="checkbox"/>
Industrial water audits	<input type="checkbox"/>	<input type="checkbox"/>
Contingency pricing structure	<input type="checkbox"/>	<input type="checkbox"/>
Prohibition on wasting water	<input type="checkbox"/>	<input type="checkbox"/>
Public and / or school education	<input type="checkbox"/>	<input type="checkbox"/>
Time-of-day watering restriction	<input type="checkbox"/>	<input type="checkbox"/>
Days per week watering restriction	<input type="checkbox"/>	<input type="checkbox"/>
Water rationing	<input type="checkbox"/>	<input type="checkbox"/>
Athletic field / golf course watering limits	<input type="checkbox"/>	<input type="checkbox"/>
Municipal landscape watering limits	<input type="checkbox"/>	<input type="checkbox"/>
Pool / pond filling restrictions	<input type="checkbox"/>	<input type="checkbox"/>

3. If you have implemented or are considering any additional measures, please describe them below. If available, please note water savings, implementation date, and costs.

A large, empty rectangular box with a thin black border, intended for the user to provide details about additional measures implemented or considered, including water savings, implementation dates, and costs.

Supporting Documentation

Several of the items earlier in the survey indicated the need for supporting documentation. This documentation should be submitted to philip.taucer@freese.com. Please remember to include your entity name in the subject line of the e-mail.

If applicable to your entity, please include:

- Water Conservation Plans
- Drought Contingency Plans



Survey Completed

Thank you for your input. Your information will assist in the development of the 2021 Region H Water Plan. If you have any questions related to this survey or the regional planning process, please contact Philip Taucer by e-mail at philip.taucer@freese.com or at 713-600-6835.

Agenda Item 6

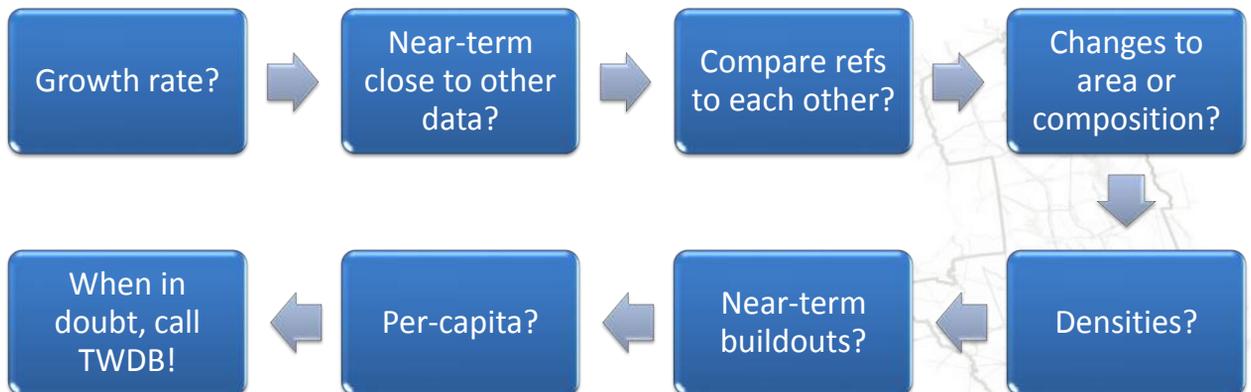
Receive presentation on and discuss TWDB data, projections, and the process for requesting revised projections and make recommendations regarding revised projections.

Agenda Item 6 Projections and Revision Process

- Projections developed by TWDB
- Adapted 2016 RWP values
 - New WUGs
 - New utility focus
- Major undertaking
 - Step 1 – Estimate Year 2010 population
 - Step 2 – Apply growth rate
 - Step 3 – Consider buildout
 - Step 4 – Calculate demands



Agenda Item 6 Projections and Revision Process



Agenda Item 6 Projections and Revision Process

- Process and projections appear reasonable
- Still likely to have revisions
 - Annexations
 - Requests from WUGs
 - Anomalies identified by RWPG
- Additional background data available
 - Historical data
 - Details behind gpcd
- Currently in review
- Support for revision requests



Agenda Item 6 Projections and Revision Process

Criteria for Adjustment

- 2010 pop. differs from baseline
- Growth rate difference
- Limitations or buildout
- Updated information or area

Data Required

- Connections or pop. number
- Estimates for cities by TDC or regional council
- Documentation from official of growth limits
- Documentation and maps for area changes
- Other data at RWPG discretion

Agenda Item 6

Projections and Revision Process

- TWDB projections and detailed data:

http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/current_docs.asp



TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Austin County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base Dry GPCD	Historical GPCD Estimates							
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014		2010	2011	2012	2013	2014	2015		
	AUSTIN COUNTY WSC	1,447	1,476	1,229	1,266	1,528	1,581	198	235	209		207	185	202	122	142	152	146	108
BELLVILLE	3,794	3,794	4,097	4,097	4,097	4,097	899	1,216	888	914	788	772	211	286	194	199	172	168	
SEALY	6,019	6,019	6,019	6,019	7,151	7,151	1,013	1,309	980	1,029	1,038	885	192	150	194	145	153	130	110
WALLIS	1,252	1,252	1,252	1,252	1,252	1,252	135	166	134	142	136	138	117	97	118	96	101	97	99
WEST END WSC	1,131	1,188	973	1,188	1,129	1,124	107	142	113	123	106	108	107	84	107	103	93	84	86

Brazoria County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base Dry GPCD	Historical GPCD Estimates							
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014		2010	2011	2012	2013	2014	2015		
	ALVIN	24,236	24,436	25,000	24,236	24,350	24,350	2,703	3,269	2,691		2,583	2,599	2,787	164	100	119	96	95
ANGLETON	18,431	19,455	19,455	19,455	19,443	19,437	1,971	2,180	2,005	1,927	2,094	2,116	101	95	100	92	88	96	97
BRAZORIA	3,019	3,036	3,008	3,008	3,016	3,016	294	346	312	328	308	308	100	87	102	92	97	91	91
BRAZORIA COUNTY MUD 2	3,807	3,804	3,810	3,807	3,786	3,786	1,312	1,589	1,305	1,325	682	234	373	308	373	306	311	161	55
BRAZORIA COUNTY MUD 21	3,648	3,592	4,179	3,957	4,329	4,617	425	565	556	549	507	529	137	104	140	119	124	105	102
BRAZORIA COUNTY MUD 25	3,282	3,434	3,784	3,853	3,682	3,941	259	370	321	361	359	376	96	71	96	76	84	87	85
BRAZORIA COUNTY MUD 29	2,022	2,067	2,222	2,317	2,551	2,570	195	232	222	194	197	236	100	86	100	89	75	69	82
BRAZORIA COUNTY MUD 3	4,230	4,230	4,230	4,230	4,476	5,082	453	687	522	504	471	436	145	96	145	110	106	94	77
BRAZORIA COUNTY MUD 31	786	924	1,359	1,686	2,103	2,493	252	252	188	226	202	232	243	286	243	123	120	86	83
BRAZORIA COUNTY MUD 6	5,877	5,877	6,859	6,859	7,054	7,054	937	1,306	1,056	1,014	988	910	198	142	198	138	132	125	115
CLUTE	11,277	10,854	10,485	10,485	11,277	11,277	1,505	1,612	1,372	1,428	1,289	1,280	124	119	133	117	122	102	101
DANBURY	1,715	1,735	1,676	1,725	1,725	1,725	181	197	159	164	152	156	100	94	102	85	85	79	81
FREEPORT	12,408	12,407	12,393	12,381	12,376	12,416	1,462	1,498	1,386	1,662	1,363	1,444	109	105	108	100	120	98	104
HILLCREST VILLAGE	743	743	746	746	684	684	106	128	94	85	92	86	153	127	154	113	101	120	112
LAKE JACKSON	26,495	26,495	26,495	27,631	27,631	27,631	4,459	5,615	4,526	4,598	3,766	3,766	183	150	189	152	149	122	122
MANVEL	407	459	486	1,047	1,047	1,061	150	176	130	162	162	159	139	329	343	240	138	133	133
OYSTER CREEK	1,149	1,149	1,149	1,071	1,071	1,071	225	263	249	259	204	238	206	175	204	194	216	170	198
PEARLAND	83,299	83,299	83,299	80,345	84,492	90,225	8,719	12,612	12,612	11,815	12,249	12,606	135	93	135	135	131	129	125
QUADVEST	479	546	548	593	625	688	79	125	95	98	90	92	207	147	204	155	147	128	120
RICHWOOD	3,643	3,686	3,785	3,785	3,785	3,785	419	405	343	352	145	375	101	103	98	81	83	34	88
SEDONA LAKES MUD 1	384	0	606	738	1,035	1,193	0	0	126	147	166	205	144	0	0	186	178	144	153
SURFSIDE BEACH	565	565	565	565	565	565	164	164	164	164	164	179	258	258	258	258	258	258	282
SWEENEY	3,582	3,582	3,977	3,951	4,041	4,041	411	513	404	412	409	434	139	102	128	91	93	90	96
TDCJ RAMSEY AREA	1,863	1,863	2,139	2,139	2,139	2,139	1,478	1,591	1,558	1,558	1,558	1,558	763	708	763	650	650	650	650
VARNER CREEK UD	1,338	1,338	1,600	1,600	1,600	1,600	191	303	192	197	184	182	135	128	202	107	110	103	102
WEST COLUMBIA	3,929	3,929	3,929	3,606	3,606	3,606	420	492	492	419	419	411	109	95	112	112	104	104	102

Chambers

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base Dry GPCD	Historical GPCD Estimates							
	2010	2011	2012	2013	2014	2010	2011	2012	2013	2014		2010	2011	2012	2013	2014	2015		
	ANAHUAC	2,363	2,363	2,095	2,095	2,095	2,095	289	289	243		186	216	206	114	109	109	103	79
BAYTOWN	4,608	4,648	4,514	5,081	4,593	4,452	662	707	603	574	685	679	129	128	136	119	101	133	136
CHAMBERS COUNTY MUD 1	2,748	2,748	2,748	2,754	2,754	2,694	226	252	252	208	208	208	82	73	82	82	67	67	69
MONT BELVIEU	4,738	4,738	4,830	4,830	5,549	5,695	1,711	1,727	1,269	1,299	1,282	1,363	397	322	325	234	240	206	214
TRINITY BAY CONSERVATION DISTRICT	9,818	10,116	10,426	10,808	10,900	11,427	1,168	1,639	1,455	1,450	1,440	1,471	167	106	145	125	120	118	115

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Fort Bend County WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Historical GPCD Estimates								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
	Base Dry																		
BLUE RIDGE WEST MUD	7,301	7,301	7,289	7,295	7,444	7,352	892	1,048	913	949	762	703	128	109	128	112	116	91	85
FIRST COLONY MUD 9	8,031	8,018	8,007	8,046	8,050	7,348	1,146	1,483	1,185	1,161	993	1,017	165	127	165	132	129	110	124
FORT BEND COUNTY FWSD 1	786	819	948	1,456	1,503	1,601	29	64	85	119	123	147	69	33	69	80	73	73	82
FORT BEND COUNTY FWSD 2	1,669	1,803	1,830	2,248	2,132	2,236	134	176	159	173	156	158	87	72	87	78	69	65	63
FORT BEND COUNTY MUD 111	3,201	3,201	3,405	3,405	3,237	3,240	703	1,011	764	748	686	601	282	196	282	200	196	189	166
FORT BEND COUNTY MUD 112	3,461	4,101	3,992	4,002	4,008	4,389	676	873	691	748	726	643	225	174	190	155	167	162	131
FORT BEND COUNTY MUD 115	1,661	1,661	1,665	1,669	1,707	1,858	1,450	803	175	442	499	882	432	779	432	94	236	261	424
FORT BEND COUNTY MUD 116	3,802	3,799	3,808	3,816	3,895	4,590	605	783	613	579	545	629	212	142	184	144	136	125	122
FORT BEND COUNTY MUD 121	2,989	4,071	3,099	3,099	3,303	3,336	0	524	401	433	395	397	115	0	115	115	125	107	106
FORT BEND COUNTY MUD 128	395	395	1,401	1,401	3,009	3,009	0	99	225	416	683	1,017	209	0	224	144	265	203	302
FORT BEND COUNTY MUD 129	2,710	2,818	2,951	3,212	3,212	3,825	504	753	818	658	653	687	226	166	238	248	183	181	160
FORT BEND COUNTY MUD 140	1,410	1,410	1,419	1,479	1,590	1,899	0	228	173	181	169	188	157	0	144	109	109	95	88
FORT BEND COUNTY MUD 149	382	382	1,629	2,256	2,775	3,219	42	42	8	319	326	802	98	98	98	5	126	105	222
FORT BEND COUNTY MUD 152	499	533	654	708	1,104	766	63	110	77	94	89	143	184	113	184	105	118	72	167
FORT BEND COUNTY MUD 155	1,560	1,569	1,797	2,013	2,397	2,397	153	258	180	248	237	304	147	88	147	90	110	88	113
FORT BEND COUNTY MUD 158	820	854	1,119	1,179	1,580	1,871	89	167	113	137	144	171	174	97	174	90	104	81	81
FORT BEND COUNTY MUD 162	1,800	1,926	2,106	2,406	2,865	2,919	133	203	167	209	204	216	94	66	94	71	77	64	66
FORT BEND COUNTY MUD 187	2,544	0	0	0	2,544	2,544	0	0	0	0	204	331	71	0	0	0	0	71	116
FORT BEND COUNTY MUD 23	10,290	11,309	11,497	11,764	11,416	11,757	1,174	1,410	1,120	1,141	1,151	1,252	106	102	111	87	87	90	95
FORT BEND COUNTY MUD 24	949	1,039	1,132	1,369	1,715	1,963	86	107	95	102	116	149	97	81	92	75	67	60	68
FORT BEND COUNTY MUD 25	11,743	12,619	13,945	13,735	14,095	14,314	1,510	2,081	1,651	1,757	1,572	1,618	122	115	147	106	114	100	101
FORT BEND COUNTY MUD 26	4,360	4,364	4,369	4,384	4,376	4,410	390	545	423	382	354	378	111	80	111	87	78	72	77
FORT BEND COUNTY MUD 42	3,909	3,941	4,023	4,461	4,458	4,452	623	784	658	639	540	581	178	142	178	146	128	108	116
FORT BEND COUNTY MUD 46	1,860	1,860	1,857	1,857	2,013	2,271	791	498	400	401	363	376	239	380	239	192	193	161	148
FORT BEND COUNTY MUD 47	1,171	1,171	1,249	1,305	1,296	1,193	140	140	160	198	191	185	107	107	107	115	136	131	138
FORT BEND COUNTY MUD 48	1,962	1,953	2,361	2,757	3,252	3,195	182	259	210	241	233	291	118	83	118	79	78	64	81
FORT BEND COUNTY MUD 49	1,055	1,062	1,071	1,064	1,075	1,081	138	172	146	134	119	123	145	117	145	121	113	99	101
FORT BEND COUNTY MUD 5	1,086	0	870	1,086	1,389	1,560	0	0	112	128	120	143	77	0	0	114	105	77	82
FORT BEND COUNTY MUD 67	3,269	3,778	3,444	3,447	3,494	3,316	559	821	640	633	565	511	199	153	194	166	164	144	137
FORT BEND COUNTY MUD 68	3,637	3,637	3,637	3,637	3,643	3,613	497	711	510	602	462	445	175	122	175	125	148	113	110
FORT BEND COUNTY MUD 69	1,590	1,590	1,725	1,731	1,774	1,653	336	488	353	362	337	314	274	189	274	183	187	170	170
FORT BEND COUNTY MUD 81	2,347	2,426	2,426	2,716	2,739	2,831	827	1,468	1,468	871	1,097	867	542	315	540	540	286	358	273
FORT BEND COUNTY WCID 2	37,500	35,085	37,008	37,112	37,112	38,437	4,811	7,394	5,484	6,266	5,820	6,075	182	115	188	132	151	140	141
FORT BEND COUNTY WCID 3	622	597	656	644	650	653	234	377	310	276	221	193	533	336	563	422	383	304	264
FULSHEAR	1,134	2,748	3,173	3,598	4,023	5,140	101	154	455	755	1,056	1,232	115	80	50	128	187	234	214
GREATWOOD CRU	12,265	12,362	10,855	14,610	14,352	14,697	1,703	3,089	1,540	2,666	2,230	2,166	115	124	223	127	163	139	132
HOUSTON CRU	37,952	38,156	38,725	39,617	40,198	41,127	5,734	8,723	6,537	6,435	5,425	6,448	190	135	204	151	145	120	140
KATY	4,490	4,610	4,610	4,646	4,947	4,947	833	1,163	895	979	924	986	226	166	225	173	188	167	178
KENDLETON	382	382	382	380	451	459	125	125	125	84	58	106	292	292	292	292	196	115	206
MEADOWCREEK MUD	2,381	2,375	2,370	2,397	2,396	2,397	260	344	221	253	224	231	129	97	129	83	94	83	86
MEADOWS PLACE	4,698	5,254	4,658	4,658	4,658	4,658	571	828	703	589	506	483	157	108	141	135	113	97	93
MISSOURI CITY	1,947	1,986	2,112	2,292	2,632	2,757	215	297	2,894	4,157	4,149	4,103	149	99	133	1,223	1,619	1,407	1,328
NEEDVILLE	2,834	2,834	2,834	2,834	2,834	2,846	268	340	287	284	284	294	103	84	107	90	90	90	92
INBWA CRU ¹	138,250	160,087	162,704	179,686	196,240	203,324	25,485	36,714	30,854	29,341	29,438	29,789	206	165	205	169	146	134	131
PALMER PLANTATION MUD 1	1,625	1,629	1,658	1,709	1,762	1,788	325	399	346	322	268	320	219	179	219	186	168	136	160

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Fort Bend County (cont.)

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
														Dry					
PALMER PLANTATION MUD 2	2,448	2,450	2,466	2,469	2,463	2,487	218	332	371	339	277	302	121	80	121	134	123	100	108
PEARLAND	2,985	2,985	2,985	2,879	3,028	3,233	312	452	452	423	439	452	135	93	135	135	131	129	125
PECAN GROVE MUD 1	12,926	14,056	14,412	14,037	14,017	14,023	2,156	2,817	2,248	2,612	2,053	2,132	166	149	179	139	166	131	136
PLANTATION MUD	4,084	4,084	4,084	4,087	4,018	4,307	437	496	496	431	388	393	103	96	108	108	94	86	81
QUADVEST	1,181	1,347	1,351	1,463	1,541	1,696	195	308	234	241	222	227	207	147	204	155	147	128	120
QUAIL VALLEY UD	12,384	12,407	12,437	12,889	12,738	12,903	1,656	2,163	1,774	1,516	1,542	1,407	156	119	156	127	105	108	97
RICHMOND	12,165	13,952	12,262	12,932	13,844	12,610	1,427	1,710	1,441	1,771	1,809	1,622	155	105	109	105	122	117	115
ROSENBERG	30,618	30,357	34,555	35,408	35,042	36,047	3,509	4,070	3,551	3,575	3,604	3,768	114	102	120	92	90	92	93
ROYAL VALLEY UTILITIES	1,620	1,620	1,614	1,846	2,130	2,377	0	520	356	367	334	331	287	0	287	197	177	140	124
SIENNA PLANTATION CRU	20,361	21,087	22,724	22,796	23,040	23,571	2,927	4,063	1,831	1,950	3,594	2,608	218	128	172	72	76	139	99
SUGAR LAND	87,822	87,822	87,822	88,330	85,336	90,379	17,821	23,832	17,841	18,883	17,800	16,782	246	181	242	181	191	186	166
TDCJ JESTER UNITS	1,521	1,521	1,521	1,521	1,521	1,521	625	568	550	550	550	550	333	367	333	323	323	323	323
THUNDERBIRD UD	5,159	5,190	5,183	5,156	5,239	5,216	763	986	798	840	758	751	170	132	170	137	145	129	129
WHCRAWA CRU ²	8,065	8,446	8,801	9,161	9,418	9,524	975	1,152	1,062	1,090	1,004	1,041	123	108	122	108	106	95	98

Galveston County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
														Dry					
BACLIFF MUD	7,092	7,473	7,253	7,333	6,367	6,367	635	698	620	596	559	593	75	80	83	76	73	78	83
BAYVIEW MUD	1,510	1,528	1,396	1,448	1,453	1,585	112	144	134	138	133	122	85	66	84	86	85	81	69
BOLIVAR PENINSULA SUD	2,394	2,579	2,796	2,972	2,972	3,244	760	936	918	979	1,002	963	68	284	324	293	294	301	265
FRIENDSWOOD	24,578	25,029	25,029	27,128	27,895	29,530	3,083	4,762	4,762	4,125	4,118	3,839	166	112	170	170	136	132	116
GALVESTON	47,743	47,743	48,444	47,800	47,743	47,743	15,413	16,280	15,501	15,407	16,112	15,762	300	288	304	286	288	301	295
GALVESTON COUNTY FWSD 6	1,200	1,200	1,200	1,200	1,800	1,800	188	254	201	201	223	227	189	140	189	149	149	111	113
GALVESTON COUNTY MUD 12	2,272	1,654	1,949	1,969	1,969	1,949	268	295	224	245	253	308	116	105	159	103	111	115	141
GALVESTON COUNTY WCID 1	19,995	21,571	21,571	21,899	21,899	21,899	2,180	2,631	2,075	2,084	2,146	2,227	109	97	109	86	85	88	91
GALVESTON COUNTY WCID 12	3,758	3,758	3,337	3,381	3,061	3,913	849	896	878	842	802	728	213	202	213	235	222	234	166
GALVESTON COUNTY WCID 8	5,580	6,003	6,978	6,978	7,500	7,500	564	673	587	587	570	586	104	90	100	75	75	68	70
HITCHCOCK	6,838	6,838	7,064	7,064	7,104	7,349	815	864	808	819	788	768	109	106	113	102	103	99	93
JAMAICA BEACH	981	981	981	981	981	981	236	272	222	269	188	195	243	215	248	202	245	171	178
LA MARQUE	15,563	15,902	15,902	15,902	16,125	15,902	2,522	2,496	2,607	2,809	2,755	2,858	151	145	140	146	158	153	160
LEAGUE CITY	71,961	78,495	88,309	83,448	89,209	92,574	10,156	11,764	11,184	11,252	11,667	11,438	127	126	134	113	120	117	110
SAN LEON MUD	5,032	5,032	5,032	5,032	5,032	5,032	593	640	596	536	562	594	63	105	113	106	95	100	105
TEXAS CITY	45,111	42,218	45,139	44,817	44,817	45,219	5,870	6,571	5,955	4,964	4,997	5,547	133	116	139	118	99	100	110

Harris County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
														Dry					
BAKER ROAD MUD	963	1,013	1,030	1,038	1,030	1,038	216	264	229	226	196	196	233	200	233	199	194	170	168
BAYBROOK MUD 1	780	780	780	780	780	780	199	231	231	160	154	190	264	228	264	264	183	176	217
BAYTOWN	67,067	67,653	65,701	73,944	66,854	64,796	9,628	10,289	8,781	8,353	9,973	9,883	129	128	136	119	101	133	136
BELLAIRE	18,612	18,728	17,109	16,855	16,855	17,849	3,316	3,998	3,368	3,475	3,097	3,173	207	159	191	176	184	164	159
BLUE BELL MANOR UTILITY	2,463	2,023	2,011	2,011	2,011	2,397	464	475	436	427	422	423	209	168	209	194	190	187	158
BUNKER HILL VILLAGE	3,716	3,811	3,716	3,740	3,591	3,325	1,186	1,678	1,413	1,230	1,126	1,126	391	285	393	339	294	280	302

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Harris County (cont.)

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base		Historical GPCD Estimates						
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
CHCRWA CRU ³	50,165	51,609	51,389	52,390	49,653	50,781	4,880	5,308	4,788	4,966	5,083	5,075	92	87	92	83	85	91	89
CHIMNEY HILL MUD	5,366	5,372	5,366	5,366	5,548	5,360	517	603	528	544	516	526	103	86	100	88	90	83	88
CLEAR BROOK CITY MUD	16,940	16,940	16,940	20,669	20,787	20,774	1,867	1,666	1,666	2,055	2,022	1,966	91	98	88	88	89	87	85
CLEAR LAKE CITY WATER AUTHORITY	67,008	67,008	67,008	67,008	67,008	67,008	9,571	13,091	9,521	8,926	8,446	8,213	174	128	174	127	119	113	109
COUNTRY TERRACE WATER	1,401	1,401	1,401	1,401	1,401	1,401	149	149	149	149	149	149	95	95	95	95	95	95	95
CROSBY MUD	2,871	2,616	2,426	2,531	1,867	1,915	410	502	434	472	468	490	118	127	171	160	167	224	229
DEER PARK	31,200	30,000	30,000	30,000	32,000	32,000	4,533	5,085	4,951	5,142	5,461	4,575	121	130	151	147	153	152	128
DOUGLAS UTILITY	2,564	2,564	2,564	2,448	2,451	2,456	295	295	295	274	268	307	91	103	103	103	100	97	112
EL DORADO UD	4,104	4,091	4,295	4,275	4,170	4,212	434	417	368	358	342	379	92	94	91	76	75	73	80
FOREST HILLS MUD	1,836	1,860	1,845	1,842	2,259	2,198	193	220	189	197	216	267	107	94	105	92	95	86	108
FORT BEND COUNTY WCID 2	1,299	1,215	1,282	1,286	1,286	1,331	167	256	190	217	202	210	182	115	188	132	151	140	141
FRIENDSWOOD	10,572	10,766	10,766	11,669	11,999	12,702	1,326	2,048	2,048	1,774	1,771	1,651	166	112	170	170	136	132	116
GALENA PARK	10,887	10,887	10,887	10,587	11,423	11,489	834	977	912	895	770	753	78	68	80	75	75	60	58
GREEN TRAILS MUD	1,983	1,983	1,983	2,374	2,379	2,390	562	668	702	533	282	520	282	253	300	316	200	106	194
GREENWOOD UD	4,011	5,183	5,621	6,048	6,982	7,185	331	335	348	383	325	428	75	74	58	55	57	42	53
HARRIS COUNTY FWSO 1-A	1,421	1,421	1,322	1,234	1,231	1,234	189	141	143	140	97	121	88	119	88	97	101	70	88
HARRIS COUNTY FWSO 27	1,791	1,745	1,745	1,745	2,105	1,874	202	203	212	212	196	183	104	101	104	109	109	83	87
HARRIS COUNTY FWSO 58	1,584	1,695	1,695	1,681	1,681	1,637	215	342	342	219	185	203	193	121	180	180	116	98	111
HARRIS COUNTY MUD 106	3,784	3,778	3,778	3,775	3,665	3,594	702	519	165	646	539	503	255	166	123	39	153	131	125
HARRIS COUNTY MUD 11	2,778	2,806	2,969	3,043	3,181	3,261	303	338	301	302	313	332	102	98	108	90	89	88	91
HARRIS COUNTY MUD 119	7,479	7,479	7,479	7,024	6,993	7,189	694	694	694	787	680	694	85	83	83	83	100	87	86
HARRIS COUNTY MUD 122	1,157	1,157	1,157	1,157	1,106	1,149	88	130	130	127	112	128	100	68	100	100	98	91	100
HARRIS COUNTY MUD 132	5,694	5,694	6,720	6,720	5,334	5,334	1,148	1,606	1,606	1,304	1,094	983	170	180	252	213	173	183	164
HARRIS COUNTY MUD 148	3,840	2,693	2,693	3,547	3,547	3,386	319	345	276	297	298	329	73	74	115	91	75	75	87
HARRIS COUNTY MUD 151	6,347	6,347	6,347	6,373	6,493	6,304	1,011	1,177	1,177	986	846	825	158	142	166	166	138	116	117
HARRIS COUNTY MUD 152	7,452	7,452	7,452	7,495	7,738	7,332	889	1,052	971	938	809	865	128	107	126	116	112	93	105
HARRIS COUNTY MUD 153	7,501	7,617	7,667	7,800	7,809	7,707	1,113	1,396	1,206	1,118	1,047	994	159	132	164	140	128	120	115
HARRIS COUNTY MUD 154	7,880	7,918	8,147	8,156	8,133	8,144	807	1,118	993	1,080	960	976	122	91	126	109	118	105	107
HARRIS COUNTY MUD 158	6,324	6,392	6,418	6,433	6,293	6,369	654	762	601	598	623	578	103	92	106	84	83	88	81
HARRIS COUNTY MUD 180	5,297	4,495	4,495	4,807	5,274	4,881	516	524	525	456	469	543	88	87	104	104	85	79	99
HARRIS COUNTY MUD 189	3,897	3,897	3,899	4,147	4,163	4,176	589	602	551	604	598	573	93	135	138	126	130	128	123
HARRIS COUNTY MUD 216	1,046	977	977	984	984	2,677	167	165	162	174	208	273	137	143	150	148	158	188	91
HARRIS COUNTY MUD 221	3,555	3,663	3,663	4,812	4,242	4,525	508	385	343	383	342	428	93	128	94	84	71	72	85
HARRIS COUNTY MUD 23	3,881	3,881	3,881	2,995	3,425	3,425	390	338	353	352	325	347	78	90	78	81	105	85	90
HARRIS COUNTY MUD 278	6,198	6,960	6,546	6,765	7,392	7,731	635	742	672	688	793	842	95	91	95	92	91	96	97
HARRIS COUNTY MUD 290	4,322	4,461	6,606	7,533	8,202	8,172	0	575	929	980	990	1,018	115	0	115	126	116	108	111
HARRIS COUNTY MUD 321	890	0	0	0	840	861	0	0	0	0	181	214	193	0	0	0	0	193	222
HARRIS COUNTY MUD 342	2,860	2,392	2,937	4,166	4,170	4,170	416	520	425	408	395	422	166	130	194	129	87	85	90
HARRIS COUNTY MUD 344	2,676	2,664	3,102	3,826	3,980	4,106	478	693	598	535	537	501	232	160	232	172	125	120	109
HARRIS COUNTY MUD 345	3,591	3,591	3,591	3,591	3,599	3,615	755	940	970	970	828	744	211	188	234	241	241	205	184
HARRIS COUNTY MUD 36	1,588	1,573	1,582	1,613	1,238	1,462	320	387	365	370	351	344	220	180	220	206	205	253	210
HARRIS COUNTY MUD 361	2,956	3,100	3,287	4,335	4,445	4,445	330	450	380	385	375	398	130	100	130	103	79	75	80
HARRIS COUNTY MUD 372	4,155	4,183	4,183	4,288	3,298	3,374	586	1,300	1,300	937	825	610	279	126	277	277	195	223	161
HARRIS COUNTY MUD 400	4,087	0	0	0	5,522	5,628	0	0	0	0	584	612	151	0	0	0	0	94	97
HARRIS COUNTY MUD 412	2,476	2,805	2,805	3,174	3,174	3,174	374	606	606	562	594	521	193	135	193	193	158	167	146
HARRIS COUNTY MUD 420	1,278	1,332	1,332	1,332	1,545	1,530	105	131	131	131	112	112	88	73	88	88	88	65	65

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Harris County (cont.)

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base		Historical GPCD Estimates						
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
HARRIS COUNTY MUD 46	3,489	3,489	3,489	3,489	3,491	3,491	495	610	500	487	456	452	156	127	156	128	125	116	116
HARRIS COUNTY MUD 49	5,465	6,490	6,490	8,153	8,501	8,696	464	602	602	538	528	545	94	76	83	83	59	55	56
HARRIS COUNTY MUD 5	5,200	5,305	5,305	5,454	6,298	6,298	325	487	526	414	418	596	80	56	82	89	68	59	84
HARRIS COUNTY MUD 50	3,164	2,763	2,587	2,763	2,850	3,555	343	436	350	344	314	362	122	97	141	121	111	98	91
HARRIS COUNTY MUD 55	14,183	14,155	15,377	15,179	15,304	15,318	1,086	1,675	1,764	1,383	1,527	1,389	100	68	106	102	81	89	81
HARRIS COUNTY MUD 58	1,459	1,457	1,459	1,835	1,843	1,840	148	153	155	210	235	268	109	90	94	95	102	114	130
HARRIS COUNTY MUD 6	3,777	3,780	3,867	3,865	3,788	3,802	591	465	376	384	350	350	110	140	110	87	89	83	82
HARRIS COUNTY MUD 8	4,507	4,420	4,420	5,915	5,921	5,921	471	530	530	488	469	448	104	93	107	107	74	71	68
HARRIS COUNTY MUD 96	5,101	5,295	5,530	5,819	6,150	6,219	512	519	464	500	515	564	83	90	87	75	77	75	81
HARRIS COUNTY UD 14	1,952	1,952	1,952	1,952	1,966	2,249	17	120	74	128	375	254	60	8	55	34	58	170	101
HARRIS COUNTY UD 15	3,523	3,529	3,541	3,568	3,435	3,590	560	536	512	516	289	263	137	142	136	129	129	75	65
HARRIS COUNTY WCID 1	5,887	5,887	6,091	5,220	5,250	5,269	741	927	885	851	845	771	100	112	141	130	146	144	131
HARRIS COUNTY WCID 133	5,454	5,173	5,454	5,454	4,707	4,800	631	725	633	608	893	528	119	103	125	104	99	169	98
HARRIS COUNTY WCID 156	1,241	1,241	1,241	1,245	1,245	1,245	218	293	225	221	206	185	211	157	211	162	158	148	132
HARRIS COUNTY WCID 50	2,972	2,972	2,972	2,642	2,642	2,642	407	407	407	417	417	420	122	122	122	122	141	141	142
HARRIS COUNTY WCID 70	1,371	1,371	1,221	1,330	1,412	1,424	165	226	203	222	203	227	147	107	147	149	149	128	142
HARRIS COUNTY WCID 74	4,005	4,005	4,005	3,854	3,854	4,698	664	664	664	653	653	617	148	148	148	148	151	151	117
HARRIS COUNTY WCID 89	6,181	6,244	7,179	7,316	6,945	8,526	511	580	530	572	673	625	84	74	83	66	70	87	65
HARRIS COUNTY WCID 96	6,556	6,586	7,605	8,087	8,491	8,509	1,028	1,225	1,225	1,227	1,171	1,196	171	140	171	144	135	123	125
HARRIS COUNTY WCID-FONDREN ROAD	3,051	3,059	3,030	3,044	3,076	3,075	255	319	245	246	225	240	93	75	93	72	72	65	70
HILSHIRE VILLAGE	746	580	580	767	788	788	148	207	207	171	138	158	242	177	318	318	199	156	179
HMW SUD	3,663	4,023	4,056	4,089	4,152	4,177	375	571	426	421	388	373	127	92	127	94	92	83	80
HOUSTON CRU	2,016,262	2,027,085	2,057,344	2,104,727	2,135,598	2,184,918	304,640	463,427	347,287	341,885	288,190	342,555	190	135	204	151	145	120	140
HUMBLE	15,295	15,295	15,295	15,295	15,643	15,783	3,759	2,571	3,184	3,140	2,947	2,969	149	219	150	186	183	168	168
JACINTO CITY	10,477	10,527	10,631	10,631	10,678	10,678	742	889	806	848	949	920	74	63	75	68	71	79	77
JERSEY VILLAGE	7,853	7,853	7,874	8,051	8,051	8,165	1,331	1,947	1,569	1,602	1,426	1,372	210	151	221	178	178	158	150
KATY	8,669	8,900	8,900	8,969	9,552	9,552	1,609	2,245	1,728	1,890	1,784	1,904	226	166	225	173	188	167	178
KINGS MANOR MUD	1,061	1,395	1,436	1,435	1,428	1,313	132	174	146	145	121	119	112	111	111	90	90	75	81
KIRKMONT MUD	2,280	2,307	2,317	2,329	2,320	2,140	357	394	302	332	386	253	154	140	152	117	127	148	106
LA PORTE	33,800	33,800	33,800	33,800	33,800	34,733	3,801	4,520	4,649	4,205	4,050	4,042	134	100	119	123	111	107	104
LAKE MUD	3,411	3,531	4,237	4,942	5,421	5,421	283	342	378	450	451	521	86	74	86	80	81	74	86
LEAGUE CITY	1,967	2,146	2,414	2,281	2,439	2,531	278	322	306	308	319	313	127	126	134	113	120	117	110
LONGHORN TOWN UD	1,574	1,574	1,574	1,574	1,574	1,274	335	435	350	340	316	314	209	190	247	199	193	179	220
LUCE BAYOU PUD	675	675	675	678	683	703	106	129	129	106	78	87	170	140	170	170	140	102	110
MASON CREEK UD	7,546	7,589	8,279	7,503	7,589	7,675	1,501	1,781	1,334	1,370	1,246	1,161	181	178	209	144	163	147	135
MEMORIAL VILLAGES WATER AUTHORITY	10,496	10,496	10,093	9,794	10,100	9,988	4,355	5,855	4,718	4,842	4,096	4,102	498	370	498	417	441	362	367
MORGANS POINT	426	426	268	271	271	279	116	156	133	142	175	157	327	243	327	442	468	576	502
MOUNT HOUSTON ROAD MUD	4,274	4,519	4,752	4,812	5,006	5,447	392	463	408	410	442	478	95	82	91	77	76	79	78
NASSAU BAY	3,970	3,620	3,681	3,681	3,681	3,681	949	1,107	997	970	932	960	242	213	273	242	235	226	233
NEWPORT MUD	8,261	8,261	8,261	8,261	8,261	8,871	895	895	895	895	895	1,400	103	97	97	97	97	97	141
NORTH BELT UD	2,536	2,698	2,698	2,801	3,012	3,019	357	517	350	392	388	405	180	126	171	116	125	115	120
NORTH CHANNEL WATER AUTHORITY CRU	69,805	70,956	73,703	74,476	74,440	82,528	8,345	9,895	8,862	8,945	8,682	9,194	119	107	124	107	107	104	99
NORTH FOREST MUD	1,392	1,392	1,392	1,392	1,392	1,392	171	198	184	192	162	149	127	110	127	118	123	104	95
NFBWA CRU ¹	4,307	4,987	5,069	5,598	6,113	6,334	794	1,144	961	914	917	928	206	165	205	169	146	134	131
NORTH GREEN MUD	3,093	3,107	3,704	4,295	4,295	4,782	421	421	406	417	447	465	116	122	121	98	87	93	87
NHCRWA CRU ⁴	596,798	619,489	648,340	668,638	697,352	725,812	80,205	103,970	90,268	92,771	85,304	87,145	160	120	150	124	124	109	107

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Harris County (cont.)

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base		Historical GPCD Estimates						
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
NORTHWEST HARRIS COUNTY MUD 16	3,100	3,100	3,100	3,100	3,100	3,231	338	460	351	386	339	348	133	97	133	101	111	98	96
PARKWAY MUD	5,633	5,894	6,316	6,420	6,594	6,354	490	584	516	545	527	545	85	78	88	73	76	71	77
PASADENA	143,237	145,254	144,246	144,246	144,478	144,478	18,189	21,772	19,807	18,997	18,419	17,322	141	113	134	123	118	114	107
PEARLAND	12,064	12,064	12,064	11,636	12,237	13,067	1,263	1,827	1,827	1,711	1,774	1,826	135	93	135	135	131	129	125
PINE VILLAGE PUD	1,409	1,400	1,403	1,430	1,583	1,775	129	155	165	125	138	173	99	82	99	105	78	78	87
PINEWOOD COMMUNITY	1,044	1,044	1,050	1,044	1,044	1,050	84	108	97	107	106	118	93	72	93	83	91	91	101
QUADVEST	547	624	626	678	714	786	90	142	109	112	103	105	207	147	204	155	147	128	120
ROLLING FORK PUD	2,282	2,282	2,608	2,619	2,622	2,622	274	421	332	340	284	274	165	107	165	114	116	97	93
SAGEMEADOW UD	6,273	6,305	6,658	6,753	6,784	6,229	693	820	680	743	612	576	111	99	116	91	98	81	83
SEABROOK	11,778	11,180	11,180	11,180	11,180	11,319	1,657	1,864	1,585	1,574	1,492	1,485	138	126	149	127	126	119	117
SEQUOIA IMPROVEMENT DISTRICT	843	856	966	966	971	963	123	144	138	111	96	101	151	130	151	127	103	88	93
SHOREACRES	1,496	1,142	1,074	1,145	1,145	1,145	240	355	285	237	175	149	207	143	278	237	185	136	116
SOUTH HOUSTON	16,774	17,265	17,265	17,265	17,686	17,686	1,989	2,174	1,983	2,020	1,784	1,853	111	106	112	103	104	90	94
SOUTHERN WATER	3,795	3,933	3,933	3,900	3,933	3,933	331	453	381	395	372	415	103	78	103	86	90	84	94
SOUTHSIDE PLACE	2,193	2,193	2,193	2,193	2,193	2,193	283	283	283	283	283	283	144	115	115	115	115	115	115
SOUTHWEST HARRIS COUNTY MUD 1	1,616	1,595	1,595	1,616	1,619	1,321	125	135	135	146	112	113	74	69	75	75	81	62	77
SPRING MEADOWS MUD	3,383	3,575	3,701	3,994	3,771	3,771	259	324	291	268	296	304	81	68	81	70	60	70	72
SPRING VALLEY	3,715	3,715	3,715	3,822	3,822	3,822	829	1,067	941	890	792	774	251	199	257	226	208	185	181
SUBURBAN UTILITY	3,016	3,016	3,016	3,016	3,016	3,288	326	326	326	326	326	429	96	96	96	96	96	96	117
SUNBELT FWSD	27,285	26,740	26,382	27,300	25,463	26,845	2,701	3,024	2,811	2,637	2,307	2,397	101	88	101	95	86	81	80
THE COMMONS WATER SUPPLY	2,337	2,337	2,337	2,337	2,337	2,337	302	302	302	302	302	302	115	115	115	115	115	115	115
THE WOODLANDS CRU	13,073	13,395	13,594	13,865	13,865	14,119	2,459	3,139	2,867	2,448	2,305	2,179	222	168	209	188	158	148	138
TOMBALL	10,753	10,753	11,563	11,563	12,019	12,308	2,335	2,838	2,533	2,443	2,387	2,323	234	194	236	196	189	177	169
TRAIL OF THE LAKES MUD	6,908	6,988	7,488	7,690	8,049	8,382	718	907	901	751	705	730	111	93	116	107	87	78	78
WALLER	443	443	452	452	452	429	72	84	75	78	82	91	165	144	169	147	155	162	189
WEBSTER	10,390	11,143	10,832	11,140	10,702	10,702	1,989	2,129	1,972	1,971	1,961	1,844	238	171	171	163	158	164	154
WEST HARRIS COUNTY MUD 6	2,478	2,313	2,488	2,512	2,491	2,745	315	389	306	300	291	299	129	113	150	110	107	104	97
WHCRWA CRU ²	405,994	425,173	443,036	461,175	474,120	479,432	49,067	57,981	53,443	54,880	50,532	52,403	123	108	122	108	106	95	98
WEST UNIVERSITY PLACE	15,001	15,001	15,001	15,001	15,001	15,001	2,645	3,125	2,655	2,582	2,304	2,302	181	157	186	158	154	137	137
WOODCREEK MUD	2,975	2,978	2,975	2,975	2,975	2,978	417	426	437	444	318	330	118	125	128	131	133	95	99

Leon County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base		Historical GPCD Estimates						
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
BUFFALO	1,918	1,918	1,827	1,735	1,735	1,735	327	357	326	341	362	384	184	152	166	159	175	186	197
CENTERVILLE	1,005	1,005	1,005	1,005	1,005	1,005	148	177	166	165	156	152	176	131	157	147	146	139	135
CONCORD-ROBBINS WSC	2,685	2,831	2,786	2,821	2,867	2,934	270	335	319	332	285	290	76	90	106	102	105	89	88
FLO COMMUNITY WSC	3,762	4,326	3,762	4,377	4,683	4,707	476	330	340	320	359	380	76	113	68	81	65	68	72
HILLTOP LAKES WSC	1,047	1,045	1,039	1,039	1,039	978	200	212	167	186	164	164	181	170	181	144	160	141	150
JEWETT	1,350	1,330	1,296	1,257	1,257	1,257	174	203	173	158	153	153	154	115	137	119	112	108	108
NORMANGEE	609	625	625	492	590	562	116	107	107	83	88	104	155	171	152	152	150	133	166
SOUTHEAST WSC	1,862	1,961	2,099	2,117	1,992	2,493	225	270	229	273	246	263	126	108	123	98	115	110	94

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Liberty County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
CLEVELAND	7,591	7,651	7,651	7,698	7,698	7,693	1,362	1,604	1,118	1,143	1,120	1,301	187	160	187	130	132	130	151
DAISETTA	966	905	905	905	905	905	108	124	119	102	104	103	114	100	123	118	101	103	101
DAYTON	7,624	7,662	7,824	7,931	7,856	8,169	1,694	1,692	1,503	1,492	1,443	1,623	209	198	197	172	168	164	177
DEVERS	666	666	666	666	666	666	155	155	155	155	155	155	208	208	208	208	208	208	208
HARDIN WSC	3,750	3,750	3,956	4,114	4,092	3,845	445	526	438	439	408	409	99	106	125	99	95	89	95
LAKE LIVINGSTON WS AND SS ⁵	1,183	1,158	1,187	1,246	1,187	1,224	147	143	120	123	123	134	70	111	110	91	88	93	98
LIBERTY	8,550	8,550	8,999	8,999	8,999	8,999	1,498	1,498	1,552	1,589	1,454	1,413	161	156	156	154	158	144	140
LIBERTY COUNTY FWSD 1 HULL	680	1,241	1,241	1,241	1,241	1,241	104	108	104	84	75	75	144	136	77	75	61	54	54
MERCY WSC	197	188	197	197	197	217	20	22	21	22	20	27	96	90	106	95	98	90	109
SOUTH CLEVELAND WSC	1,960	1,960	2,700	2,000	2,748	2,748	167	188	158	148	140	162	86	76	86	52	66	46	53
T & W WATER SERVICE	1,069	1,166	1,207	1,279	1,351	1,404	0	278	214	210	196	195	232	0	213	158	146	129	124
TARKINGTON SUD	3,308	3,506	3,665	3,703	3,830	3,919	335	378	330	346	335	337	104	90	96	80	83	78	77
WEST HARDIN WSC	307	328	328	307	307	241	27	28	26	21	21	25	68	80	76	72	60	60	94
WOODCREEK WATER OF LIBERTY	170	225	200	200	2,567	2,669	21	24	24	24	278	272	97	110	96	108	108	97	91

Madison County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
MADISON COUNTY WSC	1,008	1,031	1,162	1,190	1,210	1,210	131	163	123	125	110	116	141	116	141	94	94	81	85
MADISONVILLE	4,871	4,408	4,352	4,412	4,412	4,412	785	956	775	858	868	860	173	144	194	159	174	176	174
NORMANGEE	76	78	78	61	74	70	15	13	13	10	11	13	155	171	152	152	150	133	166
NORTH ZULCH MUD	1,468	1,468	1,468	1,468	1,709	1,832	167	214	164	164	124	158	130	102	130	100	100	65	77

Montgomery County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
CHATEAU WOODS MUD	1,748	1,813	1,900	1,925	1,931	1,948	167	223	198	201	175	174	110	86	110	93	93	81	80
CLEVELAND	29	29	29	29	29	29	5	6	4	4	4	5	187	160	187	130	132	130	151
CONROE	54,067	54,526	55,837	58,229	65,995	67,508	9,041	10,649	8,773	9,161	9,295	9,178	162	149	174	140	140	126	121
CORINTHIAN POINT MUD 2	570	646	634	631	729	692	140	195	131	127	114	109	269	219	269	185	180	140	141
CUT & SHOOT	3,383	3,964	3,859	4,440	4,440	4,087	324	362	304	313	331	326	90	85	82	70	63	67	71
DOBBS PLANTERSVILLE WSC	4,515	4,515	4,515	4,174	4,174	4,174	344	343	344	381	381	381	76	68	68	68	82	82	82
DOMESTIC WATER	1,324	1,419	1,419	1,513	1,513	1,541	124	138	101	112	123	104	93	84	87	63	66	73	60
EAST PLANTATION UD	1,338	1,387	1,338	1,411	1,406	1,474	263	355	268	261	229	241	185	176	229	179	165	145	146
FAR HILLS UD	892	966	966	966	1,000	1,259	164	241	241	241	143	87	242	165	223	223	223	128	62
GULF UTILITY	4,509	4,695	4,695	4,695	4,695	5,049	618	834	834	836	836	532	159	122	159	159	159	159	94
HARRIS COUNTY MUD 386	2,485	0	0	0	2,118	1,941	0	0	0	0	313	287	132	0	0	0	0	132	132
HMW SUD	7,810	8,577	8,648	8,718	8,853	8,907	801	1,219	907	899	828	795	127	92	127	94	92	83	80
HOUSTON CRU	4,416	4,440	4,506	4,610	4,677	4,785	667	1,015	761	749	631	750	190	135	204	151	145	120	140
JOHNSTON WATER UTILITY	1,707	1,830	1,500	1,580	1,670	1,790	503	747	404	441	467	378	364	263	364	240	249	249	188
KINGS MANOR MUD	2,264	2,977	3,065	3,063	3,047	2,802	282	371	310	309	257	254	112	111	111	90	90	75	81
LAKE BONANZA WSC	1,696	1,725	1,786	1,820	1,844	1,852	143	190	151	140	142	135	98	76	98	76	69	69	65
LAKE CONROE HILLS MUD	1,428	1,436	1,365	1,403	1,596	1,654	145	182	139	140	133	147	113	91	113	91	89	74	79
LAZY RIVER IMPROVEMENT DISTRICT	645	618	618	620	623	727	119	152	109	104	93	85	220	165	220	158	149	133	105

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Montgomery County (cont.)

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base		Historical GPCD Estimates						
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	Dry	2010	2011	2012	2013	2014	2015
MAGNOLIA	2,449	2,449	2,449	2,458	2,458	2,545	427	427	427	436	405	478	212	156	156	156	158	147	168
MONTGOMERY	786	786	1,259	1,259	1,259	1,259	161	161	226	230	234	297	224	183	183	160	163	166	211
MONTGOMERY COUNTY MUD 112	827	1,101	1,424	2,160	2,774	2,888	179	284	275	324	412	564	230	193	230	172	134	133	174
MONTGOMERY COUNTY MUD 115	858	1,100	1,555	2,102	3,046	3,166	144	202	218	296	349	429	164	150	164	125	126	102	121
MONTGOMERY COUNTY MUD 119	313	426	426	839	1,573	2,204	65	126	126	137	227	390	252	185	263	263	145	129	158
MONTGOMERY COUNTY MUD 15	3,844	4,236	4,236	4,236	4,917	5,073	0	382	335	397	430	434	126	0	81	71	84	78	76
MONTGOMERY COUNTY MUD 18	4,998	5,455	5,254	5,380	5,515	5,794	1,255	1,557	1,358	1,278	1,267	1,229	255	224	255	231	212	205	189
MONTGOMERY COUNTY MUD 19	3,134	3,134	3,134	3,134	3,134	3,134	577	673	623	593	581	603	126	164	192	177	169	166	172
MONTGOMERY COUNTY MUD 56	957	957	957	957	957	948	94	113	90	87	83	89	105	88	105	84	81	77	84
MONTGOMERY COUNTY MUD 8	5,649	5,772	5,715	5,715	6,015	6,015	730	934	694	694	694	694	144	115	144	108	108	103	103
MONTGOMERY COUNTY MUD 83	2,046	2,094	2,244	2,292	2,280	2,106	333	407	356	327	303	292	173	145	173	142	127	119	124
MONTGOMERY COUNTY MUD 84	1,471	1,733	2,244	2,398	2,459	2,287	226	399	373	391	346	430	205	137	205	148	145	126	168
MONTGOMERY COUNTY MUD 88	356	470	652	1,150	1,383	1,378	70	90	104	131	144	200	172	175	172	142	102	93	129
MONTGOMERY COUNTY MUD 89	4,401	4,503	4,719	4,857	4,992	4,764	630	802	240	240	560	548	75	128	159	45	44	100	103
MONTGOMERY COUNTY MUD 9	5,403	5,523	5,415	6,028	6,204	6,204	702	912	804	1,469	1,393	1,387	147	116	147	133	218	200	200
MONTGOMERY COUNTY MUD 95	184	204	495	987	1,128	1,290	0	19	66	123	147	135	84	0	84	118	111	116	93
MONTGOMERY COUNTY MUD 98	1,023	1,173	1,299	1,527	1,794	1,869	103	144	144	156	163	182	110	90	110	99	91	81	87
MONTGOMERY COUNTY MUD 99	641	672	689	709	866	778	86	154	108	108	158	161	205	119	205	140	136	163	184
MONTGOMERY COUNTY UD 2	1,882	1,882	1,882	1,882	1,844	1,905	384	384	384	384	281	275	120	182	182	182	182	136	129
MONTGOMERY COUNTY UD 3	3,624	3,624	3,489	3,798	4,110	4,421	409	576	754	1,009	968	1,019	142	101	142	193	237	210	206
MONTGOMERY COUNTY UD 4	4,758	4,767	4,917	4,917	4,917	4,917	725	851	390	390	390	390	159	136	159	71	71	71	71
MONTGOMERY COUNTY WCID 1	3,303	3,303	2,832	2,832	2,832	2,911	372	372	331	323	307	324	86	101	101	104	102	97	100
MSEC ENTERPRISES	4,908	4,908	6,768	7,884	10,191	10,938	0	1,229	1,096	1,340	1,497	1,912	224	0	224	145	152	131	156
NEW CANEY MUD	8,516	8,636	8,620	8,981	8,603	8,693	942	1,038	943	950	947	1,000	84	99	107	98	94	98	103
OAK RIDGE NORTH	3,077	3,077	3,077	3,077	3,633	3,633	449	608	493	466	464	460	169	130	176	143	135	114	113
PANORAMA VILLAGE	2,085	2,294	2,241	2,137	2,554	2,606	426	538	426	408	397	393	214	182	210	170	170	139	135
PINEHURST DECKER PRAIRIE WSC	1,215	1,200	1,200	1,194	1,194	1,233	0	93	93	104	104	95	69	0	69	69	78	78	68
POINT AQUARIUS MUD	2,018	2,174	2,229	2,249	2,333	2,367	446	561	419	400	379	379	190	197	230	168	159	145	143
PORTER SUD	15,146	15,146	15,146	15,146	15,146	15,146	1,289	1,351	1,356	1,367	1,602	1,676	60	76	80	80	81	94	99
QUADVEST	15,578	17,769	17,817	19,298	20,327	22,371	2,568	4,056	3,090	3,185	2,922	2,995	207	147	204	155	147	128	120
RANCH UTILITIES	1,106	1,094	1,129	1,135	1,169	1,192	105	117	93	97	114	96	95	85	95	74	76	87	72
RAYFORD ROAD MUD	10,825	10,917	10,940	10,960	10,550	10,400	1,485	1,798	1,594	1,518	1,307	1,232	120	123	147	130	124	111	106
RIVER PLANTATION MUD	2,418	2,401	2,401	2,401	2,401	2,469	537	714	501	512	460	417	228	198	265	186	190	171	151
ROMAN FOREST CONSOLIDATED MUD	1,674	1,674	1,674	1,674	1,674	1,674	253	253	253	254	254	225	136	135	135	135	135	120	120
SHENANDOAH	2,162	2,162	2,883	2,883	3,074	3,074	948	1,191	1,107	1,042	1,044	1,147	400	391	492	343	323	303	333
SOUTHERN MONTGOMERY COUNTY MUD	11,019	11,699	10,370	10,477	10,542	10,556	1,377	1,651	1,447	1,426	1,337	1,284	111	112	126	125	121	113	109
SPLENDORA	7,060	6,962	7,022	7,172	7,080	7,218	795	818	694	762	683	738	96	101	105	88	95	86	91
SPRING CREEK UD	9,236	9,594	9,837	10,125	10,352	10,364	942	1,163	800	926	851	880	86	91	108	73	82	73	76
STANLEY LAKE MUD	2,815	2,576	2,576	2,905	2,905	2,956	513	692	596	593	549	539	204	163	240	207	182	169	163
T & W WATER SERVICE	4,656	5,080	5,255	5,573	5,885	6,117	0	1,211	933	913	852	851	232	0	213	158	146	129	124
THE WOODLANDS CRU	80,982	82,978	84,209	85,891	85,891	87,462	15,231	19,448	17,757	15,161	14,279	13,501	222	168	209	188	158	148	138
VALLEY RANCH MUD 1	1,117	1,104	1,104	1,975	1,524	1,650	0	65	65	53	181	188	106	0	52	52	24	106	101
WESTWOOD NORTH WSC	2,481	2,375	2,489	2,584	2,584	2,697	298	458	313	316	287	294	165	107	172	112	109	99	97
WHITE OAK UTILITIES	851	834	758	856	1,118	1,140	77	119	71	87	101	119	95	81	98	84	91	81	93
WHITE OAK WSC	1,023	0	1,023	1,026	1,023	732	0	0	130	121	102	112	89	0	0	113	105	89	137
WILLIS	6,264	6,140	6,673	6,851	6,239	6,264	712	749	669	752	756	740	120	101	109	89	98	108	105
WOOD BRANCH VILLAGE	1,102	1,102	1,102	1,269	1,269	1,390	110	115	115	145	151	61	78	89	93	93	102	106	39

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Polk County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Historical GPCD Estimates								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
LAKE LIVINGSTON WS AND SS ⁵	7,753	7,587	7,780	8,167	7,776	8,019	963	936	789	808	806	877	70	111	110	91	88	93	98
LEGGETT WSC	1,584	1,584	1,584	1,584	1,584	1,584	264	278	242	283	289	312	157	149	157	136	159	163	176
LIVINGSTON	5,414	5,316	5,316	5,316	5,316	5,316	2,166	2,378	2,161	2,164	2,076	2,081	385	357	399	363	363	349	349
MEMORIAL POINT UD	887	720	720	795	636	638	110	137	137	66	97	106	154	111	170	170	74	137	149
MOSCOW WSC	97	94	153	141	415	370	0	15	15	50	87	82	141	0	141	86	315	187	197
ONALASKA WSC	3,159	3,190	3,260	3,268	3,312	3,388	307	360	317	304	281	296	101	87	101	87	83	76	78
PROVIDENCE WSC	1,858	1,096	1,096	1,096	1,195	1,726	156	156	176	195	172	184	75	75	127	144	159	128	95
SODA WSC	1,649	1,649	1,627	1,627	1,627	1,627	156	156	175	175	175	175	84	84	84	96	96	96	96
TEMPE WSC 1	1,912	1,912	1,849	1,849	1,849	1,849	192	192	189	189	189	189	90	90	90	91	91	91	91

San Jacinto County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Historical GPCD Estimates								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
CAPE ROYALE UD	925	1,200	850	850	1,000	1,000	178	254	183	179	176	166	241	171	189	192	188	157	148
DODGE OAKHURST WSC	402	402	365	365	365	365	39	51	41	41	40	40	113	87	113	100	100	98	98
LAKE LIVINGSTON WS AND SS ⁵	2,416	2,364	2,424	2,545	2,423	2,499	300	292	246	252	251	273	70	111	110	91	88	93	98
MERCY WSC	1,557	1,483	1,557	1,557	1,557	1,715	157	175	165	170	158	209	96	90	106	95	98	90	109
ONE FIVE O WSC	2,068	2,068	2,068	2,068	2,068	2,206	244	244	244	244	244	219	105	105	105	105	105	105	89
P B & S C WSC	1,478	1,505	1,690	1,659	1,703	1,703	166	216	179	159	184	262	129	100	128	95	86	96	137
RIVERSIDE WSC	450	377	376	437	538	538	30	32	34	43	36	36	64	59	76	80	89	60	60
SAN JACINTO SUD	2,441	2,318	3,132	3,132	2,425	2,601	255	310	251	237	233	266	92	93	119	71	68	86	91
SHEPHERD	2,314	2,759	2,759	2,129	2,133	2,349	0	308	308	257	341	328	117	0	100	100	108	143	125
WATERWOOD MUD 1	402	402	402	402	402	402	88	117	88	88	88	115	261	194	261	196	196	196	256

Trinity County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Historical GPCD Estimates								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
GLENDALE WSC	738	696	699	699	699	702	56	105	86	86	86	63	135	68	135	109	109	109	80
GROVETON	544	519	519	519	519	519	67	65	56	60	69	69	105	109	112	96	103	118	118
LAKE LIVINGSTON WS AND SS ⁵	623	610	625	656	625	644	77	75	63	65	65	70	70	111	110	91	88	93	98
PENNINGTON WSC	1,159	1,172	1,172	1,172	1,180	1,193	112	122	95	64	102	103	94	86	93	72	48	77	77
TRINITY	3,469	3,469	3,469	3,540	3,540	3,529	454	424	734	244	252	454	109	117	109	189	62	63	115
TRINITY RURAL WSC	3,067	3,067	2,990	3,067	3,043	3,113	364	387	327	332	295	294	114	106	113	98	97	86	84
WESTWOOD SHORES MUD	984	1,109	1,061	1,109	1,109	1,109	157	156	141	142	142	142	125	142	125	119	114	114	114

Walker County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Historical GPCD Estimates								
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015	
DODGE OAKHURST WSC	938	938	853	853	853	853	91	118	95	95	94	94	113	87	113	100	100	98	98
HUNTSVILLE	38,375	39,145	39,145	39,145	39,145	41,061	7,159	7,501	11,437	13,365	11,663	14,416	182	167	171	261	305	266	313
LAKE LIVINGSTON WS AND SS ⁵	165	161	166	174	165	171	20	20	17	17	17	19	70	111	110	91	88	93	98
NEW WAVERLY	1,084	1,086	1,090	1,090	1,090	1,086	158	194	147	149	145	152	158	130	160	120	122	119	125
PHELPS SUD	1,223	0	0	1,800	1,824	1,824	0	0	0	209	194	194	95	0	0	0	104	95	95
RIVERSIDE WSC	4,265	3,575	3,564	4,140	5,095	5,095	281	305	318	412	341	341	64	59	76	80	89	60	60
THE CONSOLIDATED WSC	97	99	99	99	99	99	13	16	13	13	13	13	110	119	146	121	121	121	121
TRINITY RURAL WSC	274	274	267	274	272	278	33	35	29	30	26	26	114	106	113	98	97	86	84
WALKER COUNTY RURAL SUD	6,947	7,021	7,070	7,070	7,275	7,372	869	955	1,041	1,001	877	1,011	127	112	121	131	126	108	122

TWDB Historical Population and GPCD Estimates for Utility WUGs:
WUG Summary

Waller County

WUG	Historical Population Estimates					Historical Net Use Estimates (ac-ft)					Base Dry	Historical GPCD Estimates							
	2010	2011	2012	2013	2014	2015	2010	2011	2012	2013		2014	2015	2010	2011	2012	2013	2014	2015
BROOKSHIRE MWD	4,000	4,403	4,702	4,702	4,702	4,232	521	594	578	535	493	592	111	116	121	110	102	94	125
G & W WSC	2,446	1,865	1,865	1,865	2,930	3,073	160	245	196	204	215	204	112	58	117	94	98	65	59
HEMPSTEAD	5,770	5,770	5,770	5,770	5,770	5,770	801	1,199	805	812	715	921	182	124	186	125	126	111	143
KATY	954	979	979	987	1,051	1,051	177	247	190	208	196	209	226	166	225	173	188	167	178
OAK HOLLOW UTILITY	1,620	1,470	1,458	1,553	1,481	1,604	148	206	151	159	146	154	113	82	125	92	91	88	86
PATTISON WSC	1,304	1,226	1,287	1,304	1,304	1,304	221	211	154	168	162	177	147	151	153	107	115	111	121
PRAIRIE VIEW	2,610	2,610	2,646	2,646	2,646	2,646	684	684	684	296	328	328	221	234	234	231	100	111	111
PRAIRIE VIEW A&M UNIVERSITY	3,209	3,209	3,209	3,209	3,209	3,209	711	711	711	711	733	664	66	198	198	198	198	204	185
QUADVEST	84	96	96	104	110	121	14	22	17	17	16	16	207	147	204	155	147	128	120
WALLER	1,886	1,886	1,925	1,925	1,925	1,828	305	356	317	334	350	387	165	144	169	147	155	162	189
WHITE OAK UTILITIES	42	41	37	42	55	56	4	5	4	4	5	6	95	81	98	84	91	81	93

Notes:

1. North Fort Bend Water Authority
2. West Harris County Regional Water Authority
3. Central Harris County Regional Water Authority
4. North Harris County Regional Water Authority
5. Lake Livingston Water Supply and Sewer Service

Agenda Item 7

Receive presentation on identification of Major Water Providers for Region H and consider recommendations to the Region H Planning group.

Agenda Item 7 Major Water Providers



- New concept
- Largely replaces WWP role
- Broader category
- Key significance to Region's supplies
- Determined by RWPG
- At prior RWPG meeting, discussion of need for consistent and clear definition
- Not necessarily just adjust old WWP list

Agenda Item 7 Major Water Providers

- Supply volume most viable metric
- More than single year sales
- Not just existing contracts
- Legacy WWPs and municipal WUGs
 - 2016 RWP data
 - Post-WMS self-supply and transfers
- New municipal WUGs
 - Draft TWDB projections
 - Maximum demand
- Look for break points



Agenda Item 7 Major Water Providers

Break Point (ac-ft)	Entity	Type	Max. Allocation or Proj. Demand (ac-ft)
100,000+ (11 MWP)	HOUSTON	WWP	2,087,181
	DOW CHEMICAL USA	WWP	313,183
	TRINITY RIVER AUTHORITY	WWP	287,045
	BRAZOS RIVER AUTHORITY	WWP	279,369
	SAN JACINTO RIVER AUTHORITY	WWP	269,371
	GULF COAST WATER AUTHORITY	WWP	249,484
	NORTH HARRIS COUNTY REGIONAL WATER AUTHORITY	WWP	223,624
	NRG	WWP	205,639
	WEST HARRIS COUNTY REGIONAL WATER AUTHORITY	WWP	144,406
	NORTH FORT BEND WATER AUTHORITY	WWP	138,175
	LOWER NECHES VALLEY AUTHORITY	WWP	123,262

Agenda Item 7 Major Water Providers

Range (ac-ft)	Entity	Type	Max. Allocation or Proj. Demand (ac-ft)
40,000 (15 MWP)	SUGAR LAND	WWP	57,818
	PASADENA	WWP	55,781
	THE WOODLANDS	Legacy WUG	44,033
	CHAMBERS-LIBERTY COUNTIES NAVIGATION DISTRICT	WWP	42,826
35,000 (17 MWP)	PEARLAND	Legacy WUG	38,714
	BRAZOSPORT WATER AUTHORITY	WWP	37,307
30,000 (21 MWP)	MISSOURI CITY	WWP	31,863
	CONROE	Legacy WUG	31,410
	HUNTSVILLE	WWP	30,474
	LEAGUE CITY	Legacy WUG	30,332
25,000 (23 MWP)	GALVESTON	WWP	27,105
	CLEAR LAKE CITY WATER AUTHORITY	WWP	26,880

Agenda Item 7

Major Water Providers

Range (ac-ft)	Entity	Type	Max. Allocation or Proj. Demand (ac-ft)
15,000 (30 MWP)	BAYTOWN AREA WATER AUTHORITY	WWP	18,536
	<i>BAYTOWN</i>	<i>Legacy WUG</i>	<i>18,013</i>
	QUADVEST	New WUG	17,520
	<i>STAFFORD</i>	<i>Legacy WUG</i>	<i>17,340</i>
	CLEAR LAKE CITY WATER AUTHORITY	New WUG	16,326
	SIENNA PLANTATION	Legacy WUG	15,821
	FRIENDSWOOD	Legacy WUG	15,197
10,000 (34 MWP)	NORTH CHANNEL WATER AUTHORITY	WWP	13,123
	TEXAS CITY	Legacy WUG	13,077
	<i>FORT BEND COUNTY WCID #2</i>	<i>WWP</i>	<i>10,634</i>
	CENTRAL HARRIS COUNTY REGIONAL WATER AUTHORITY	WWP	10,446

