

# **REGION H**

## **Water Planning Group**

### **MEETING MATERIALS**

**February 28, 2017**

**San Jacinto River Authority**

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**Region H Water Planning Group**  
**10:00 AM Tuesday**  
**February 28, 2017**  
**San Jacinto River Authority Office**  
**1577 Dam Site Rd, Conroe, Texas 77304**

**AGENDA**

1. Introductions.
2. Review and approve minutes of November 2, 2016 meeting.
3. **Receive public comments on specific issues related to agenda items 4 through 12.** (Public comments limited to 3 minutes per speaker)
4. Receive Nominating Committee report and elect officers and members of the Executive Committee of the Region H WPG.
5. Consider and take action regarding adoption of proposed amendments to the Region H bylaws.
6. Receive presentation from Texas Water Development Board on Regional Water Planning in Texas - Introduction to the 5th Cycle.
7. Receive update from Consultant Team regarding the schedule and milestones for the development of the 2021 Region H Regional Water Plan.
8. Receive update from Consultant Team and Non-Population Demands Committee regarding TWDB non-municipal demand projection methodology.
9. Receive update from Consultant Team and Non-Population Demands Committee regarding TWDB draft non-municipal demand projections for the 2021 Region H Regional Water Plan.
10. Receive update from Consultant Team and Population Demands Committee regarding TWDB draft municipal population and water demand projections for the 2021 Region H Regional Water Plan.
11. Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the Region H Planning Group.
12. Agency communications and general information.
13. **Receive public comments.** (Public comments limited to 3 minutes per speaker)
14. Next Meeting: June 7, 2017.
15. Adjourn

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact Sonia Zamudio at (936) 588-3111 at least three business days prior to the meeting so that appropriate arrangements can be made.

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## Agenda Item 2

Review and approve minutes of November 2, 2016 meeting.

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**MINUTES  
REGION H WATER PLANNING GROUP  
NOVEMBER 2, 2016  
SAN JACINTO RIVER AUTHORITY  
GENERAL AND ADMINISTRATION BUILDING  
1577 DAM SITE ROAD  
CONROE, TX 77304**

**MEMBERS PRESENT:** David Bailey, John Bartos, John Blount, Robert Bruner, Jun Chang, David Collinsworth, Mark Evans, Gene Fisseler, Bob Hebert, Art Henson, John Howard, Ivan Langford, Glenn Lord, Carl Masterson, Jimmie Schindewolf, Ruth Stultz, Michael Turco, Kevin Ward, and Pudge Wilcox

**DESIGNATED ALTERNATES:** David Parkhill for Jace Houston, Robert Thompson for Marvin Marcell, Tom Michel for Bill Teer, and Paul Nelson for Kathy Jones

**MEMBERS ABSENT:** James Comin, Robert Istre, and James Morrison

**NON-VOTING MEMBERS PRESENT:** Sarah Backhouse

**CALL TO ORDER**

The meeting was called to order at 10:00 a.m.

**1. INTRODUCTIONS**

There were no introductions.

**2. REVIEW AND APPROVE MINUTES OF AUGUST 3, 2016 MEETING**

Mr. Schindewolf made a motion to approve the minutes of August 3, 2016. The motion was seconded by Mr. Henson and carried unanimously.

**3. RECEIVE PUBLIC COMMENTS ON SPECIFIC ISSUES RELATED TO AGENDA ITEMS 4 THROUGH 10**

There were no comments.

**4. DISTRIBUTION AND PRESENTATION OF PROPOSED AMENDMENTS TO THE REGION H BYLAWS**

Mr. Evans stated that Mr. Jace Houston and Mr. John Bartos agreed to volunteer to review and amend the bylaws to reflect Region H changes. Mr. Bartos provided an overview of the proposed changes to the bylaws, stating that all of the changes were minor amendments. Mr. Evans stated that the proposed amendments would be presented for consideration and approval at the next Region H Water Planning Group meeting.

**5. RECEIVE PRESENTATION FROM HARRIS COUNTY AND FREESE AND NICHOLS REGARDING RESULTS OF A SUPPLY AND RETENTION FEASIBILITY STUDY CONDUCTED FOR NORTHWESTERN HARRIS COUNTY FOR DEVELOPMENT OF POTENTIAL FUTURE WATER SUPPLIES**

Mr. Cory Stull of Freese and Nichols, presented information related to the results of a supply and

retention feasibility study. He stated that in 2014, the Harris County Flood Control District identified two reservoir sites (Plan 3 and Plan 5) to try to manage the Cypress Creek overflows as part of the Cypress Creek Overflow Management Plan. Mr. Stull provided details related to the analysis for the potential for a firm water supply, concluding that Plan 3 “Mound Creek Reservoir” and Plan 5 “Katy-Hockley Reservoir” had a high evaporation rate and did not provide benefit for a firm yield to be generated. Next he provided information related to two conceptual retention sites within the Addicks and Little Cypress Watershed. He stated that studies were also conducted related to interruptible supplies, return flows, water demands/population growth, the feasibility of distributed retention facilities, and TCEQ financing. Overall, Mr. Stull concluded that the model reservoirs were not a viable source of water supply. Further, the dual use (flood control and water supply) were counteracting to each other, reducing the volume available to each use. Finally, he stated that distributed retention may provide the potential to supplement irrigation and other non-potable demands, however permitting, treatment, and transmission requirements may hinder implementation.

**6. RECEIVE UPDATE FROM CONSULTANT TEAM REGARDING THE SCHEDULE AND MILESTONES FOR THE DEVELOPMENT OF THE 2021 REGION H REGIONAL WATER PLAN**

Mr. Afinowicz provided information related to the schedule and milestones for the development of the 2021 Region H Region Water Plan. He stated that the Texas Water Development Board is on schedule to finalize the rules later this month. He provided information related to the items identified as deliverables which are related to population and non-population water demands. Mr. Afinowicz then provided a high-level overview of the schedule for 2017 through 2020.

**7. RECEIVE UPDATE FROM CONSULTANT TEAM REGARDING IDENTIFICATION OF MUNICIPAL WUGS FROM THE 2021 REGION H REGIONAL WATER PLAN AND RATIFY RECOMMENDATIONS FOR NEW WUGS.**

Mr. Afinowicz provided an update related to the identification of Municipal WUGs. He briefly reviewed the list of privately owned utilities and state or federal owned facilities that responded to be included in the plan. With no discussion, Mr. Fisseler made a motion to ratify the recommendations made previously for the new Water User Groups. The motion was seconded by Mr. Blount and carried unanimously.

**8. DISCUSSION AND POSSIBLE ACTION TO AUTHORIZE THE SAN JACINTO RIVER AUTHORITY TO PROVIDE PUBLIC NOTICE AND SUBMIT A GRANT APPLICATION TO THE TWDB ON BEHALF OF REGION H FOR FUNDING TO COMPLETE THE FIFTH ROUND OF REGIONAL WATER PLANNING, AND TO NEGOTIATE AND EXECUTE THE AMENDMENT TO THE TWDB CONTRACT**

Mr. Afinowicz provided an overview of the proposed funding allocations and contracting process for the completion of the 2021 regional water plans. Mr. Henson made a motion to submit a grant application for the Request For Application (“RFA”), to post notice related to the RFA submittal, and to negotiate and execute the contract with the TWDB Board. The motion was seconded by Mr. Hebert and carried unanimously.

**9. RECEIVE REPORT REGARDING REENT AND UPCOMING ACTIVITIES RELATED TO COMMUNICATIONS AND OUTRACH EFFORTS ON BEHALF OF THE REGION H PLANNING GROUP.**

Mr. Afinowicz reported on the August 25, 2016, meeting of the Gulf Coast Water Efficiency Network related to the Region H Plan.



**10. AGENCY COMMUNICATONS AND GENERAL INFORMATION**

Ms. Backhouse provided an update related to the Chapter 357 Administrative Rules. Mr. Jun Chang announced his retirement from the City of Houston and his new position with the North Harris County Regional Water Authority. He stated that as he is no longer with the City of Houston and can no longer represent municipalities, he is resigning his position effective immediately.

**11. RECEIVE PUBLIC COMMENTS**

There were no comments.

**12. NEXT MEETING**

Mr. Evans announced that the next regular meeting will take place on March 1, 2017.

**13. ADJOURN**

The meeting was adjourned at 10:49 a.m.

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## Agenda Item 5

Consider and take action regarding adoption of proposed amendments to the Region H bylaws.

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# Bylaws

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## **Region H Water Planning Group**

Originally adopted – May 1998  
Amended – October 2007

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## **ARTICLE I. NAMES**

### **Section 1. Organization**

The official name of this organization shall be the “Region H Water Planning Group” (hereinafter “Region H WPG”).

### **Section 2. Regional Water Planning Area**

The official name of the regional water planning area designated as “Region H” by the Texas Water Development Board (hereinafter “TWDB”) in accordance with 31 Texas Administrative Code (hereinafter “TAC”) Chapter 357 on February 19, 1998, shall be the “Region H Water Planning Area” (hereinafter “Region H WPA”).

## **ARTICLE II. ESTABLISHMENT AND PURPOSE**

The Region H WPG was established by appointment of an initial coordinating body by the TWDB on February 19, 1998, and one subsequent additional appointment by the initial coordinating body. The purpose of the Region H WPG shall be to provide comprehensive regional water planning and to carry out the related responsibilities placed on regional water planning groups by state law, including Texas Water Code Chapter 16 and TWDB rules, including 31 TAC Chapters 355, 357, and 358, in and for the Region H WPA.

## **ARTICLE III. PRINCIPAL ADMINISTRATIVE OFFICE**

The principal administrative office of the Region H WPG and the administrative officer for purposes of the Texas Open Records Act shall be designated by the voting members by motion or resolution and may be changed from time to time as necessary. The Chair of the Region H WPG shall insure that the mailing address and physical address of the principal office and administrative officer are provided to all members of the Region H WPG and the Executive Administrator of the TWDB.

## **ARTICLE IV. RESPONSIBILITIES**

The Region H WPG shall have the responsibility for performing the functions defined in Texas Water Code, Chapter 16 and in 31 TAC Chapters 355, 357, and 358 related to regional water planning groups for the Region H WPA. Foremost



among those responsibilities shall be the development of a regional water plan for the Region H WPA that identifies both short and long-term water supply needs and recommends water management strategies for addressing them.

## **ARTICLE V. VOTING MEMBERSHIP**

### **Section 1. Composition**

The initial voting members of the Region H WPG shall include the initial coordinating body appointed by the TWDB on February 19, 1998, plus the additional voting member appointed by the initial coordinating body to ensure adequate representation of the interests comprising the Region H WPA stated in Texas Water Code §16.053(c), if present, and other interests determined by the initial coordinating body. Thereafter, the voting membership of the Region H WPG shall include persons added or removed as provided under this Article. The voting membership of the Region H WPG shall not exceed ~~25-26~~ members.

### **Section 2. Terms of Office**

The initial terms of all initial voting members shall expire on September 1, 2001. Upon the expiration of the initial terms, all voting members shall draw lots for additional terms of five years or two years, such that half of the voting members' terms will expire in two additional years and the other half in five additional years. If there is an odd number of voting members at the time that lots are drawn, one more than half shall draw lots for the two-year terms.

Except for the initial terms of the initial voting members and the two-year terms described above, all subsequent terms of office for voting members shall be five years, the goal of staggering the terms of office having been accomplished. There are no limits to the number of terms a member may serve.

Upon the expiration of a member's term, a majority vote of the total voting membership shall be required for the member to continue to serve for a subsequent term. If a member fails to be affirmed for a subsequent term, then the voting members shall initiate procedures to ~~remove the member and~~ appoint a successor utilizing the process set forth under Sections 7 and 4 of this Article.

### **Section 3. Conditions of Membership**

In order to be eligible for voting membership on the Region H WPG, a person must represent the interest for which a member is sought, be willing to participate in the regional water planning process, and abide by these bylaws.

## Section 4. Selection of Members

Within forty-five calendar days of the removal of a voting member, the ~~Executive Nominating~~ Committee shall solicit nominations for a successor. Members of the Region H WPG may also submit nominations to the ~~Executive Nominating~~ Committee.

The ~~Executive Nominating~~ Committee shall receive and process the nominations and shall recommend a nominee to the voting membership as a whole, giving strong consideration to a consensus nominee from those individuals and entities that collectively represent that interest. The ~~Executive Nominating~~ Committee shall not be bound by the nominations received and may consider any person who meets the conditions of membership as a nominee. The voting membership as a whole shall not be bound by the recommendation of the ~~Executive Nominating~~ Committee and may consider any person who meets the conditions of membership as a nominee.

An affirmative vote of two-thirds of the total voting membership of the Region H WPG shall be required to appoint a nominee as a new voting member. If voting fails to select a new voting member after no more than three votes regarding that nominee, the voting members shall consider other nominations until a new member can be selected by an affirmative vote of two-thirds of the total voting membership.

In addition to selecting new voting members to fill vacancies caused by removal, the voting members may add members to ensure adequate representation of the interests comprising the Region H WPA by generally utilizing the selection process set forth in this section. If such a new member is added, the existing voting members shall determine by a majority vote of the total voting membership, the exact applicability of the membership term provisions and restrictions to the new member at the time of the new members selection.

In both the consideration of nominees and the selection of new voting members, the ~~Executive Nominating~~ Committee and other voting members shall strive to achieve a representative diversity within the region.

Outgoing voting members shall be given the opportunity to fully participate in the selection process for their successors and shall serve until their successors take office.

Because initial members continue to serve for additional terms of either two or five years at the end of their initial terms as set forth under Section 2 of this Article, this Section 4 shall not apply to the regular expiration of the initial terms

of the initial members; however, this section shall apply to the selection of a successor for a removed voting member during the initial terms.

## **Section 5. Attendance**

All members shall make a good faith effort to attend all Region H WPG meetings and hearings. Records of attendance shall be kept by the Secretary at all Region H WPG meetings and hearings and presented as part of the minutes. Voting members must attend at least one-half of the sum of all meetings and hearings during the preceding twelve months. Voting members of the Region H WPG that have not met the attendance requirement shall be considered to have excessive absences and shall be subject to removal from membership under Section 7 of this Article.

## **Section 6. Code of Conduct**

Members and designated alternates of the Region H WPG shall ethically conduct the business of the Region H WPG and shall avoid any form or appearance of a conflict of interest, real or apparent, by observing the following:

- (a) No member or designated alternate of the Region H WPG shall participate in any deliberation, decision, or vote that would constitute a conflict of interest under federal, state, or local law.
- (b) Potential conflicts of interest shall be clearly stated by the voting member or designated alternate prior to any deliberation or action on an agenda item with which the voting member or designated alternate may be in conflict. Where the potential conflict is restricted to a divisible portion of an agenda item, the Chair may divide the agenda item into parts, at the Chair's discretion, for deliberation and voting purposes. An abstention from participation in deliberations, decisions, or voting and the reasons therefor shall be noted in the minutes.

## **Section 7. Removal of Voting Members**

(a) Grounds for Removal of Voting Members. The following shall constitute grounds for removal of a voting member:

- (1) resignation;
- (2) inability to serve due to poor health or death;
- (3) change in status so that the member no longer represents the interest he or she was selected to represent;

- (4) excessive absenteeism as defined under Section 5 of this Article;
- (5) failure to abide by the code of conduct provisions set forth under Section 6 of this Article;
- (6) falsifying documents;
- (7) violation of these bylaws as determined by the voting members; or
- (8) the voting member's designated alternate engages in any acts described in subdivisions (5), (6), or (7) of this subsection.

(b) **Process for Removal of Voting Members.** Voting members may be removed at any time for any of the grounds for removal of voting members set forth in subsection (a) of this section. Any member with knowledge that events have occurred constituting a ground for removal under subsection (a) of this section shall report such information to the Chair. The Chair, upon discovering or receiving such information, shall contact that member to verify the events that have occurred or the acts that have been alleged. The member shall respond to the Chair within fifteen calendar days from the date of receipt of the Chair's request. The Chair may require any information or response to be in writing. If the Chair believes that a ground for removal may exist or if the member fails to make a timely response to the Chair's request, then the Chair shall confer with the Executive Committee regarding the matter, and the Executive Committee may vote to place an item on the next subsequent agenda addressing the possible removal of the member. If the Chair does not believe that a ground for removal exists and indicates that he or she will not place an item on the next agenda addressing the possible removal, then if five voting members request its inclusion on the agenda in writing, the Chair shall place an item on the next subsequent meeting agenda addressing the possible removal of the member.

At the meeting, all discussion and debate with regard to the possible removal shall take place in a closed, executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the Chair shall lay out all of the correspondence and information that has been received related to the possible removal, and the member subject to the possible removal may present evidence refuting or verifying the information presented. The voting members may remove the member by a two-thirds vote of the total voting membership. The member subject to the removal action shall not participate in the removal vote, nor shall his or her membership count as part of the total voting membership for purposes of calculating a two-thirds vote.

## **ARTICLE VI. NON-VOTING MEMBERSHIP**

### **Section 1. Mandatory Members**

(a) The voting members of the Region H WPG shall add the non-voting members from the Texas Water Development Board, the Texas Parks and Wildlife Department, and each adjacent regional water planning group as set forth in 31 TAC §357.4(g)(1)-(g)(3) and accept the designees appointed by the entities set forth therein. Such designees shall have no terms of office and shall serve until replaced by the designating entity. However, if the voting members decide by a two-thirds vote of the total voting membership that a particular designee is hindering the regional water planning efforts of the Region H WPG, the Chair shall make a written request within ten calendar days to the entity requesting the designation of another person to serve as the entity's designee.

(b) The voting members of the Region H WPG shall add at least one non-voting member from another region representing entities that supply or receive 1,000 acre-feet or more per year as set forth in 31 TAC §357.4(g)(4). Within thirty calendar days of adoption of these bylaws, or within forty-five calendar days of the removal of a 31 TAC §357.4(g)(4) member, the ~~Executive-Nominating~~ Committee shall solicit nominations for persons to serve as a 31 TAC §357.4(g)(4) member. Members of the Region H WPG may also submit nominations to the ~~Executive-Nominating~~ Committee.

The ~~Executive-Nominating~~ Committee shall receive and process the nominations and shall recommend a nominee to the voting membership as a whole, giving strong consideration to a consensus nominee from those individuals and entities that collectively represent the interest as described in 31 TAC §357.4(g)(4). The ~~Executive-Nominating~~ Committee shall not be bound by the nominations received and may consider any person who meets the conditions of membership as a nominee. The voting membership as a whole shall not be bound by the recommendation of the ~~Executive-Nominating~~ Committee and may consider any person who meets the conditions of membership as a nominee.

An affirmative vote of two-thirds of the total voting membership of the Region H WPG shall be required to appoint a nominee as a non-voting 31 TAC §357.4(g)(4) member. If voting fails to select a member after no more than three votes regarding that nominee, the voting members shall consider other nominations until a 31 TAC §357.4(g)(4) member can be selected by a two-thirds vote of the total voting membership.

Once selected, a 31 TAC §357.4(g)(4) non-voting member shall have no term of office and shall serve until removed by the voting members by affirmative vote of two-thirds of the total voting membership.

## **Section 2. Discretionary Members**

The voting members of the Region H WPG may add or remove as a non-voting member an entity set forth in 31 TAC §357.4(h) by a two-thirds vote of the total voting membership. If an entity is added, the Chair shall make a written request within ten calendar days to the entity requesting the designation of a person to serve as the entity's designee. Such designees shall have no terms of office and shall serve until replaced by the designating entity or until the entity is removed as a non-voting member. However, if the voting members determine by a two-thirds vote of the total voting membership that a particular designee is hindering the regional water planning efforts of the Region H WPG and that the entity should remain as a non-voting member, the Chair shall make a written request within ten calendar days to the entity requesting the designation of another person to serve as the entity's designee.

## **Section 3. Code of Conduct**

All non-voting members shall comply with the code of conduct provisions under Section 6 of Article V of these bylaws.

# **ARTICLE VII. DESIGNATED ALTERNATES**

Each member shall designate an alternate to represent him/her when he/she is unable to attend a meeting or hearing. Each member must notify the Chair in writing of the name and address of the member's designated alternate at least forty-eight hours prior to the first meeting or hearing at which the designated alternate will appear on behalf of the member. If the member fails to provide such notice, the Chair may forbid the participation of the designated alternate at the meeting or hearing. The Chair shall not recognize the designation of more than one alternate per member at any given time. The Chair shall not recognize more than two alternate designations of any kind per member per calendar year unless the Region H WPG expressly decides to waive this provision.

The designated alternate shall enjoy the same voting privileges, or lack thereof, and shall be bound by the same duties, terms, and conditions as the member they represent, except as otherwise provided in these bylaws. However, a designated alternate for a voting member who serves as an officer shall not be allowed to serve in the capacity as an officer in the member's absence.

The Chair shall provide each member with a current list of all members and their designated alternates.

## **ARTICLE VIII. OFFICERS**

### **Section 1. Officers, Restrictions, and Terms of Office**

Voting members of the Region H WPG shall select from the voting membership a Chair, Vice Chair, and Secretary to serve as officers. Each officer shall serve a term of one calendar year. However, the terms of the initial officers selected under Section 2 of this Article shall expire when the regular officers take office as provided under this Article. Except as provided under Section 4 of this Article, an officer shall serve until his or her successor takes office. No two voting members representing the same interest shall serve as officers at the same time. Elections shall be held annually, with no restrictions on the number of consecutive terms an individual may serve as an officer other than those that apply because of his or her status as a voting member under these bylaws.

### **Section 2. Selection**

(a) Initial Officers. Within fourteen days after the adoption of these bylaws, the voting members shall select initial officers. Nominations shall be made from the floor by voting members. The voting members shall select officers from among the nominees by a majority vote of the total voting membership.

(b) Regular Officers. Regular officers shall be selected at the first meeting of each calendar year after the calendar year in which these bylaws were adopted. Written notice of the meeting to select officers shall be ~~mailed-sent~~ to all members of the Region H WPG by the current Secretary thirty calendar days prior to the meeting. The Nominating Committee shall solicit nominations for officers and shall recommend nominees to the voting membership. Nominations ~~shall may~~ also be made from the floor by voting members. The voting members shall select officers from among the nominees by a majority vote of the total voting membership.

### **Section 3. Removal of Officers**

Any officer may be removed from office for any of the grounds for removal of voting members set forth under Article V of these bylaws or for repeated failure to carry out the duties of the office by a two-thirds vote of the total voting membership. Removal of an officer shall be set as an agenda item at the next

scheduled meeting upon written request signed by five voting members to the Chair or Secretary. Such request must include a copy of any documents or written information that the requesting members intend to present at the removal meeting.

The Chair or Secretary receiving the request shall notify the officer in writing that he or she shall be the subject of a removal action at the next scheduled meeting and shall include a copy of any documents or written information submitted by the requestors.

At the meeting, all discussion and debate with regard to the possible removal shall take place in a closed, executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the presiding officer shall lay out all of the correspondence and information that has been received related to the possible removal, and the member subject to the possible removal may present evidence refuting or verifying the information presented. If the Chair is the subject of the possible removal action, the Vice-Chair shall preside over the meeting during the agenda item concerning the Chair's removal. The officer subject to the removal action shall not participate in the removal vote, nor shall his or her membership count as part of the total membership for purposes of calculating a two-thirds vote. Any vacancy caused by the removal shall be filled as provided under Section 4 of this Article.

## **Section 4. Vacancies of Officers**

Whenever an officer vacancy exists because of death, resignation, or removal, the vacancy shall be filled at the next scheduled meeting after the event causing the vacancy. The Nominating Committee shall solicit nominations for a replacement officer and shall recommend a nominee to the voting membership. Nominations ~~shall~~ may also be made from the floor by voting members. The voting members shall select a replacement officer from among the nominees by a majority vote of the total voting membership. The next highest ranking officer shall serve in the vacant position until a successor takes office, unless the office of the Secretary becomes vacant, in which case the Chair shall appoint a willing voting member to serve as Secretary until the successor to the Secretary takes office. The person selected to fill a vacancy for an officer shall serve for the unexpired term of his or her predecessor in office.

## **Section 5. Duties of Each Officer**

(a) Chair. The Chair shall be the executive officer of the Region H WPG. The Chair will preside at all meetings of the Region H WPG and perform all duties provided by these bylaws. If the Chair is unable to carry out his/her duties, the Vice Chair shall assume the duties of the Chair.



(b) Vice Chair. The Vice Chair shall assist the Chair in the discharge of his/her duties and, in the absence of the Chair, shall assume the Chair's full responsibilities and duties. In the event the Chair is unable to carry out his/her duties, the Vice Chair shall serve as Chair until the Region H WPG elects a new Chair under Section 4 of this Article. The Vice-Chair shall perform other duties as assigned by the Chair, or these bylaws.

(c) Secretary. The Secretary shall maintain the minutes and take attendance of the Region H WPG meetings. The minutes and attendance shall be kept as part of the Region H WPG official records. The Secretary shall insure that all notices are properly posted as provided in the bylaws, as required by law, and as required by the Texas Open Meetings Act. The Secretary shall perform other duties as assigned by the Chair or these bylaws. If both the Chair and Vice Chair are unable to carry out the duties of the Chair, the Secretary shall assume the duties of the Chair.

## **Section 6. Executive Committee**

The Executive Committee shall be composed of five Region H WPG members, including the Chair, Vice Chair, Secretary, and two members-at-large. No two voting members representing the same interest shall serve as members of the Executive Committee at the same time. The two members-at-large shall be selected annually in the same manner and with the same terms as set forth for the selection of officers under this Article. Members-at-large shall be removed and their vacancies filled in the manner prescribed for officers under this Article.

The Executive Committee shall be responsible for carrying out the duties imposed on it in these bylaws. The voting members of the Region H WPG may delegate any purely administrative decisions to the Executive Committee unless provided otherwise in these bylaws. The Chair of the Region H WPG shall serve as Chair of the Executive Committee.

## **Section 7. Designated Alternates**

A designated alternate of a member serving as an officer shall not serve in the member's capacity as an officer in lieu of the member. When an officer is absent or otherwise unable to serve, the next highest ranking officer shall serve for the officer. If no lower ranking officer exists or can serve, then a member designated by the Chair shall serve for the officer. In the event that the Chair has failed to designate a member, then the voting members shall select a member to serve for the officer.

## **ARTICLE IX MEETINGS**

### **Section 1. Open Meetings and Notice**

All meetings of the Region H WPG and any subregional water planning groups it has created, shall be posted and open to the public in the manner of a governmental body under the Texas Open Meetings Act and as set forth in TWDB rules. All actions of the Region H WPG shall be deliberated and undertaken in open meeting, unless otherwise authorized by the Texas Open Meetings Act. The time and place of meetings shall be set to facilitate, to the greatest extent possible, the participation of the public in the regional water planning process. Copies of all materials presented or discussed shall be made available for public inspection prior to and following any meeting of the Region H WPG. It shall be the practice of the Region H WPG to provide an opportunity for public comment near both the beginning and end of each regular meeting.

### **Section 2. Regular Meetings**

The Region H WPG will generally hold at least one regular meeting in each calendar quarter, however, meetings may be scheduled less frequently if appropriate. The Secretary shall insure that an advance notice and an agenda for regular meetings is provided to the full membership of the Region H WPG at least ten calendar days in advance by first class U.S. Mail, facsimile, or electronic mail. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

### **Section 3. Called (Special) Meetings**

The Chair or a majority of the voting members of the Region H WPG may call special meetings of the Region H WPG. The Secretary shall insure that advance notice and an agenda for the called meeting is provided to the full membership of the Region H WPG at least five calendar days in advance by first class U.S. Mail, facsimile, or electronic mail. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

### **Section 4. Agenda**

The Secretary of the Region H WPG shall insure that an agenda is prepared and distributed for all meetings, in accordance with Sections 2 and 3 of this Article.

Items shall be placed on the agenda by the request of the Chair or by the request of at least three voting members of the Region H WPG. Consideration for approval of the previous meeting's minutes, as applicable, shall always be among the first items on the agenda. Copies of the agenda and all supporting information shall be made available for public inspection prior to and following any meeting of the Region H WPG.

## **Section 5. Quorum**

A quorum of the Region H WPG shall be a simple majority of the voting members or their designated alternates excluding vacancies. At least a quorum shall be necessary to conduct any business of the Region H WPG.

## **Section 6. Applicability of Robert's Rules of Order**

Except as otherwise provided in these bylaws, meetings of the Region H WPG shall be conducted under the provisions of the most current edition of *Robert's Rules of Order*. However, failure to follow such rules shall not constitute grounds for appeal of an action or a decision of the Region H WPG.

## **Section 7. Public Hearings/Meetings Required by Law**

The Region H WPG shall post notice and conduct public hearings and public meetings that are specifically required by statute and/or TWDB rule, including those set forth for preplanning, draft regional water plan presentation, adoption of amendments to the regional water plan, and final regional water plan adoption, in accordance with the requirements of relevant state law and/or TWDB rules. Notification requirements may be different than those specified in Section 1 of this Article and are specifically delineated in Texas Water Code §16.053 and/or 31 TAC §357.12.

## **Section 8. Minutes**

(a) The Secretary shall insure that minutes of all meetings of the Region H WPG are prepared. The minutes shall:

- (1) state the subject of each deliberation;
- (2) indicate each vote, order, decision, or other action taken;

(3) indicate those members in attendance, noting the presence of a quorum, and noting the presence of those members of the public who participate in the course of the meeting;

(4) represent an accurate summary of the meeting's record; and state any other information required by these bylaws to be included in the minutes.

(b) The Secretary shall insure that true copies of the minutes are provided to the full membership as soon as possible following the meeting, but no later than ten calendar days prior to the next regular meeting of the Region H WPG.

## **ARTICLE X. MAKING DECISIONS**

### **Section 1. Applicability; No Written Proxies**

(a) Unless the method for making a particular decision is set forth in these bylaws, the Region H WPG, its committees, and subgroups shall make all decisions utilizing the process set forth in Section 2 of this Article.

(b) Written proxies shall not be allowed in any decision-making by the Region H WPG, its committees, or its subregional water planning groups. However, designated alternates shall be allowed to participate in decision making as set forth in these bylaws. Because it is important in achieving consensus for all members to participate actively, keep up-to-date on the progress of the group, and develop a common base of information, members shall in good faith attempt to minimize the number of times they are absent from meetings or are represented by their designated alternates.

### **Section 2. Decision-Making Process**

(a) Use of Consensus. The Region H WPG shall attempt to make decisions using a consensus decision-making process. Consensus is an agreement built by identifying and exploring all members' interests and by assembling a package agreement which satisfies these interests to the greatest extent possible. A consensus is reached when all voting members agree that their major interests have been taken into consideration and addressed in a satisfactory manner so that they can support the decision of the group. The process of building consensus involves the development of alternatives and the assessment of the impacts of those alternatives.

Consensus does not necessarily mean unanimity. Some members may strongly endorse a particular solution while others may accept it as a workable agreement.

A member can participate in the consensus without embracing each element of the agreement with the same fervor as other members, or necessarily having each of his or her interests satisfied to the fullest extent. In a consensus agreement, the members recognize that, given the combination of gains and trade-offs in the decision package and given the current circumstances and alternative options, the resulting agreement is the best one the voting members can make at this time.

(b) Failure to Reach Consensus. If after good faith negotiations it appears likely to the Chair that the voting members will be unable to reach consensus, the Chair shall entertain a motion to put the issue to a vote to be conclusively decided by agreement of not less than a majority of the total voting membership, unless otherwise specified in these bylaws.

### **Section 3. Final Adoption of Regional Water Plan; Amendments**

The voting members of the Region H WPG shall finally adopt the regional water plan for the Region H WPA, and any amendments thereto, by a two-thirds vote of the total voting membership.

## **ARTICLE XI. BOOKS AND RECORDS**

### **Section 1. Required Documents and Retainment**

Records of the Region H WPG shall be kept at the principal administrative office of the Region H WPG for a period of time equal to the retention period required of a local government entity subject to the Local Government Records Act.

### **Section 2. Inspection and Copying**

Records of the Region H WPG shall be available for inspection and copying at the principal administrative office during normal business hours. Procedures and fees for copying and inspection shall be the same as those used by the political subdivision housing the principal administrative office of the Region H WPG for inspection and copying of its own public records.

### **Section 3. Availability of Reports**

All reports, planning documents, and work products resulting from projects partially funded by the TWDB shall be made available to the TWDB, the Texas Parks and Wildlife Department, and the Texas Natural Resource Conservation

Commission or their successor agencies. At least one copy of the approved regional water plan shall be placed in the county clerk's office for each county and in at least one public library of each county having land within the Region H WPA, in accordance with state law.

## **ARTICLE XII. SUBREGIONAL WATER PLANNING GROUPS**

### **Section 1. Establishment**

The Region H WPG may by motion establish subregional water planning groups to assist and advise the Region H WPG in the development of the regional water ~~management~~ plan. Subregional water planning groups may be formed to address specific issues assigned by the Region H WPG and may have a specified term of membership.

### **Section 2. Membership**

Membership in subregional water planning groups shall generally follow the requirements and procedures of Article V of these bylaws; membership of subregional water planning groups should be inclusive, rather than exclusive in nature; the interests identified in the initial coordinating body will be invited to participate, as well as other interests that have been identified. Appointments to subregional water planning groups shall be made by a two-thirds vote of the total voting membership. The terms of office for all members of subregional water planning groups shall be either upon the expiration of the term, if any, specified by the Region H WPG in the establishing motion for the subregional water planning group, or upon the expiration of the persons membership in the Region H WPG.

### **Section 3. Officers**

The Chair, Vice Chair, and Secretary of a subregional water planning group shall be selected from the duly-elected members of the respective subregional water planning group and shall be elected to their respective offices by a majority vote of the total membership of the subregional water planning group. Additional subregional water planning group offices with associated responsibilities may be created as necessary by the members of the subregional water planning group. The additional officers shall be elected by a majority affirmative vote of the total membership of the subregional water planning group.

### **Section 4. Meetings**

Requirements and procedures for subregional water planning group meetings shall follow those established in Article IX of these bylaws, including requirements for notice. Subregional water planning groups may adopt their own rules of procedure if authorized by the Region H WPG and if the rules are not in conflict with state law, TWDB rules, or these bylaws.

## **Section 5. Books and Records**

Requirements and procedures for subregional water planning group books and records shall follow those established for the Region H WPG in Article XI of these bylaws.

## **Section 6. Code of Conduct**

Members of a subregional water planning group are subject to the requirements of Article V, Section 6 of these bylaws.

# **ARTICLE XIII. COMMITTEES**

## **Section 1. Establishment**

The Region H WPG may establish committees to address issues deemed appropriate by the Region H WPG. Committees may be formed to address specific issues assigned by the Region H WPG and may have a specified term of membership.

## **Section 2. Membership**

Membership in committees shall be determined by the Chair of the Region H WPG. Committees may include both voting and nonvoting members of the Region H WPG, but in no case shall a committee contain more than ~~nine-half of~~ the voting members. The terms of committee membership for all members of committees shall expire either upon the expiration of the term of the committee, if any, specified by the Chair of the Region H WPG, upon the expiration of the persons membership in the Region H WPG, or upon the dissolution of the committee by the Chair of the Region H WPG.

## **Section 3. Officers**

A Chair for each committee shall be chosen from its membership by the Chair of the Region H WPG.

## **Section 4. Meetings**

Committees shall post notice of meetings at the principal administrative office of the Region H WPG unless a quorum of the voting members of the Region H WPG will be present at the meeting, in which case the committee must post notice in accordance with the Texas Open Meetings Act and as set forth in TWDB rules.

In order to determine ahead of time whether full posting will be required for a committee meeting, any members of the Region H WPG that are not members of a particular committee but are intending to attend the meetings of that committee, must notify the committee Chair at least a week in advance of any meetings that they plan to attend. In order to make the regional planning process as transparent to the public as possible, the Chair of each Region H committee that meets on a subject pertaining to the substantive development of the regional plan is encouraged to exceed the requirements of the Texas Open Meetings Act by holding all committee meetings open to the public.

## **Section 5. Books and Records**

Requirements and procedures for committee books and records shall follow those established for the Region H WPG in Article XI of these bylaws.

## **Section 6. Code of Conduct**

Members of a committee are subject to the requirements of Article V, Section 6 of these bylaws.

# **ARTICLE XIV. COMPENSATION**

Members of the Region H WPG are not to be compensated for their expenses by the State of Texas or by the political subdivision designated by the Region H WPG to make application for grant funding. All travel expenses will be documented by the members and submitted to the political subdivision designated by the Region H WPG to apply to TWDB for funding. The political subdivision contracting with the TWDB for the Region H WPG shall compile the travel information from the members, which will be counted as an in-kind expense at the state rate that is in effect at the time the travel occurred.

# **ARTICLE XV. COST ALLOCATION**



The voting members of the Region H WPG shall develop and approve an equitable method or formula for the allocation of costs associated with the local match for state funding.

## **ARTICLE XVI. CONTRACTUAL SERVICES**

The voting members of the Region H WPG shall make all decisions related to final approval of persons or entities selected to provide contractual services for the Region H WPG, including all services related to preparation, development, or revisions of the regional water plan for the Region H WPA. However, the voting members may delegate to the Executive Committee the authority to make purely administrative decisions concerning amendments to TWDB Research and Planning Fund grant contracts for services related to regional water planning, except those decisions concerning amendments related to scopes of work and budgets.

## **ARTICLE XVII. ADOPTING AND AMENDING THE BYLAWS**

These bylaws shall have full force and effect upon approval and adoption by the voting members of the Region H WPG, acting on behalf of the interests comprising the Region H WPA, and upon submission to the TWDB in compliance with 31 TAC §357.4. The voting members shall adopt these bylaws and any amendments thereto by a two-thirds vote of the total voting membership.

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## Agenda Item 6

Receive presentation from Texas Water Development Board  
on Regional Water Planning in Texas - Introduction to the  
5th Cycle.

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# Regional Water Planning in Texas

## Introduction to the 5<sup>th</sup> Cycle

### Sarah Backhouse

Manager, Regional Water Planning  
Water Use, Projections, & Planning  
Texas Water Development Board

*Presented at the Region H RWPG meeting  
February 28, 2017*

The following presentation is based upon professional research and analysis within the scope of the Texas Water Development Board's statutory responsibilities and priorities but, unless specifically noted, does not necessarily reflect official Board positions or decisions.

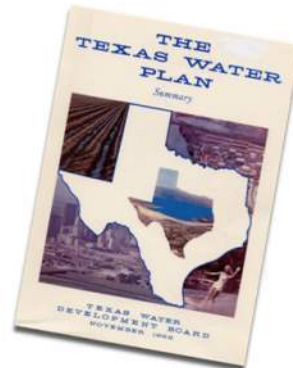
## Overview

- Background on regional and state water planning in Texas
- Overview of regional water planning groups
- Fundamentals of water planning
- Foundation of the State Water Plan

## Water Planning: Legislative Response to Drought

### **1950s – Drought of Record**

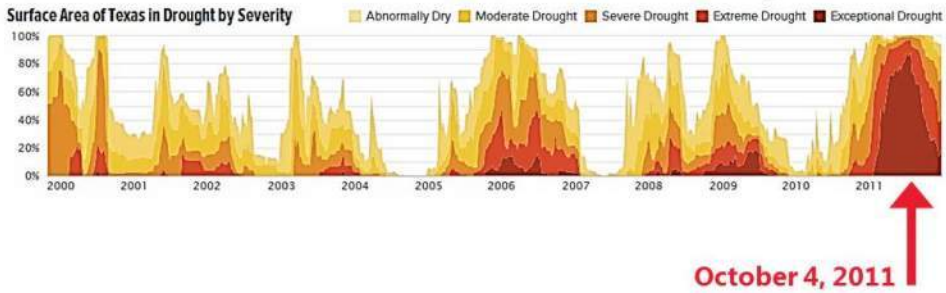
- 1957: Creation of TWDB
- \$200 million in Water Development Fund



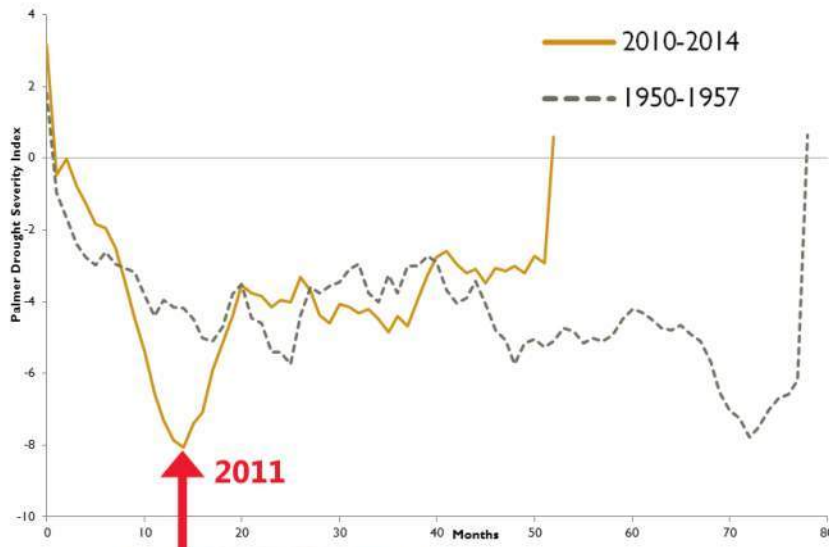
# State Water Planning



# Why do we plan?

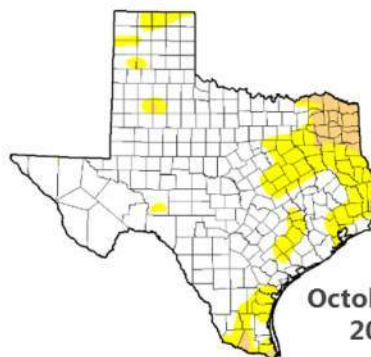


## Worst Statewide Texas Droughts



## Types of Drought

- Meteorological
- Agricultural
- Hydrological\*
- Socioeconomic



\*regional water planning focuses on drought impacting water supplies



# Overview of Regional Water Planning Groups



# 16 Regional Water Planning Areas





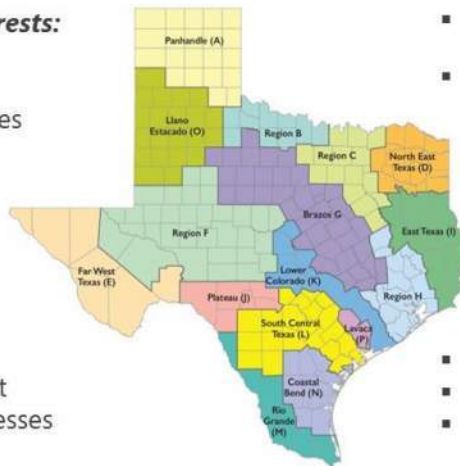
Diverse  
interest groups  
represented



## Voting Member Categories

### Statutory interests:

- Public
- Counties
- Municipalities



- Industries
- Agriculture
- Environment
- Small businesses

- Electric-generating utilities
- River authorities

- Water districts
- Water utilities
- Groundwater management areas (varies by region)

There are approximately 370 voting members in the 16 groups



## Key Responsibilities of Planning Group Members

- Represent interest category and region
- Develop a plan that serves region and state
- Consider local water plans
- Ensure adoption of a regional water plan by the statutory deadline that meets all requirements

## How do planning groups function?

- Select a host political subdivision
- Select technical consultants
- Self-govern (maintain own bylaws and membership)
- Hold regular public meetings and sub-group meetings as necessary
- Consider stakeholder input and make decisions in accordance with bylaws

## Public Notice Requirements

- Subject to Texas Open Meetings Act
- Follow significant public notice requirements (requirements vary depending on activity)
- Must hold initial preplanning public meeting for input on the next plan
- Must present how the planning group will identify potentially feasible water management strategies at a public meeting

## Funding the Planning Process

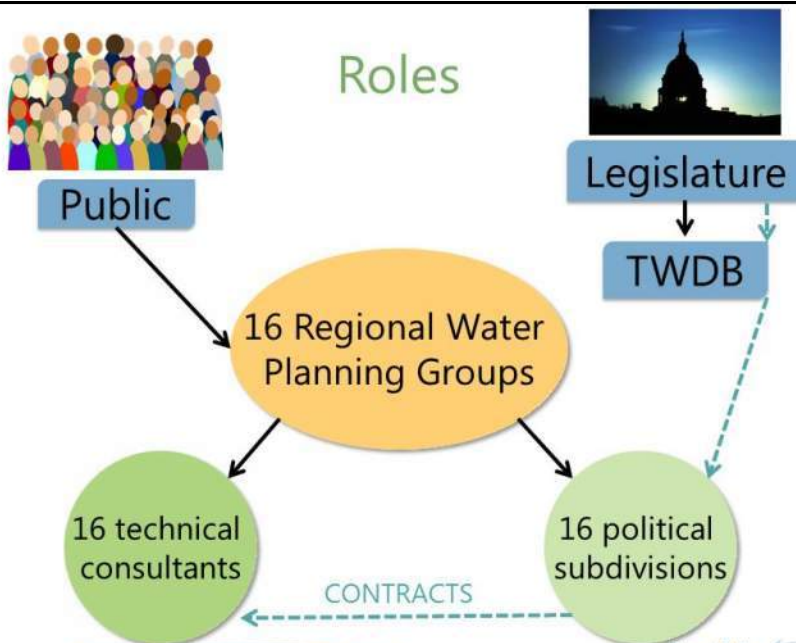
- Legislative appropriations
- RWPGs apply for funding (based on 5-year cycles)
- Funding through TWDB contract with political subdivision
- Political subdivisions subcontract with technical consultants
- RWPGs direct work of consultants

## Relevant Documents

- Statute
- Administrative rules
- Contract Scope of Work/Task budget
- Contract Exhibit C – general guidelines for regional water plan development
- Contract Exhibit D – guidelines for data deliverables

[http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/current\\_docs.asp](http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/current_docs.asp)

## Roles



## Incentives to Participate

- TWDB funding
- TCEQ permitting



## Fundamentals of Water Planning

## Basic Planning Parameters

- Meet **drought of record** water needs
- 50-year planning horizon
- 5-year planning cycle
- 6 categories of water use: municipal, manufacturing, mining, irrigation, livestock, and steam-electric power
- Geographic breakdown of water user group information by county, river basin, and region

## Planning Units & Key Terms

- **Drought of Record (DOR)** = period of time when historical records indicate that natural hydrological conditions would have provided the least amount of water supply
- Data is **decadal** (over 50 year period)
- Water volumes are in **acre-feet** (*1 acre-foot = 325,851 gallons*)
- **Water User Group** = "WUG"
- **Wholesale Water Provider** = "WWP"
- **Major Water Provider** = "MWP"

## Key Planning Terminology

**Availability\*** = maximum amount of raw water that could be produced by a source during a repeat of the **DOR**

**Existing Supply\*** = maximum amount of water that is physically and legally accessible for immediate use by a **WUG** under a repeat of **DOR** conditions

\*See handout page 1: Section 6.1 from the 2017 State Water Plan

## Key Planning Terminology

**Demand** = volume of water required to carry out the anticipated domestic, public, and/or economic activities of a **WUG** during drought conditions

**Need** = a potential water supply shortage, based on the difference between water demands and existing water supplies (can be met by implementing recommended water management strategies)

**Unmet Need** = the portion of an identified water need that is not met by recommended water management strategies



## Key Planning Terminology

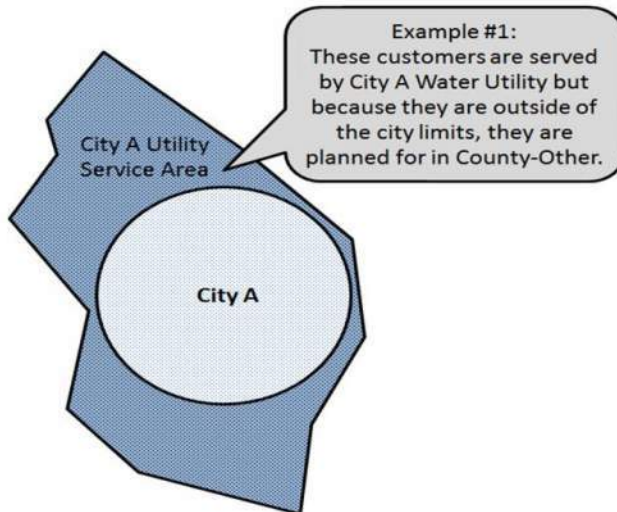
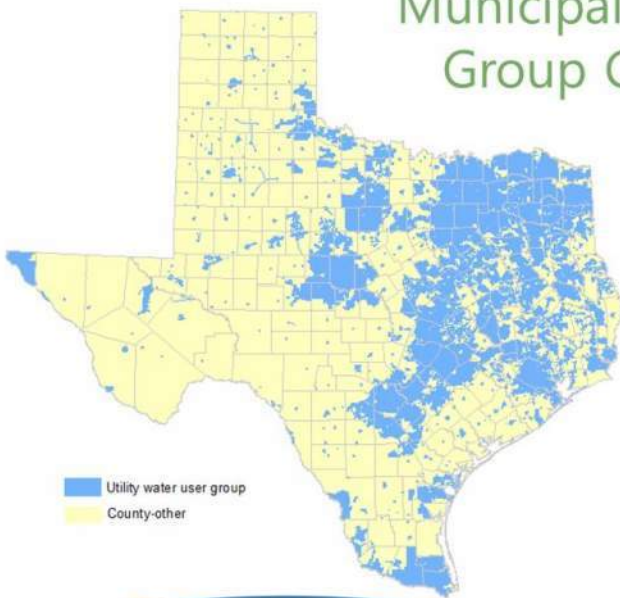
**Water Management Strategy (WMS)** = a plan to meet a need for additional water by a discrete **WUG**, through increasing total water supplies or maximizing existing supplies, including through reducing demands

**Water Management Strategy Project (WMSP)** = a water project that has a capital cost and when implemented, would develop, deliver, or treat additional water supplies or conserve water for **WUGs** or **WWPs**

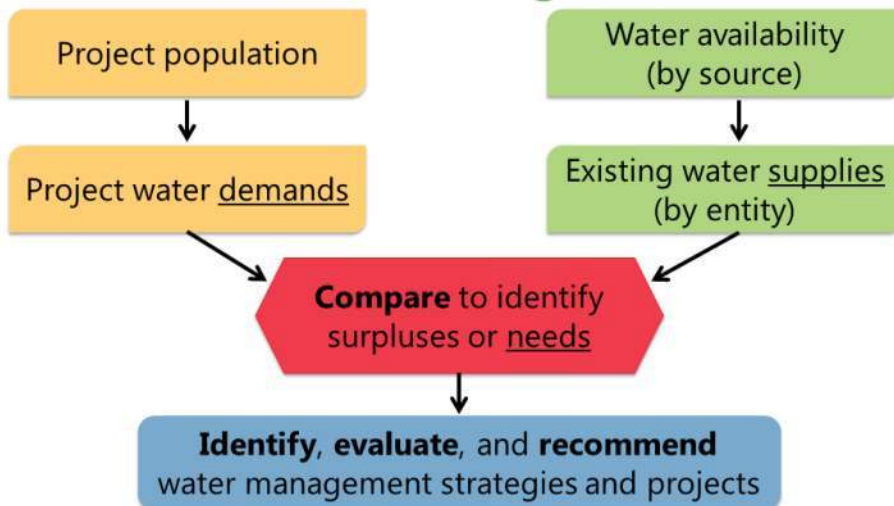
## WUGs in the 2016 Regional Water Plans

Demand Category	Number of WUGs
<b>Municipal WUGs</b>	
Cities & Utilities	1,364
County-Other	254
<b>Non-municipal WUGs</b>	
Manufacturing	183
Mining	228
Steam-Electric Power	85
Irrigation	241
Livestock	254
<b>Total number of WUGs</b>	<b>2,609</b>

## Municipal Water User Group Categories



## Water Planning Basics



## Path to Recommending Strategies and Associated Projects

- **identify** “potentially feasible” strategies and projects
- **evaluate** potentially feasible strategies and projects
- **compare** evaluated strategies and projects
- **recommend** strategies and projects that are “cost-effective and environmentally sensitive” 31 TAC 357.35(b)

## Potentially Feasible Water Management Strategies\*

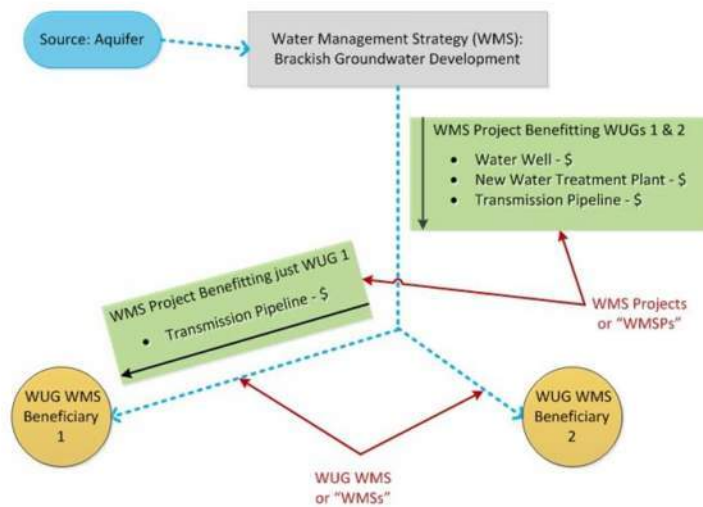
- WMS's that must be considered:
  - Expanded use of existing supplies
  - New supply development
  - Conservation and drought management measures
  - Reuse of wastewater
  - Interbasin transfers of surface water
  - Emergency transfers of surface water
- Water conservation and drought management measures must be considered for every water user group with an identified water need

\*See handout page 2: List of potentially feasible WMSs required to be considered

## Evaluation of Strategies and Associated Projects

- Evaluations are based on:
  - water quantity and reliability
  - financial costs
  - impacts to environment and agriculture
  - impacts to water quality
  - other factors such as regulatory requirements, time required to implement, etc.

## Water Management Strategy vs. Project



## Prioritization of Projects

- Regional and state level prioritization of WMSPs are required by SWIFT Legislation
- Each recommended WMSP must be prioritized
- Regional prioritization based on uniform standards developed by stakeholder committee (RWPG Chairs)
- State prioritization system based on statute and TWDB administrative rules

## Regional Planning Deliverables

- Standard contract tasks associated with 11 Chapters
- Populate Online State Water Plan database (DB22)
- Report documents: Technical Memorandum, Initially Prepared Plan, and Final Plan
- List of prioritized projects

## Standard RWP Chapters\*

1. Planning area description
2. Population and water demand projections
3. Water supply analysis
4. Identification of water needs
5. Water management strategies and projects
6. Impacts of plan and consistency with protection of the State's water, agricultural, and natural resources

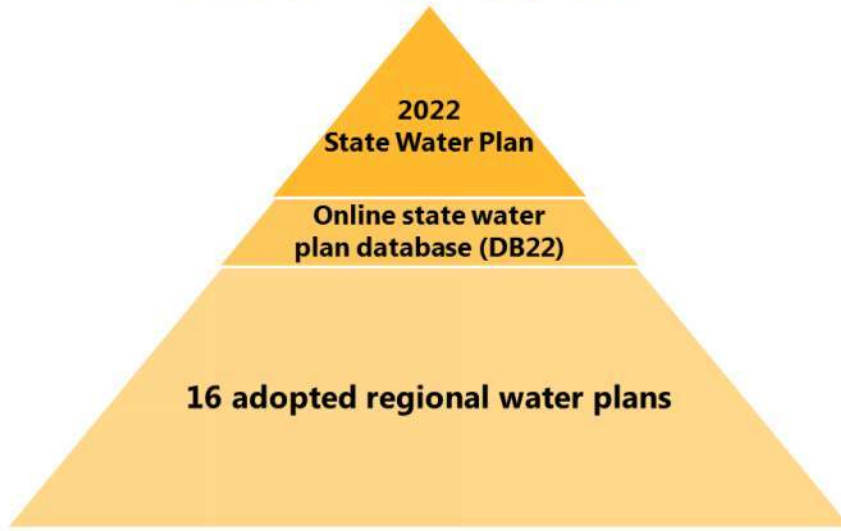
\*See handout page 3: General Document Cross-Reference Table

## Standard RWP Chapters (cont.)

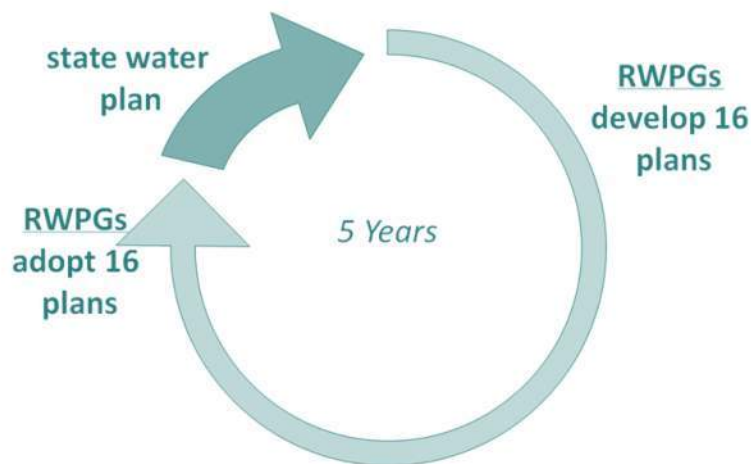
7. Drought response information, activities, and recommendations
8. Unique stream segments, unique reservoir sites, and policy recommendations
9. Infrastructure financing analysis
10. Adoption of plan
11. Implementation and comparison to previous regional water plan

## Foundation of the State Water Plan

## Bottom Up Approach



## Regional & State Planning Cycles





## Audience


- The State Water Plan is delivered to the Governor, the Legislature, and the public
- Key aspects for their consideration:
  - Long-term projections of water supplies, demands, and needs
  - Project costs and funding needs
  - Policy recommendations



Texas Water  
Development Board

## Snapshot of the 2017 State Water Plan

**5,500** strategies 

**2,500** projects 

Capital cost of **\$63** billion 

Access by Planning Interval: 5 Years

Decade: 2019 | 2020 | 2040 | 2050 | 2060 | 2070

Themes: POPULATION | DEMAND | EXISTING SUPPLY | NEEDS/POTENTIAL SHORTAGES | STRATEGY SUPPLIES

### REGION H Water User Groups - 2020 - Strategy Supplies

Each water user group is mapped to a single point near its primary location. Therefore, an entry with a large or multiple service area may be displayed outside the specific area being viewed.

### REGION H Strategy Supplies Breakdown - 2020

Share by Water Resource

Share by Strategy Type

Strategy Type	Amount (F)
Other Surface Water	43.2% (22,445)
Surface Reservoir	14.5% (7,531)
New Surface Reservoir	14.1% (7,411)
Impoundment Conservation	12% (6,123)
Conservation Use	3.2% (1,712)
Municipal Conservation	2.8% (1,484)
Groundwater Conservation	2.1% (1,140)
Groundwater - Wells & Other	1.8% (938)
Other Conservation	1.2% (621)
Other - Direct Reuse	1% (514)
Seawater Desalination	0% (0)

### REGION H Raw Data - 2020 - Strategy Supplies

Strategy:  Source:  County:  Entry:  Sub Dimension:

Strategy	Source	County	Entry A	2020 Strategy Supplies
ADDITIONAL SUPPLY				0
FROM BIA				0
	ALBINO CREEK			0
	LAKE RESERVOIR			0
	DIST. RESID.			0



## Additional TWDB Presentations

- Update on revised 31 TAC Chapter 357 rules
- What's new in the 5<sup>th</sup> cycle of planning
- Others based on planning group requests



## Questions?

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### **Sarah Backhouse**

Manager, Regional Water Planning  
Water Use, Projections, & Planning  
Texas Water Development Board  
[Sarah.Backhouse@twdb.texas.gov](mailto:Sarah.Backhouse@twdb.texas.gov)



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## Supplemental Handout to the Regional *Water Planning in Texas, Introduction to the 5<sup>th</sup> Cycle Presentation*

### 1) Excerpt from the 2017 State Water Plan that explains “availability” vs. “existing supply”

#### “6.1 Evaluating water resources for planning<sup>1</sup>”

Estimating how much water Texans will have to meet their water demands is a two-step process that examines both water *availability* and *existing supply*. Those two terms have very specific, and not necessarily intuitive, meanings in the water planning process.

Water availability refers to the maximum volume of raw water that could be withdrawn annually from each source (such as a reservoir or aquifer) during a repeat of the drought of record. Availability does not account for whether the supply is connected to or legally authorized for use by a specific water user group. Water availability is analyzed from the perspective of the source and answers the question: *How much water from this source could be delivered to water users as either an existing water supply or, in the future, as part of a water management strategy?* Determining water availability is the first step in assessing potential water supply volumes for a planning group.

Second, planning groups evaluate the subset of the water availability volume that *is already connected* to water user groups. This subset is defined as existing supply. Existing water supplies are based on legal access to the water as well as the infrastructure (such as pipelines and treatment plant capacity) already in place to treat and deliver the water to the “doorstep” of water user groups. Existing supply is analyzed from the perspective of water users and answers the question: *How much water supply could each water user group already rely on should there be a repeat of the drought of record?*

For example, the firm yield of a surface water reservoir may be 100,000 acre-feet per year. Of that 100,000 acre-feet per year in supplies available at the source, the current pipeline to that source could only convey 60,000 acre-feet per year to users as an existing supply. There remains, therefore, an additional 40,000 acre-feet per year in available water that could serve as the basis for a future water management strategy. Within a county, for another example, there may be a modeled available groundwater volume of 50,000 acre-feet per year, but because water users’ current permits and pumping facilities are only able to pump 20,000 acre-feet per year for existing supplies, there remains 30,000 acre-feet per year in available groundwater that could support water management strategies.

Because existing supplies are a subset of the availability of water sources, existing supplies cannot exceed a source’s availability without the risk of a water user running short of water in a drought of record. If existing supplies exceed availability it is called an over-allocation. To ensure that planning groups did not assign more water supply to a water source than the source could provide in a drought, the TWDB performed a detailed, statewide accounting of all assigned existing water supply volumes and notified planning groups of over-allocations. Planning groups then made adjustments to their draft plans so that supplies did not exceed the availability of any source in the final plans.”

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<sup>1</sup> Page 61 of the 2017 State Water Plan.

**2) Potentially feasible WMSs required to be considered by planning groups, per Texas Water Code §16.053(e)(3) and 31 Texas Administrative Code §357.34(c) include**

- conservation<sup>2</sup> [*perennial demand management*];
- drought management<sup>3</sup> [*temporary demand management*];
- reuse;
- management of existing water supplies;
- conjunctive use;
- acquisition of available existing water supplies;
- development of new water supplies;
- developing regional water supply facilities or providing regional management of water supply facilities;
- developing large-scale desalination facilities for seawater or brackish groundwater that serve local or regional brackish groundwater production zones identified and designated under TWC §16.060(b)(5);
- developing large-scale desalination facilities for marine seawater that serve local or regional entities;
- voluntary transfer of water within the region using, but not limited to, contracts, water marketing, regional water banks, sales, leases, options, subordination agreements, and financing agreements;
- emergency transfer of water under TWC §11.139;
- interbasin transfers of surface water;
- system optimization;
- reallocation of reservoir storage to new uses;
- enhancements of yields;
- improvements to water quality;
- new surface water supply;
- new groundwater supply
- brush control;
- precipitation enhancement;
- aquifer storage and recovery;
- cancellation of water rights; and
- rainwater harvesting.

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<sup>2</sup> RWPGs must consider water conservation practices, including potential applicable best management practices, for each identified water need (31 TAC §357.34(g)(2)). If RWPGs do not adopt a water conservation strategy to meet an identified need, they shall document the reason in the RWP (31 TAC §357.34(g)(2)(B)).

<sup>3</sup> RWPGs shall consider drought management measures for each identified need... If a RWPG does not adopt a drought management strategy for a need it must document the reason in the RWP (31 TAC §357.34(g)(1)).

**3) General Document Cross-Reference Table from *Draft First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development***

Regional Water Planning Contract Document References			2021 Regional Water Plan Chapter, Associated TAC Sections, and Content		
TWDB Contract Reimbursement Accounting Number ('CAS')	Exhibit A - Contract SOW Task	Exhibit C - General Guidelines for Regional Water Plan Development	Regional Water Plan Chapter Number	Primary TAC Section	General Content
TBD	1	1	1	§357.30	Description of the Regional Water Planning Area
1	2A	2	2	§357.31	Projected Non-Municipal Water Demands
2	2B			§357.31	Projected Population and Municipal Water Demands
TBD	3	3	3	§357.32	Water Supply Analysis
TBD	4A	4	4	§357.33	Identification of Water Needs
TBD	4C			contract	Technical Memorandum
TBD	4B	5	5	§357.34	Identification of Potentially Feasible Water Management Strategies (WMSs)
TBD	5A			§357.34; §357.35	Evaluations of Potentially Feasible WMSs, Recommended WMSs/WMSPs, and Alternative WMSs/WMSPs
TBD	5B			§357.34	Conservation Recommendations [ <i>as an individual subchapter</i> ]
TBD	6	6	6	§357.40	Impacts of Regional Water Plan
				§357.41	Consistency with Protection of Water Resources, Agricultural Resources, and Natural Resources
TBD	7	7	7	§357.42	Drought Response Information, Activities, and Recommendations
TBD	8	8	8	§357.43	Policy Recommendations & Unique Sites
TBD	9	9	9	§357.44	Infrastructure Financing Analysis
3	10	10	10	§357.21; §357.50	Public Participation and Plan Adoption
TBD	11	11	11	§357.45	Implementation and Comparison to the Previous Regional Water Plan
TBD	12	12	N/A	§357.46	RWPG Prioritization of Recommended Water Management Strategy Projects (WMSP)

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## Agenda Item 7

Receive update from Consultant Team regarding the schedule and milestones for the development of the 2021 Region H Regional Water Plan.

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# Agenda Item 7

## 2021 RWP Schedule



# Agenda Item 7

## 2021 RWP Schedule

Date	Scheduled Events/Tasks
02/2017	RWPG Meeting
06/2017	Estimated release date for draft irrigation, manufacturing, and power projections
09/2017	Estimated due date to submit requests for sub-WUGs
11/2017	Estimated due date for adjustment requests to TWDB
02/2018	Estimated adoption date for projections
09/2018	DUE DATE: Technical Memorandum
03/2020	DUE DATE: Initially Prepared Plan
09/2020	DUE DATE: FINAL RWP

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## Agenda Item 8

Receive update from Consultant Team and Non-Population Demands Committee regarding TWDB non-municipal demand projection methodology.

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## Agenda Item 8 Non-Population Methodology



### Manufacturing

- Updated projection methodology in 2006 Plan
- Region H revisions in 2016 Plan
- 30% of Region H demand



### Steam-Electric Power

- Fresh look at methodology in 2011 Plan
- Region H revisions in 2016 Plan
- 4% of Region H demand



### Irrigation

- Updated projections in 2016 Plan
- Region H review and edits
- 14% of Region H demand

## Agenda Item 8 Non-Population Methodology

- Draft methodology from November 2016
  - Received comment in December
  - FNI provided comment on behalf of Region H
- Revised methodology presented in February 2017
  - Few recommendations from FNI incorporated



## Agenda Item 8 Non-Population Methodology



- 2020 demand derived from **average highest** 5-year water use (2010-2014)
- 2030 demands increased by projected employment
- Demands **held constant** 2030-2070
- Include reuse and brackish water where appropriate
- *May be revised based on new, closed, or planned facilities or other documentation supporting long-term projections*

## Agenda Item 8 Non-Population Methodology

- Constant demands after 2030?
  - Assumption based on increased efficiency
  - Appropriate for Region H sectors?
  - Impacts the potential for demonstrating conservation?
  - Further review by committee

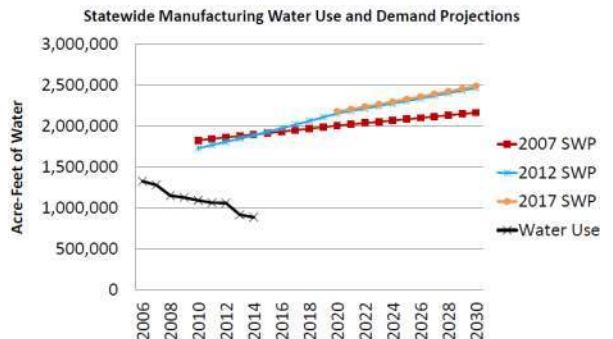
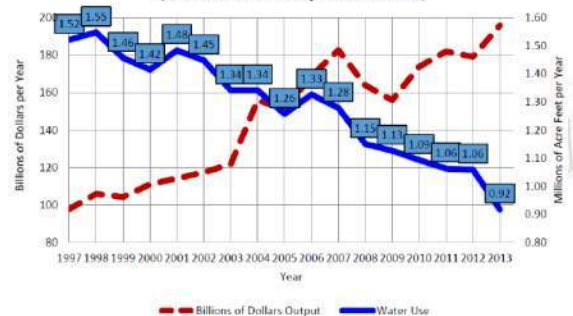
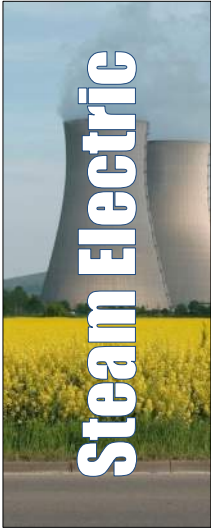


Figure 9. Texas Manufacturing Water Use vs. Dollar Output (2009 Chained Dollars Adjusted for Inflation)





## Agenda Item 8 Non-Population Methodology



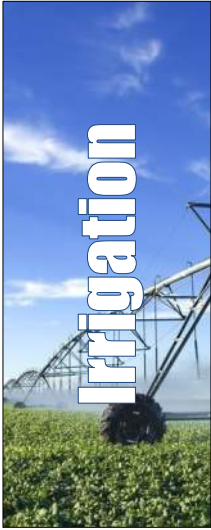
- Baseline derived from **average highest** 5-year water use (2010-2014) + water use of recent facilities – announced retirements
- ~~Increase projections over time~~ **based on fuel type 2020-2070 projections held constant**
- Include reuse and brackish water where appropriate
- *May be revised based on local information on facilities, documentation of long-term demand, dry-year demands occurring in 5-10 year window*

## Agenda Item 8 Non-Population Methodology

- Constant demands after 2030?
  - Assumption based on increased efficiency
  - Appropriate for Region H sectors?
  - Impacts the potential for demonstrating conservation?
  - Further review by committee



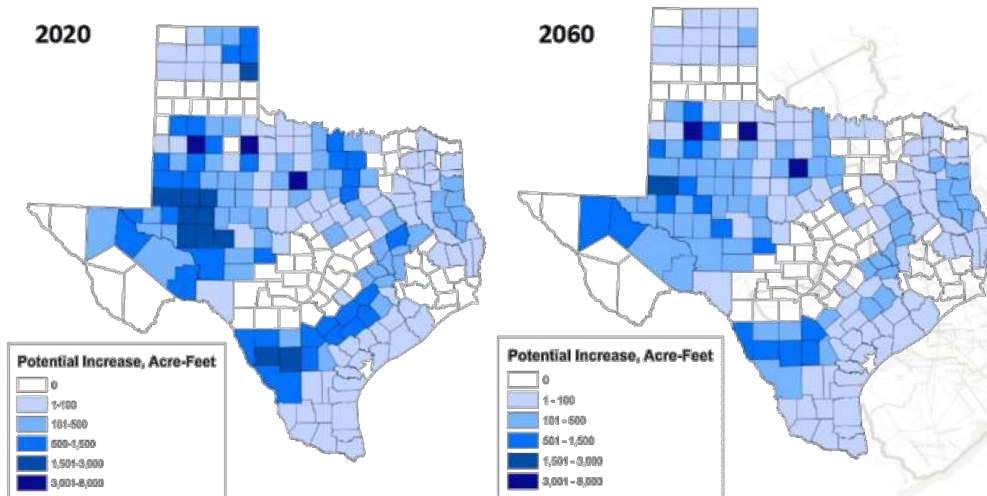
## Agenda Item 8 Non-Population Methodology



- Baseline derived from **average** 5-year water use (2010-2014)
- Demands generally remain constant 2020-2070
- Where projected groundwater demands exceed availability, **projections decline after 2030**
- Include reuse and brackish water where appropriate
- *May be revised based on use estimates, trends in groundwater use, local studies*

## Agenda Item 8 Non-Population Methodology

- Reuse and brackish groundwater in Mining water demands



## **Agenda Item 8**

### **Non-Population Methodology**

- Anticipate further review by committee
- DRAFT projections from TWDB 06/2017
- Recommendations from RWPG by 11/2017



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December 16, 2016

Mr. Kevin Kluge  
Manager, Water Use and Projections  
Texas Water Development Board  
P.O. Box 13231 – Capitol Station  
Austin, TX 78711

Re: Proposed Irrigation, Manufacturing, and Steam-Electric Power Projection Methodologies

Dear Mr. Kluge:

The Region H Non-Population Demands Committee, with assistance from Freese and Nichols, Inc. (FNI), has reviewed the TWDB's proposed projection methodologies for irrigation, manufacturing, and steam-electric power water demands. Based on preliminary analysis of the proposed methodologies, Region H offers the following comments:

#### **Irrigation Water Demand Projections**

- The proposed methodology uses a five-year average to compute baseline irrigation water demands. Region H acknowledges that this average is intended to account for both high- and low-demand conditions and that a concern regarding recent methodologies is that the use of high-production, dry-year irrigation demands has created an unreasonable level of demand to be met through firm-yield supplies, as required by the methodology for regional water planning. However, it should be recognized that reported irrigation water use is often constrained by supply. Therefore, even meeting the highest reported year of usage does not necessarily provide water for the entirety of the intended demand, should water supplies have been available that year. For this reason, Region H has opted to use the highest reported demand level over the historical period, recognizing that even those levels of water use may not be equivalent to maximum production. Region H is concerned that the use of average demands may under-represent the actual demand which may lead to a lack of consideration for future irrigation supplies. In turn, this lack of supply may constrain availability which may potentially suppress future demand projections and amplify this problem over time.
- The proposed methodology proposes an approach to constrain irrigation demand based on future groundwater availability. Although this is not expected to significantly impact demands within Region H, it does present a departure from precedent that demands are developed independently of supply. Although this approach may be appropriate in some regions of Texas, this may not be the best default approach for the state, overall. Region H recommends that demand not be constrained based on changes in groundwater availability by default, but that Regional Water Planning Groups may individually elect to limit demands based on this and other relevant information. Furthermore, regions may continue to declare excess irrigation demand as an unmet demand if they do not wish to reduce demand according to supply availability.

### **Manufacturing Water Demand Projections**

- The recommendation to develop baseline manufacturing water demand projections on average historical usage may not be appropriate in many cases. For instance, in Region H, demands can vary considerably based on market trends and climate factors. Although conservation is impacting industrial water use, estimated demands shown in the recommended five-year window are impacted to a much greater extent by this variability than any clear declining trend due to increased efficiency. The use of a five-year average represents a departure from the focus on dry-year demands in planning and may not account for peak demands that may occur when water supplies are stretched the thinnest.
- Reuse has continued to be an increasing component of demand for manufacturing in Region H. Since this water can be accounted for on both the supply and demand sides of the equation, Region H welcomes this revision to the overall methodology.
- Extrapolating future growth is a difficult challenge for manufacturing due to the limited data available and the dynamic nature of demands that can vary greatly with one major plant expansion or opening. Region H recognizes the proposed methodology of utilizing workforce projections by category as a reasonable approach to estimating this expansion. However, limiting growth to 2030 is a major concern in projecting long-term needs. A roughly 10-year window is not adequate for developing many water supplies that are required for supplying major manufacturing centers. This short window may limit the consideration of necessary water supplies and also may be seen as an oversight by industries that rely heavily on the availability of reliable water supplies to plan growth that will extend over many decades. Although conservation will, ultimately, attenuate growth trends in later decades, the proposed 2030 cap is a severe limitation that may not adequately ensure that appropriate supplies are set aside for manufacturing needs.
- The Travis County example included in the documentation, while valuable for understanding the proposed methodology, may not be representative of the impacts of differing methodologies on a large manufacturing sector. An additional example comparing the potential impact of the methodology change for a major manufacturing center such as Harris or Brazoria County would allow the reader to understand the significance of the change in methodology in an area with high manufacturing water use.

### **Steam-Electric Power Projection**

- The use of five-year average demands for steam-electric facilities, as with other demand categories, has the potential to understate dry-year demands that are the basis of long-range water supply planning and the firm-yield contracts these facilities require with water suppliers. Steam-electric power providers typically secure water supplies to meet anticipated water demand during a recurrence of drought-of-record conditions. Additional insight into long term water demands for future generation could be gained by coordinating with power generation entities to determine permitted and contracted supply volumes in the context of plant generating capacity, generation technology, and cooling system type. This coordination could also assist in consideration of anticipated application of technologies (such as combined cycle

Mr. Kevin Kluge  
December 16, 2016

combustion turbines and simple cycle combustion turbines) permitting less water use per unit of power generated than some existing facilities.

- The average percentage operating times used for calculating steam-electric water demand are generalized numbers based on statewide trends. Actual operation at individual facilities will vary considerably. Many facilities that contain more than one variety of generation type may rely on a different blend of operation for each type of system which, in turn, impacts the rate of water consumption.
- Although the methodology takes into account the statewide growth of electrical demand and that balance of fuel types, no consideration is given for how this is to be distributed throughout the state. Although consideration is given to the development and decommissioning of facilities over the upcoming decade, little location-specific information is applied to determine whether current trends will continue for the long-term. New plant facilities may not be located in the same counties as existing plants, and may instead be sited near transmission congestion points. In some cases, the generating capacity for an area may be limited by available water supply, necessitating development of capacity in other areas. Additionally, while future facilities, including those associated with repowering projects, may be located near existing generation infrastructure, some of these facilities are likely to replace rather than add to existing generation. It is advisable that, where possible, information be obtained from generating entities regarding anticipated facility life spans and long-range plans for expansion.
- Previous TWDB methodologies for steam-electric power considered the degree to which carbon capture is implemented under various scenarios and what impact this would have on water use. This does not appear to be considered in this methodology but may impact overall water demand.

Region H appreciates this opportunity to provide comment on the proposed projection methodology. Please feel free to contact me with any questions you may have regarding the aforementioned comments or any other assistance that we can provide.

Sincerely,

A handwritten signature in blue ink that reads "Philip Taucer". The signature is stylized and written in cursive.

Philip Taucer  
Project Manager

cc: Sarah Backhouse (TWDB)  
Temple McKinnon (TWDB)  
Mark Evans (Region H Chair)  
Pudge Willcox (Committee Chair)

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## Agenda Item 9

Receive update from Consultant Team and Non-Population Demands Committee regarding TWDB draft non-municipal demand projections for the 2021 Region H Regional Water Plan.

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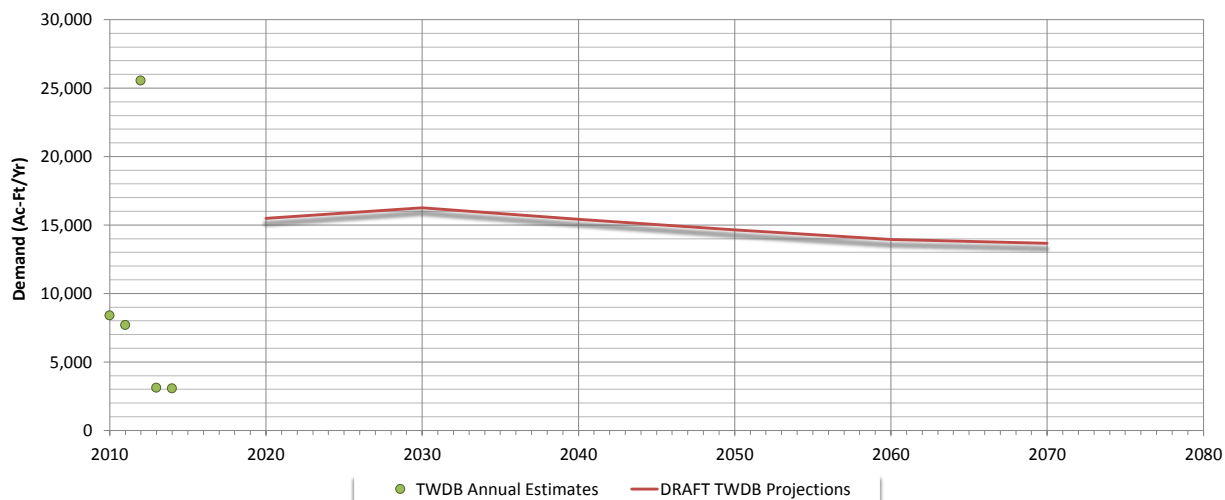
## Agenda Item 9 Non-Population Demands

- Irrigation, Livestock, Manufacturing, and Steam-Electric Power demands in progress
- Draft Mining demands released
- 2016 RWP projections retained
  - BEG study
  - Region H RWPG input



## Agenda Item 9 Non-Population Demands

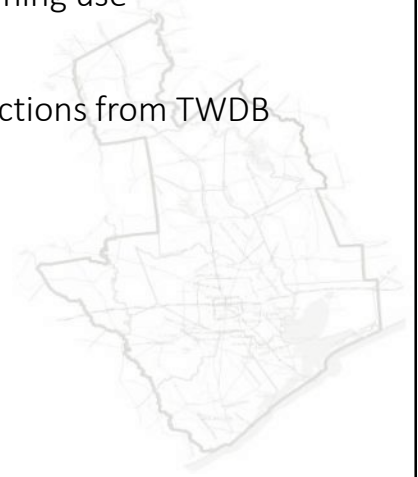
TWDB Draft Region H Mining Water Demand Projections



## **Agenda Item 9**

### **Non-Population Demands**

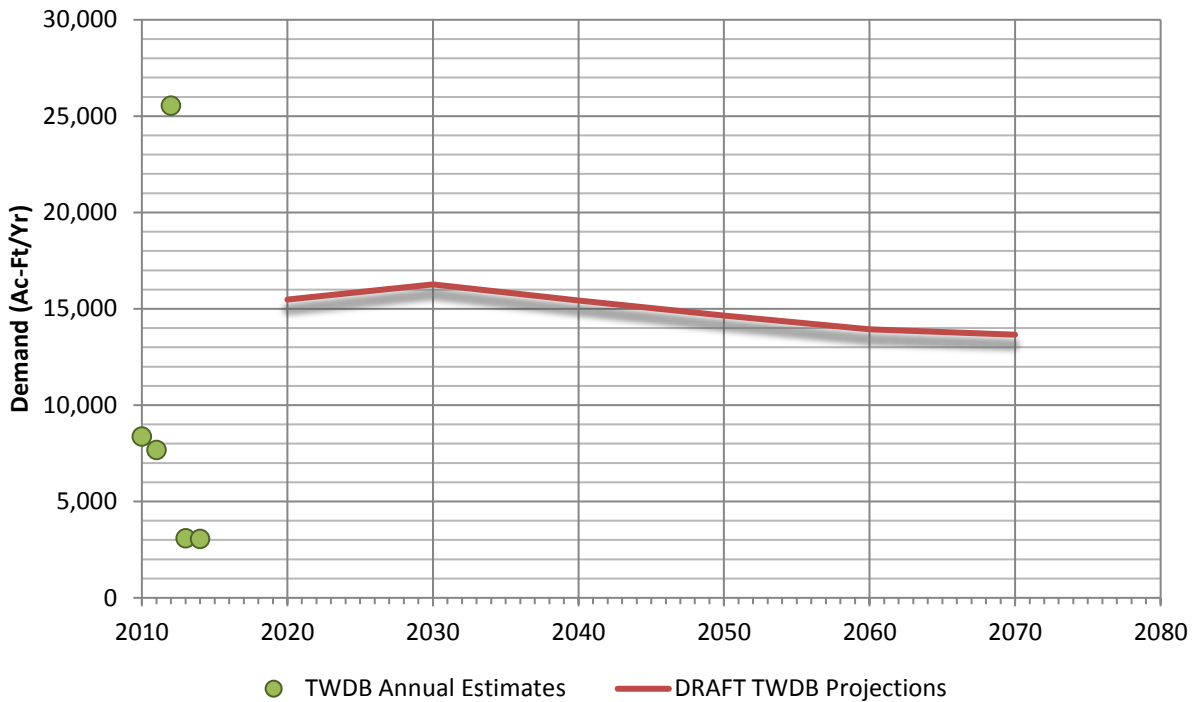
- By May
  - Historic reuse and brackish groundwater use for mining use
- June
  - Irrigation, Manufacturing, and Steam Electric projections from TWDB
- November 15<sup>th</sup>
  - Deadline for Regions to submit requested changes



TWDB Draft 2022 SWP  
Mining Water Demand  
Projections for Region H

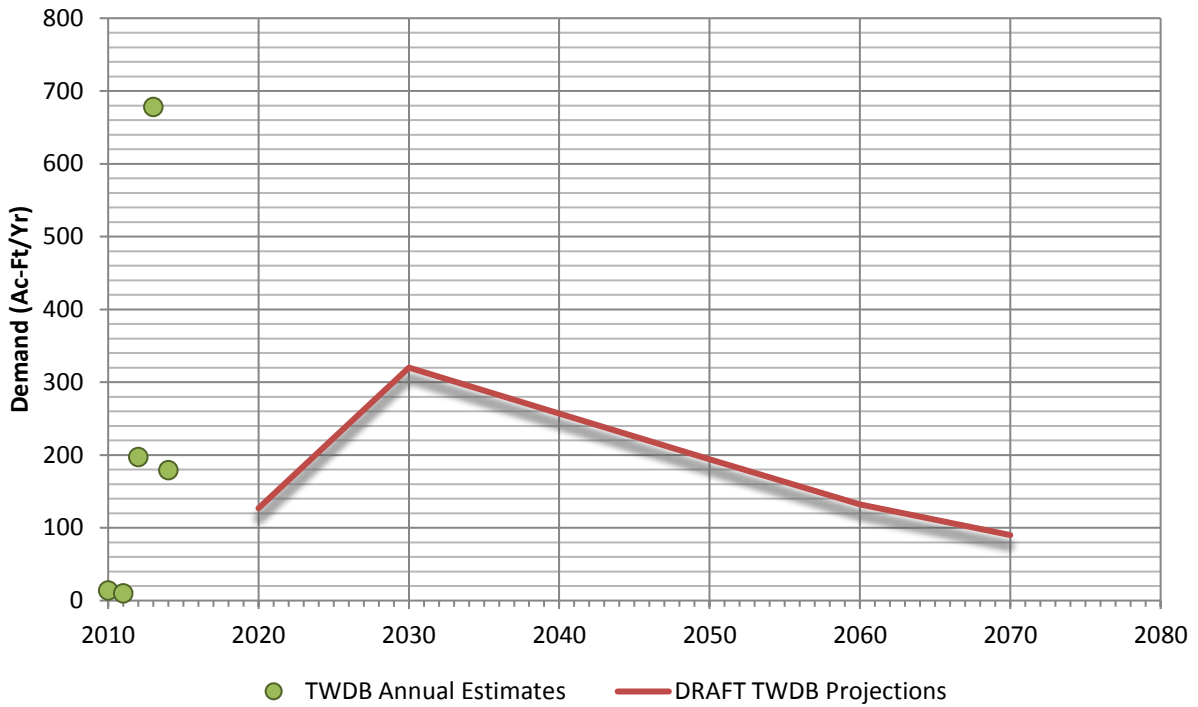
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## TWDB Draft Region H Mining Water Demand Projections

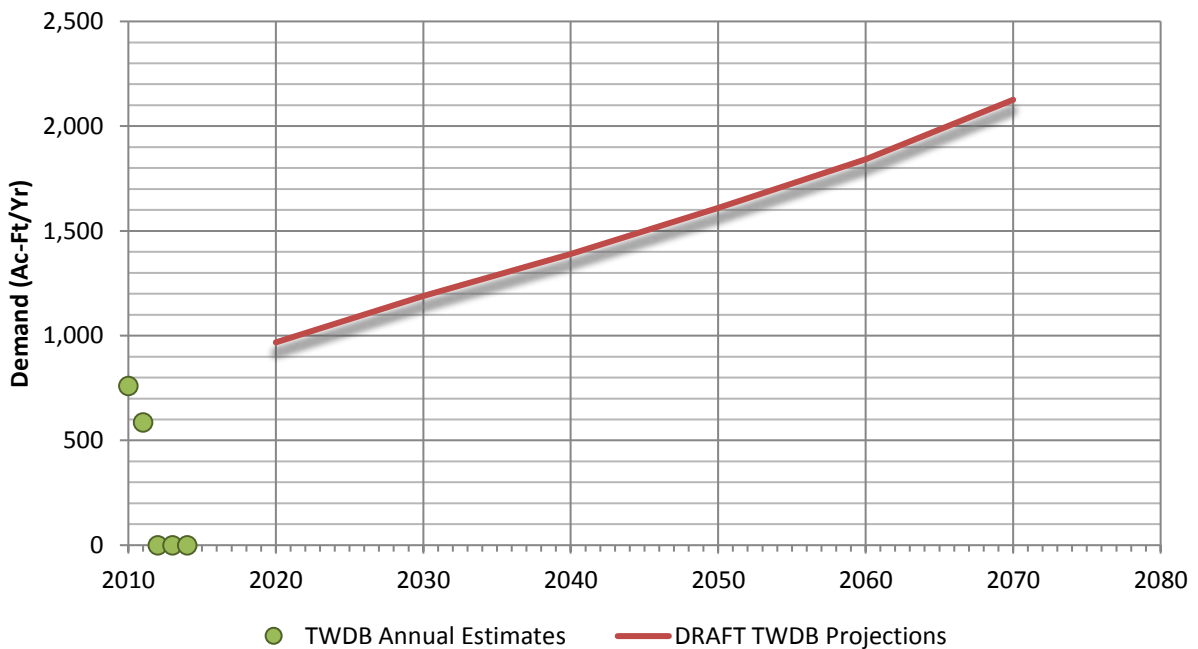


County	TWDB Draft Region H Mining Water Demand Projections (ac-ft)					
	2020	2030	2040	2050	2060	2070
Austin	127	320	257	194	132	90
Brazoria	968	1,189	1,389	1,609	1,842	2,126
Chambers	5,621	5,621	5,621	5,621	5,621	5,621
Fort Bend	72	75	57	42	28	19
Galveston	381	408	450	486	520	555
Harris	3,273	3,252	3,194	3,159	3,132	3,110
Leon	2,402	2,481	2,077	1,530	985	634
Liberty	437	457	446	468	496	539
Madison	597	972	754	538	323	194
Montgomery	1,453	1,363	1,077	921	806	728
Polk	124	98	72	46	21	9
San Jacinto	8	8	9	9	9	9
Trinity	5	5	5	5	5	5
Walker	11	11	11	11	11	11
Waller	7	7	7	7	7	7
<b>Total</b>	<b>15,486</b>	<b>16,267</b>	<b>15,426</b>	<b>14,646</b>	<b>13,938</b>	<b>13,657</b>

## Austin County Mining Water Demand Projections

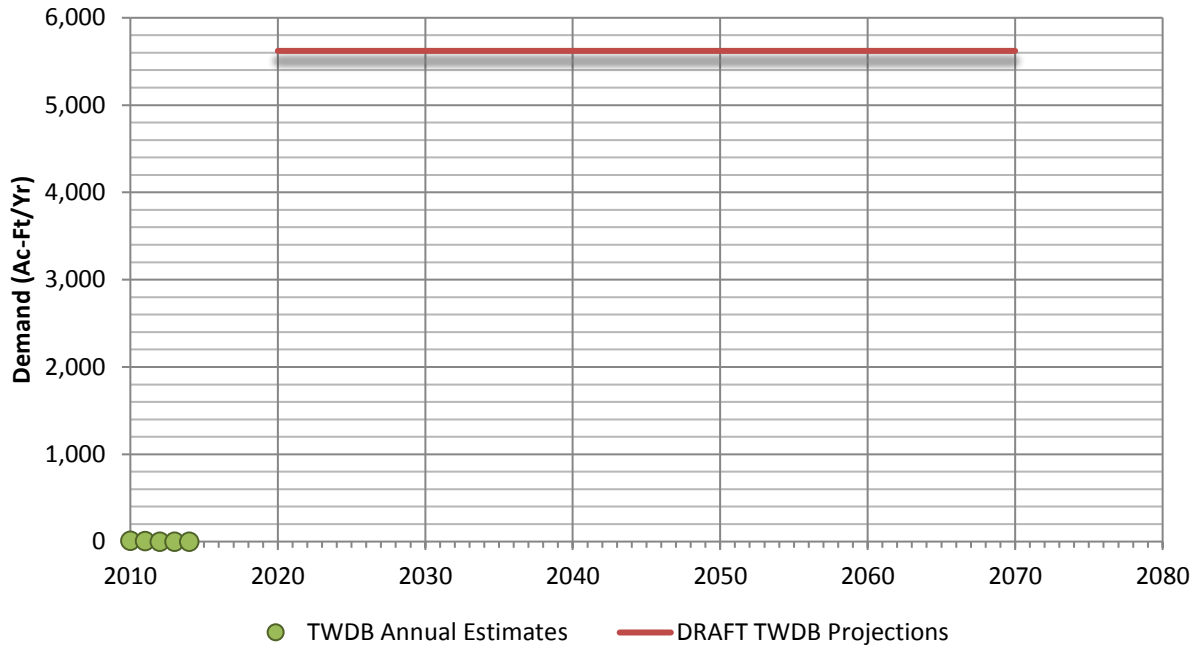


## Brazoria County Mining Water Demand Projections

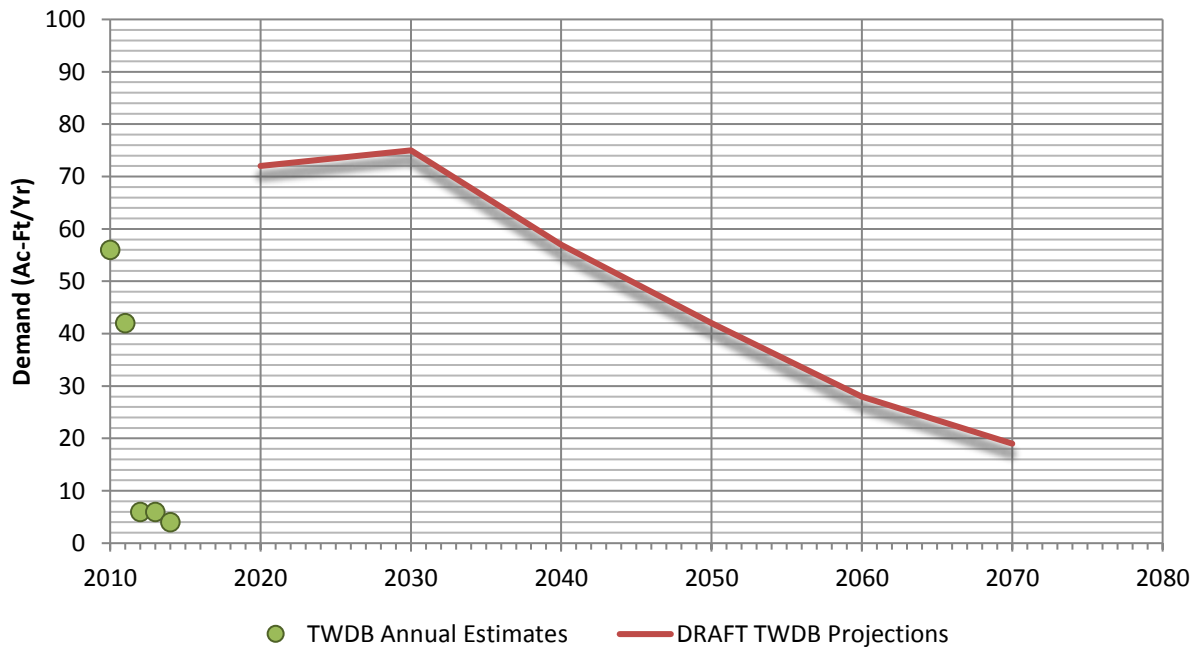




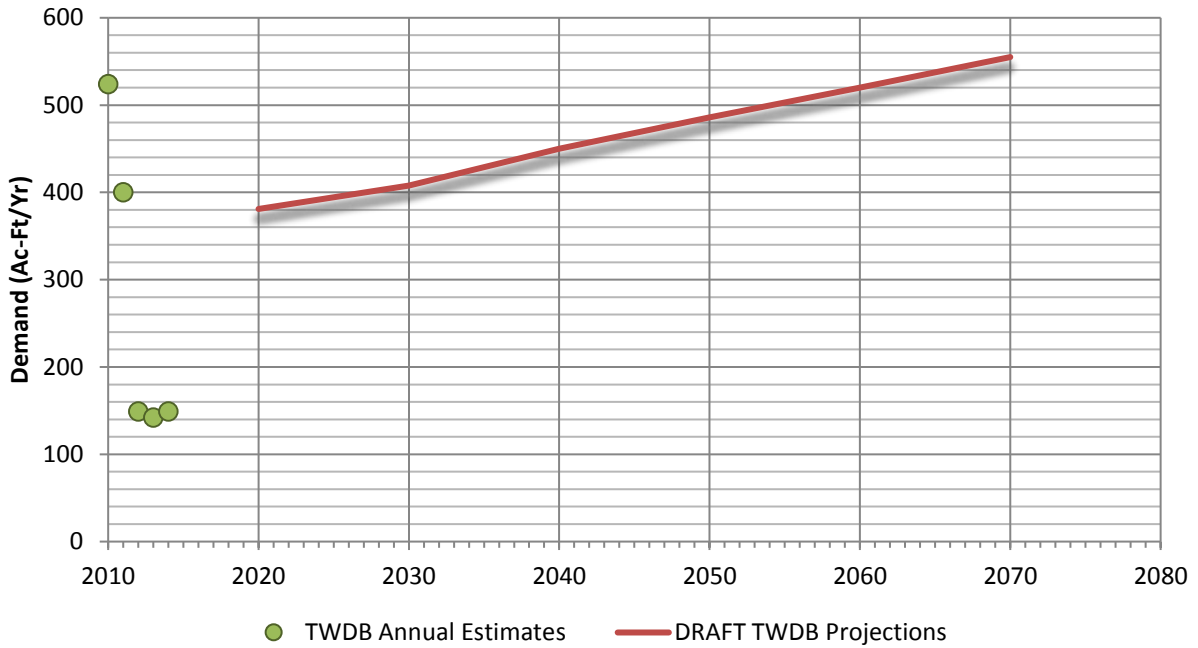
## Chambers County Mining Water Demand Projections



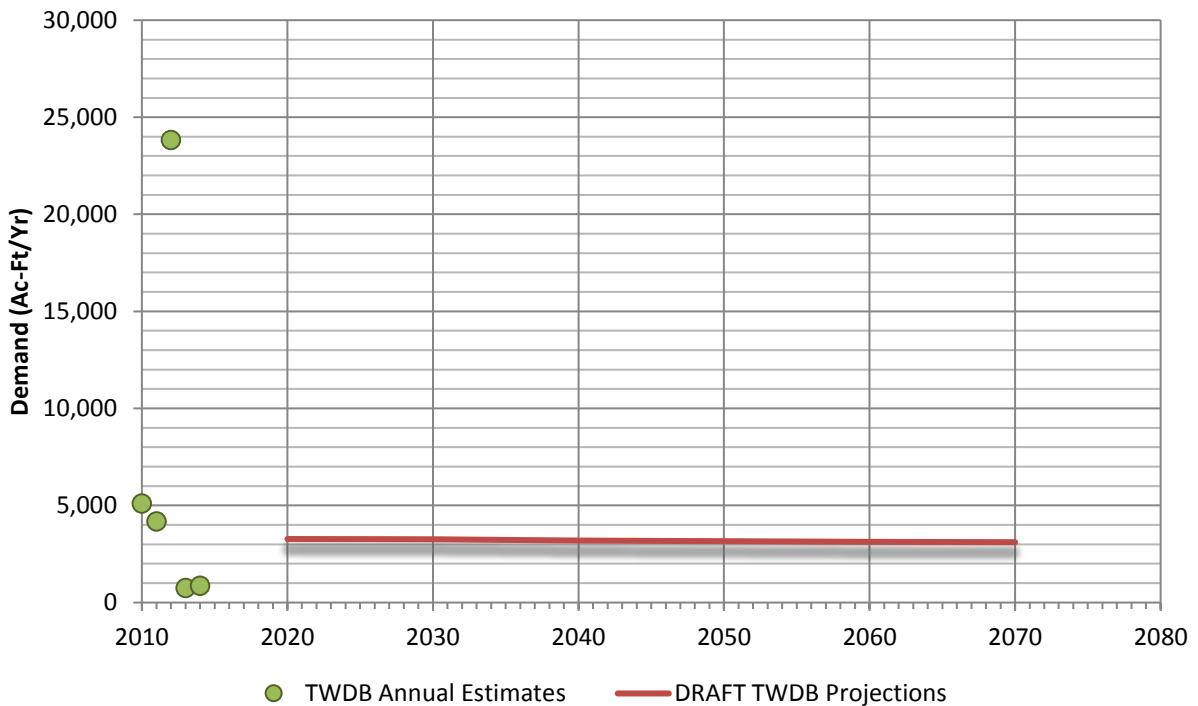
## Fort Bend County Mining Water Demand Projections



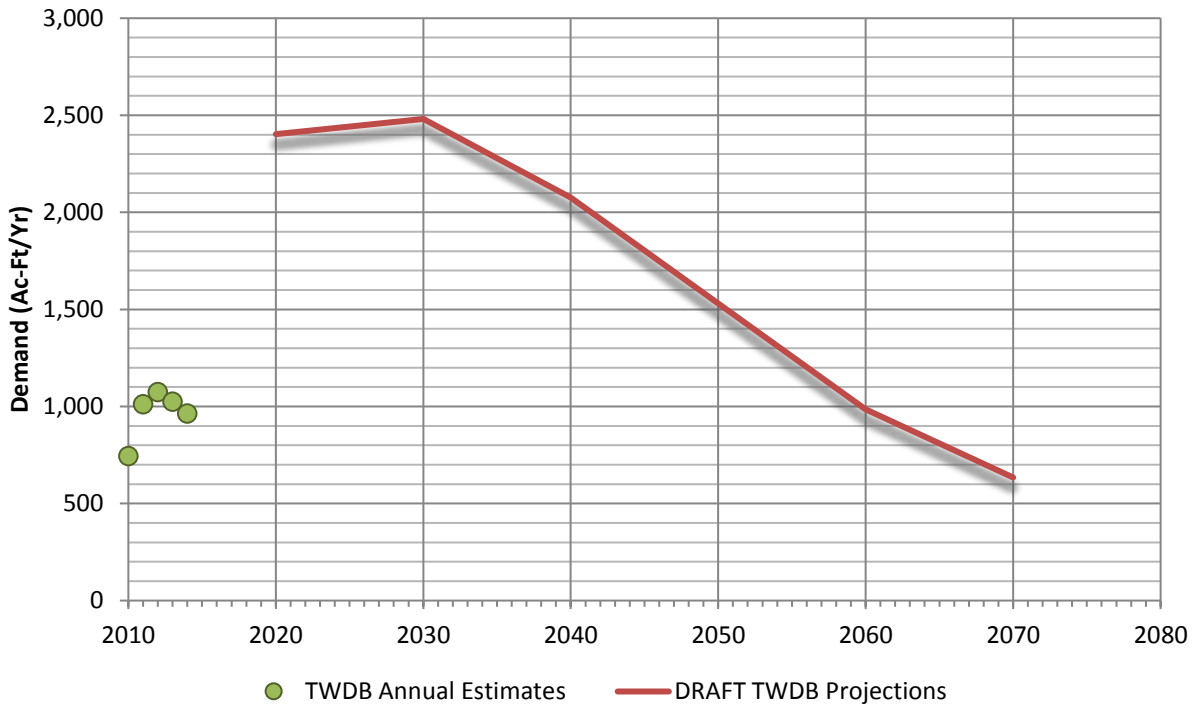
## Galveston County Mining Water Demand Projections



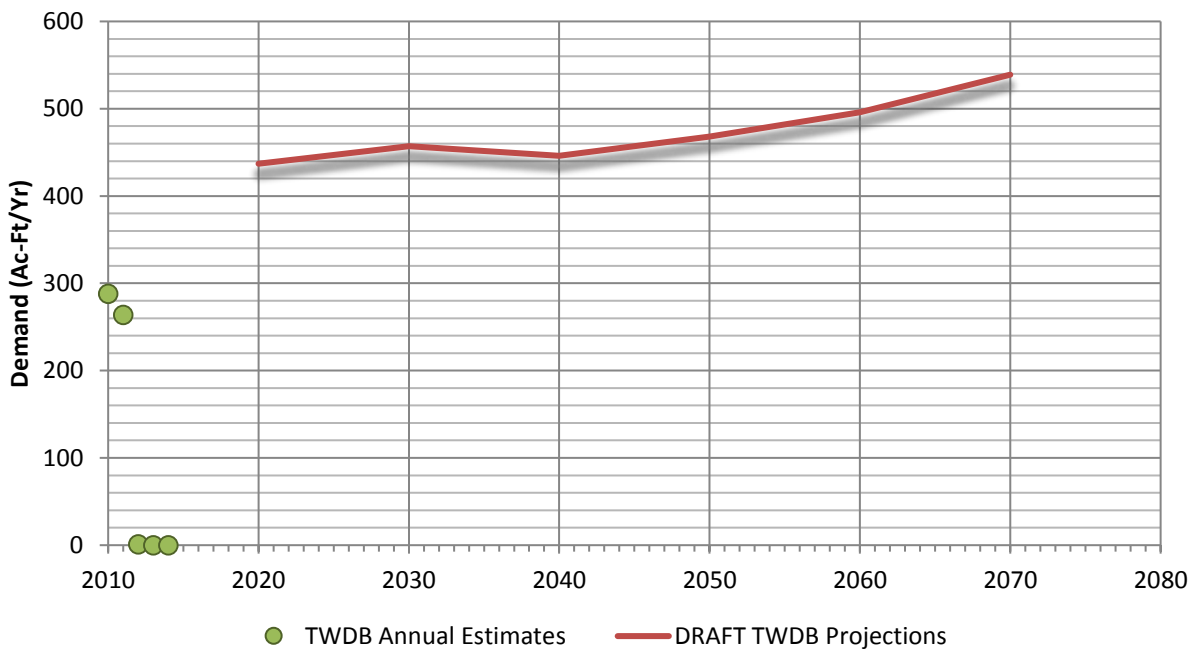
## Harris County Mining Water Demand Projections



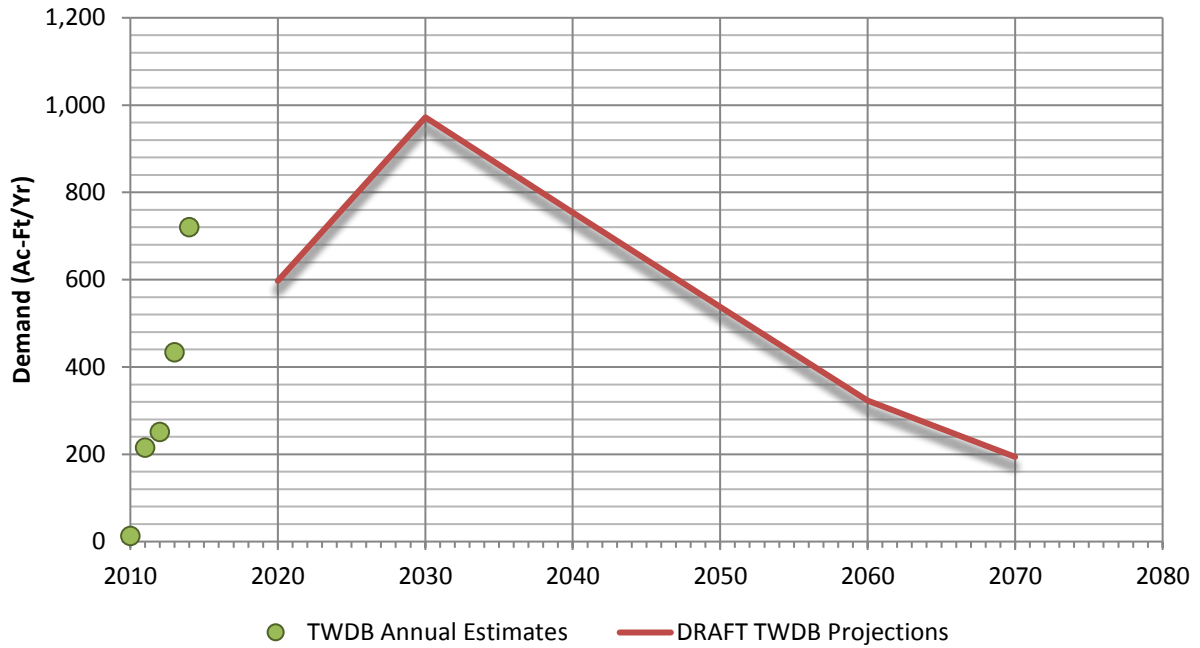
## Leon County Mining Water Demand Projections



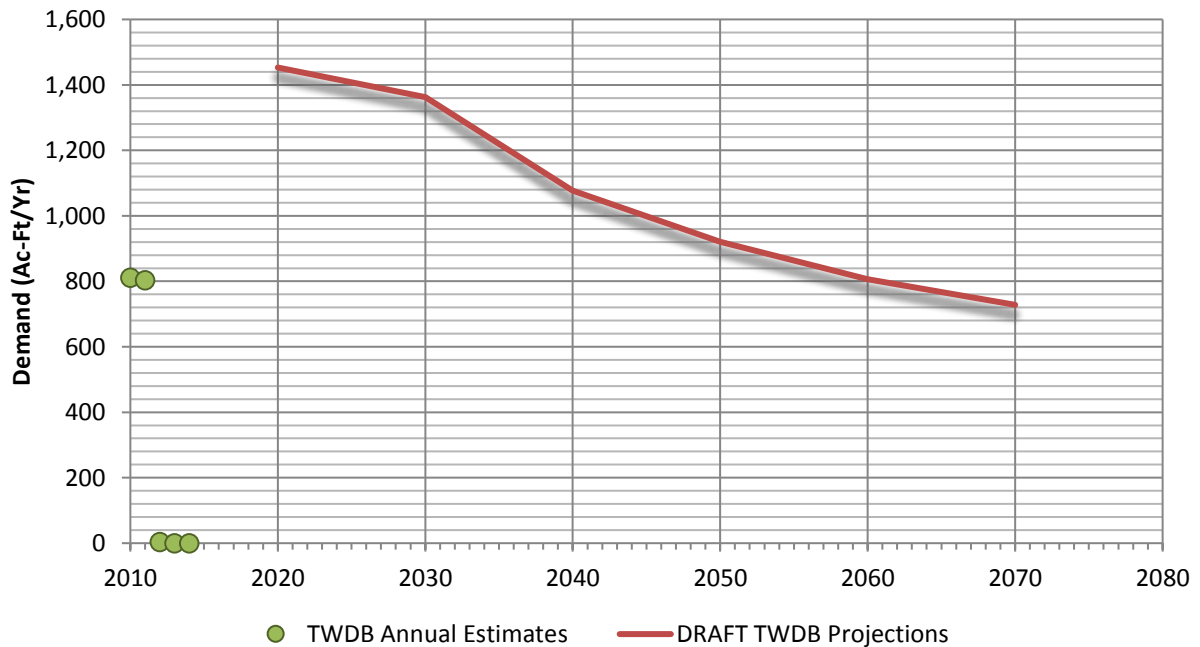
## Liberty County Mining Water Demand Projections



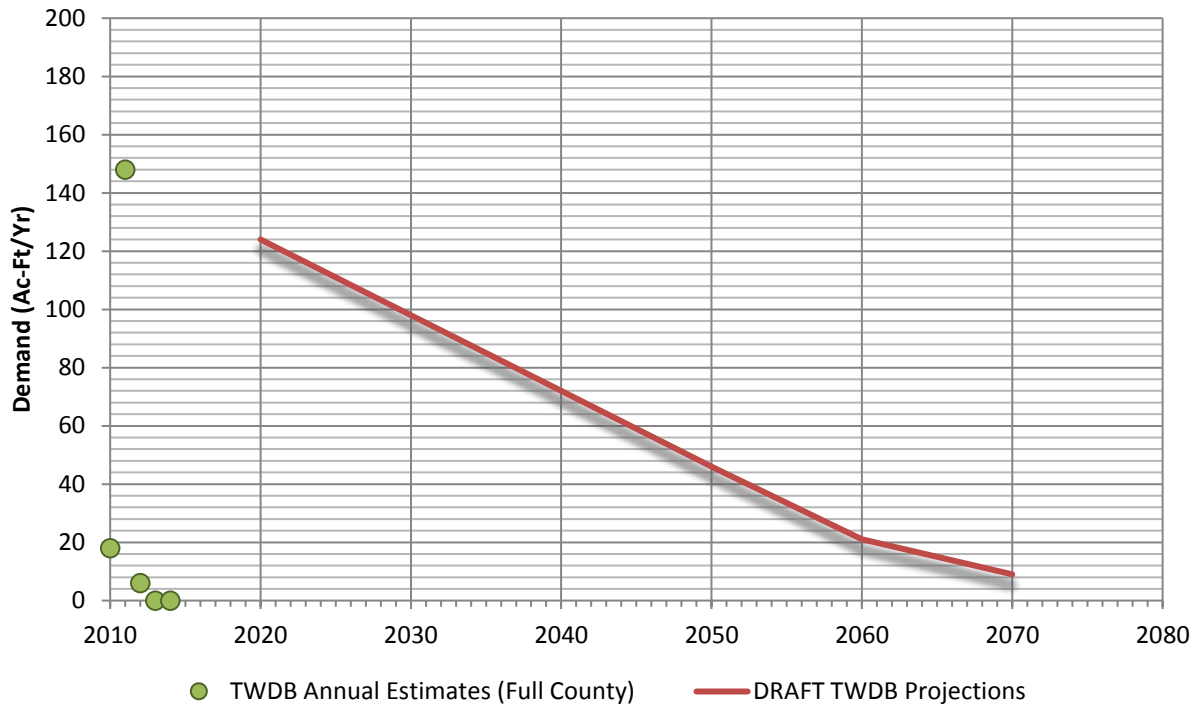
## Madison County Mining Water Demand Projections



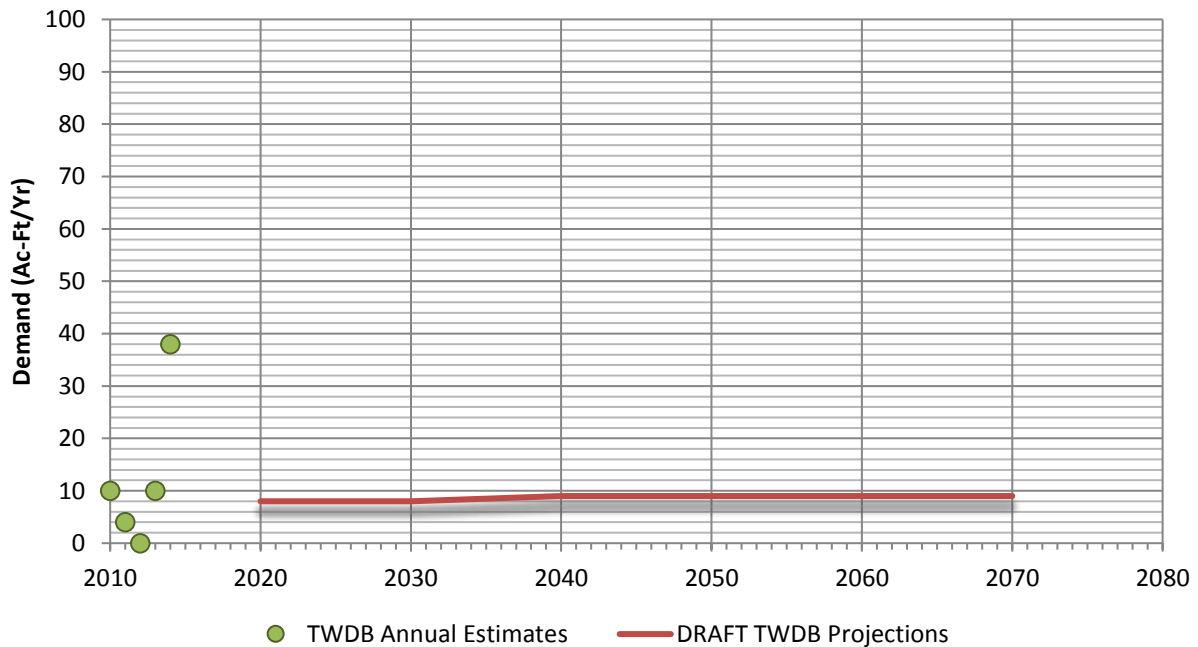
## Montgomery County Mining Water Demand Projections



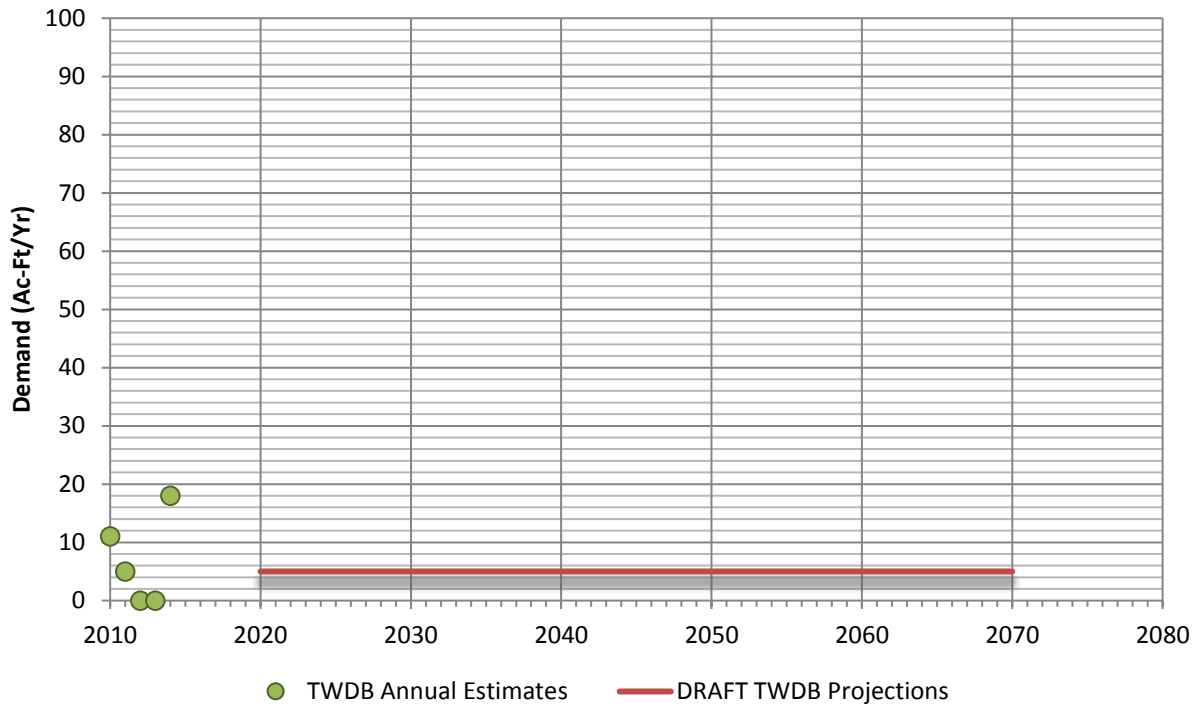
## Polk County Mining Water Demand Projections



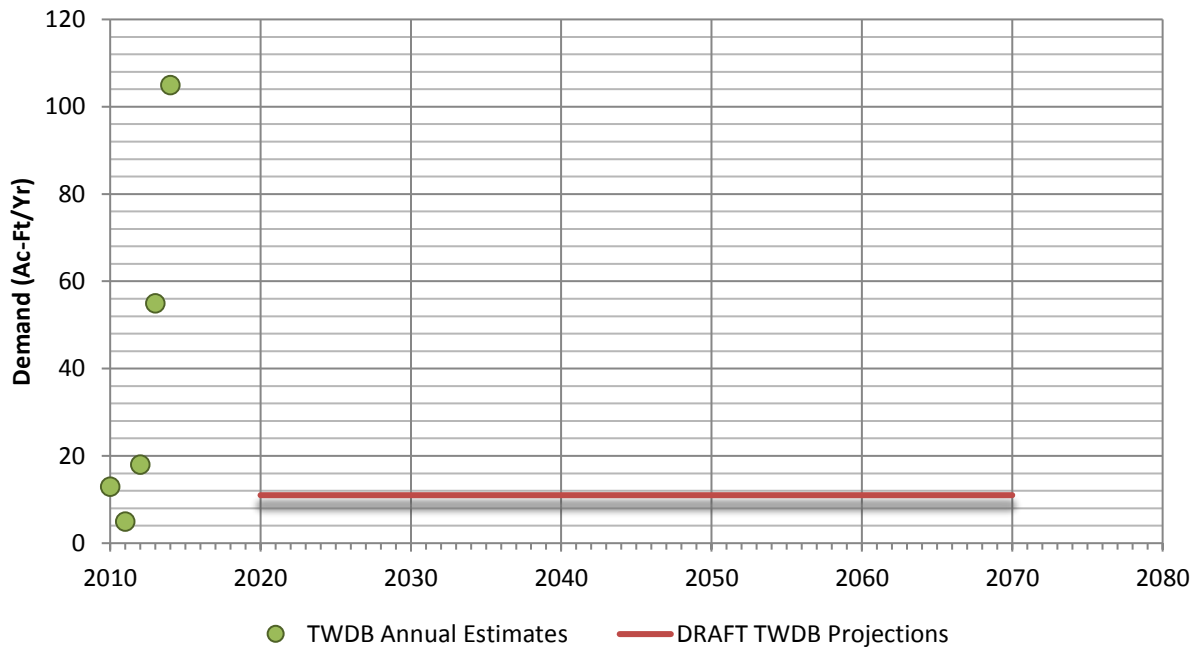
## San Jacinto County Mining Water Demand Projections



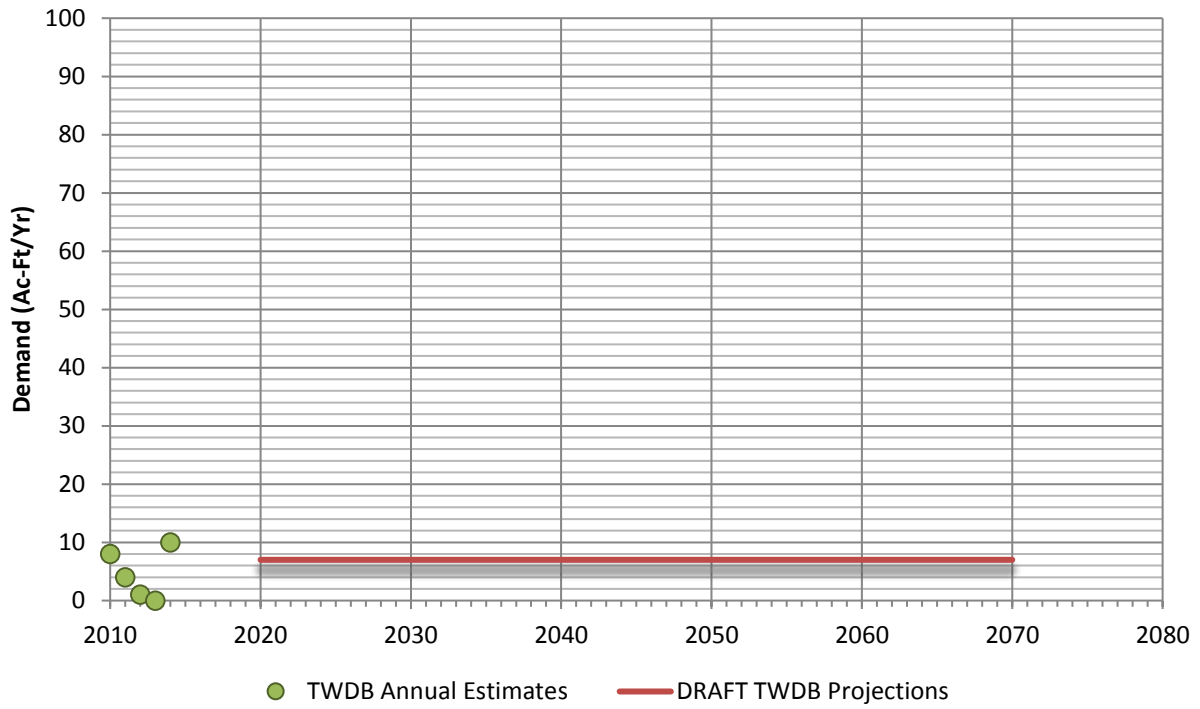
## Trinity County Mining Water Demand Projections



## Walker County Mining Water Demand Projections



# Waller County Mining Water Demand Projections



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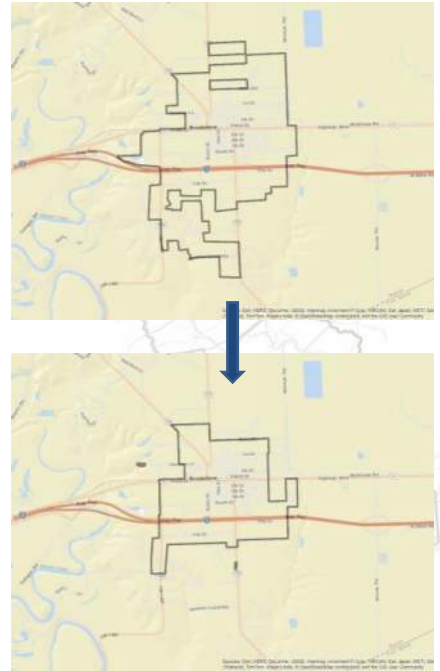
## Agenda Item 10

Receive update from Consultant Team and Population Demands Committee regarding TWDB draft municipal population and water demand projections for the 2021 Region H Regional Water Plan.

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## Agenda Item 10 Municipal Projections

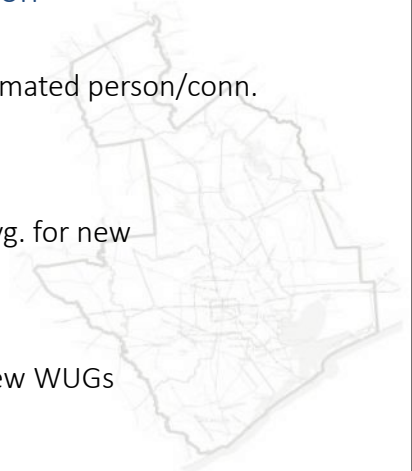
- Draft projections from TWDB
  - 206 legacy WUGs
  - 153 new WUGs
- New utility focus
  - Retaining 2017 SWP county populations
  - Minimal change to basin splits
  - Redistributing among WUGs



## Agenda Item 10 Municipal Projections

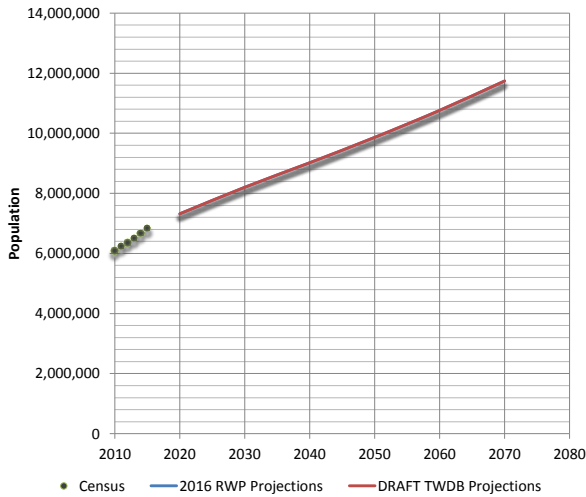


- Major undertaking
- Near term utility population
  - Direct reports
  - Connection count and estimated person/conn.
- Decadal growth rate
  - Retain for legacy WUG
  - County-Other or county avg. for new
- GPCD
  - Retain for legacy WUGs
  - 2011 or 2014 values for new WUGs

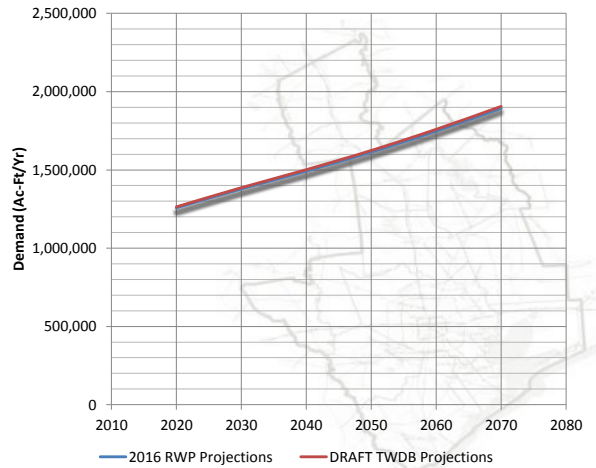


## Agenda Item 10 Municipal Projections

Total Region H Population Projections



Total Region H Municipal Water Demand Projections



## Agenda Item 10 Municipal Projections

- By May
  - Historic reuse and brackish groundwater use for municipal use
- By July
  - Historic per-capita water demand
- November 15<sup>th</sup>
  - Deadline for Regions to submit requested changes



Draft TWDB Population  
and Water Demand Projections:  
WUG Summary

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Region H Regional Water Planning Group  
**DRAFT** Water User Group (WUG) Population Projections  
 Austin County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
AUSTIN COUNTY WSC	Austin	Yes	1,698	1,967	2,257	2,597	2,969	3,382	280	248	278	312	355	405	461
BELLVILLE	Austin	No	4,062	4,366	4,694	5,079	5,500	5,969	257	1,126	1,191	1,264	1,359	1,470	1,594
COUNTY-OTHER, AUSTIN	Austin	No	17,336	20,824	24,603	29,059	33,966	39,430	345	2,054	2,385	2,760	3,227	3,762	4,363
SEALY	Austin	No	6,754	7,592	8,492	9,546	10,703	11,987	384	1,380	1,516	1,670	1,863	2,085	2,334
WALLIS	Austin	No	1,329	1,416	1,510	1,620	1,740	1,874	117	160	164	170	180	192	207
WEST END WSC	Austin	Yes	1,835	2,092	2,330	2,582	2,843	3,114	214	199	218	235	256	281	308
<b>Austin County Total</b>			<b>33,014</b>	<b>38,257</b>	<b>43,886</b>	<b>50,483</b>	<b>57,721</b>	<b>65,756</b>	<b>N/A</b>	<b>5,167</b>	<b>5,752</b>	<b>6,411</b>	<b>7,240</b>	<b>8,195</b>	<b>9,267</b>

Draft TWDB Population and Water Demand Projections:  
WUG Summary

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Brazoria County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
ALVIN	Brazoria	No	26,830	28,832	31,157	34,065	37,803	42,709	164	4,644	4,866	5,160	5,587	6,186	6,983
ANGLETON	Brazoria	No	18,628	18,769	18,900	19,037	19,180	19,333	101	1,919	1,849	1,793	1,768	1,774	1,788
BRAZORIA	Brazoria	No	3,121	3,212	3,285	3,347	3,400	3,448	200	318	313	308	308	311	316
BRAZORIA COUNTY MUD 2	Brazoria	No	4,051	4,051	4,053	4,056	4,059	4,062	373	1,666	1,658	1,655	1,653	1,653	1,654
BRAZORIA COUNTY MUD 21	Brazoria	No	4,371	4,560	4,915	5,270	5,625	5,858	137	646	669	719	769	819	853
BRAZORIA COUNTY MUD 25	Brazoria	Yes	4,255	4,863	5,484	6,143	6,873	7,667	96	417	459	502	554	618	689
BRAZORIA COUNTY MUD 29	Brazoria	Yes	4,439	7,241	9,784	9,784	9,784	9,784	100	456	716	940	927	924	923
BRAZORIA COUNTY MUD 3	Brazoria	No	4,231	4,238	4,306	4,373	4,440	4,530	145	655	646	648	654	662	676
BRAZORIA COUNTY MUD 31	Brazoria	Yes	1,553	1,770	2,093	2,382	2,648	2,813	243	409	459	537	608	675	717
BRAZORIA COUNTY MUD 6	Brazoria	No	5,881	5,881	5,901	5,922	5,944	5,972	198	1,268	1,258	1,257	1,258	1,260	1,266
CLUTE	Brazoria	No	11,508	11,900	12,328	12,782	13,267	13,787	124	1,484	1,483	1,494	1,526	1,579	1,640
COUNTY-OTHER, BRAZORIA	Brazoria	No	106,199	141,512	175,650	214,152	256,447	303,409	438	16,156	20,916	25,570	30,961	37,013	43,764
DANBURY	Brazoria	No	1,722	1,722	1,722	1,723	1,723	1,724	100	176	169	162	159	159	159
FREEMONT	Brazoria	No	13,246	14,051	14,782	15,466	16,127	16,785	327	1,471	1,492	1,515	1,556	1,617	1,682
HILLCREST VILLAGE	Brazoria	No	743	744	746	747	749	750	153	120	117	114	113	113	113
LAKE JACKSON	Brazoria	No	26,948	27,725	28,551	29,450	30,427	31,493	366	5,250	5,275	5,330	5,441	5,610	5,805
MANVEL	Brazoria	No	913	1,490	2,013	2,603	3,295	4,152	139	130	208	279	359	455	573
OYSTER CREEK	Brazoria	No	1,170	1,193	1,222	1,258	1,302	1,355	206	258	258	259	265	273	284
PEARLAND	Brazoria	No	102,874	109,713	118,462	127,921	138,280	148,098	135	14,765	15,514	16,611	17,850	19,252	20,607
QUADVEST	Brazoria	Yes	676	889	1,140	1,437	1,798	2,185	207	150	194	247	310	387	470
RICHWOOD	Brazoria	No	3,785	3,941	4,097	4,264	4,444	4,636	101	391	391	394	402	418	436
SEDONA LAKES MUD 1	Brazoria	Yes	1,148	1,312	1,481	1,658	1,853	2,068	144	174	194	214	238	265	296
SURFSIDE BEACH	Brazoria	Yes	723	826	826	826	826	826	258	202	228	226	225	224	224
SWEENEY	Brazoria	No	3,601	3,613	3,627	3,643	3,660	3,679	139	524	510	498	493	494	497
TDCI RAMSEY AREA	Brazoria	Yes	1,863	1,863	1,863	1,863	1,863	1,863	763	1,573	1,561	1,561	1,559	1,558	1,558
VARNER CREEK UD	Brazoria	No	1,509	1,512	1,514	1,516	1,517	1,518	135	210	204	198	198	198	198
WEST COLUMBIA	Brazoria	No	3,947	3,964	3,984	4,008	4,034	4,064	218	440	421	406	407	408	411
<b>Brazoria County Total</b>			<b>359,935</b>	<b>411,387</b>	<b>463,886</b>	<b>519,696</b>	<b>581,368</b>	<b>648,568</b>	<b>N/A</b>	<b>55,872</b>	<b>62,033</b>	<b>68,597</b>	<b>76,148</b>	<b>84,905</b>	<b>94,582</b>



Draft TWDB Population and Water Demand Projections:  
WUG Summary

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Chambers County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
ANAHUAC	Chambers	No	2,390	2,422	2,456	2,492	2,531	2,572	228	281	273	268	267	270	275
BAYTOWN	Chambers	No	4,857	5,746	6,664	7,653	8,711	9,822	129	651	745	842	952	1,081	1,218
CHAMBERS COUNTY MUD 1	Chambers	Yes	3,197	3,832	4,489	5,197	5,954	6,748	82	260	295	333	377	431	488
COUNTY-OTHER, CHAMBERS	Chambers	No	13,729	16,483	19,333	22,398	25,675	29,118	327	1,561	1,822	2,104	2,418	2,765	3,133
MONT BELVIEU	Chambers	No	6,194	7,920	9,704	11,627	13,682	15,841	794	2,699	3,428	4,186	5,007	5,889	6,817
TRINITY BAY CONSERVATION DISTRICT	Chambers	No	11,795	14,140	16,564	19,174	21,966	24,898	334	2,068	2,411	2,777	3,189	3,647	4,132
<b>Chambers County Total</b>			<b>42,162</b>	<b>50,543</b>	<b>59,210</b>	<b>68,541</b>	<b>78,519</b>	<b>88,999</b>	<b>N/A</b>	<b>7,520</b>	<b>8,974</b>	<b>10,510</b>	<b>12,210</b>	<b>14,083</b>	<b>16,063</b>

Draft TWDB Population and Water Demand Projections:  
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Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Fort Bend County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
BLUE RIDGE WEST MUD	Fort Bend	Yes	9,077	9,077	9,077	9,077	9,077	9,077	256	1,229	1,209	1,199	1,194	1,192	1,191
COUNTY-OTHER, FORT BEND	Fort Bend	No	93,038	135,253	171,261	248,414	348,457	472,899	552	13,045	18,645	23,454	33,895	47,490	64,397
FIRST COLONY MUD 9	Fort Bend	Yes	10,032	12,282	12,282	12,282	12,282	12,282	330	1,773	2,144	2,131	2,124	2,121	2,120
FORT BEND COUNTY FWSD 1	Fort Bend	Yes	1,184	1,470	1,691	1,909	2,127	2,357	69	82	99	114	128	143	158
FORT BEND COUNTY FWSD 2	Fort Bend	Yes	2,515	3,122	3,590	4,054	4,516	5,004	87	226	273	310	348	387	428
FORT BEND COUNTY MUD 111	Fort Bend	Yes	3,405	3,405	3,405	3,405	3,405	3,405	282	1,048	1,041	1,037	1,035	1,034	1,034
FORT BEND COUNTY MUD 112	Fort Bend	Yes	3,759	3,759	3,759	3,759	3,759	3,759	225	917	909	905	903	902	902
FORT BEND COUNTY MUD 115	Fort Bend	Yes	1,890	2,099	2,099	2,099	2,099	2,099	864	898	993	991	990	989	989
FORT BEND COUNTY MUD 116	Fort Bend	No	3,965	4,500	5,287	5,902	6,518	7,132	212	917	1,035	1,213	1,352	1,491	1,630
FORT BEND COUNTY MUD 121	Fort Bend	No	3,227	3,503	4,143	4,798	5,454	6,110	115	398	428	504	582	659	738
FORT BEND COUNTY MUD 128	Fort Bend	Yes	4,302	4,302	4,302	4,302	4,302	4,302	209	973	964	959	957	956	956
FORT BEND COUNTY MUD 129	Fort Bend	No	3,230	4,637	5,945	7,036	7,798	7,803	226	800	1,141	1,459	1,725	1,910	1,911
FORT BEND COUNTY MUD 140	Fort Bend	Yes	24,562	24,562	24,562	24,562	24,562	24,562	157	4,128	4,074	4,048	4,035	4,029	4,027
FORT BEND COUNTY MUD 149	Fort Bend	Yes	1,969	2,447	2,814	2,814	2,814	2,814	98	199	242	276	274	274	273
FORT BEND COUNTY MUD 152	Fort Bend	Yes	769	955	1,098	1,098	1,098	1,098	184	152	187	214	213	213	213
FORT BEND COUNTY MUD 155	Fort Bend	Yes	2,366	2,938	3,379	3,379	3,379	3,379	147	369	452	516	514	514	513
FORT BEND COUNTY MUD 158	Fort Bend	Yes	1,242	1,542	1,773	1,773	1,773	1,773	174	233	285	326	325	325	325
FORT BEND COUNTY MUD 162	Fort Bend	Yes	2,740	3,402	3,912	3,912	3,912	3,912	94	266	323	367	365	364	363
FORT BEND COUNTY MUD 187	Fort Bend	Yes	3,160	3,632	3,632	3,632	3,632	3,632	71	227	253	249	247	246	246
FORT BEND COUNTY MUD 23	Fort Bend	Yes	11,709	12,481	12,902	13,323	13,744	14,164	106	1,319	1,389	1,429	1,470	1,512	1,558
FORT BEND COUNTY MUD 24	Fort Bend	Yes	1,447	1,797	2,066	2,066	2,066	2,066	97	146	177	202	201	200	200
FORT BEND COUNTY MUD 25	Fort Bend	No	11,954	12,068	12,254	12,474	12,701	12,931	244	1,539	1,522	1,523	1,536	1,559	1,587
FORT BEND COUNTY MUD 26	Fort Bend	Yes	5,276	6,460	7,626	7,626	7,626	7,626	111	616	740	865	861	859	859
FORT BEND COUNTY MUD 42	Fort Bend	Yes	4,530	5,547	5,547	5,547	5,547	5,547	178	865	1,047	1,041	1,038	1,036	1,036
FORT BEND COUNTY MUD 46	Fort Bend	Yes	2,207	2,704	3,191	3,191	3,191	3,191	478	572	695	817	815	815	814
FORT BEND COUNTY MUD 47	Fort Bend	Yes	1,417	1,735	2,048	2,048	2,048	2,048	107	158	190	222	220	220	220
FORT BEND COUNTY MUD 48	Fort Bend	Yes	3,493	3,493	3,493	3,493	3,493	3,493	118	434	426	423	421	420	420
FORT BEND COUNTY MUD 49	Fort Bend	Yes	1,354	1,657	1,657	1,657	1,657	1,657	145	208	251	250	249	248	248
FORT BEND COUNTY MUD 5	Fort Bend	Yes	3,333	4,084	4,084	4,084	4,084	4,084	77	262	312	307	305	304	304
FORT BEND COUNTY MUD 67	Fort Bend	Yes	4,827	5,993	5,993	5,993	5,993	5,993	199	1,039	1,276	1,270	1,267	1,265	1,265
FORT BEND COUNTY MUD 68	Fort Bend	Yes	4,516	4,516	4,516	4,516	4,516	4,516	175	846	836	832	829	828	828
FORT BEND COUNTY MUD 69	Fort Bend	Yes	1,774	1,774	1,774	1,774	1,774	1,774	274	530	526	524	523	523	523
FORT BEND COUNTY MUD 81	Fort Bend	Yes	2,509	2,671	2,889	3,108	3,326	3,545	542	1,504	1,595	1,722	1,851	1,980	2,110
FORT BEND COUNTY WGD 2	Fort Bend	Yes	43,612	54,152	62,271	70,312	78,316	86,791	364	8,518	10,459	11,960	13,466	14,980	16,595
FORT BEND COUNTY WGD 3	Fort Bend	Yes	912	1,132	1,132	1,132	1,132	1,132	1,066	537	664	663	662	662	662
FULSHEAR	Fort Bend	No	12,106	13,755	14,932	15,925	16,784	17,543	230	1,377	1,549	1,678	1,788	1,883	1,966
GREATWOOD CRU	Fort Bend	No	40,629	43,066	45,030	46,771	48,190	49,267	380	8,231	8,537	8,786	9,051	9,309	9,514
HOUSTON CRU	Fort Bend	No	6,914	16,062	16,150	16,219	16,273	16,316	226	1,665	3,801	3,799	3,803	3,813	3,822
KATY	Fort Bend	Yes	573	711	817	923	1,028	1,139	292	183	225	258	291	324	358
MEADOWCREEK MUD	Fort Bend	Yes	2,882	3,529	3,529	3,529	3,529	3,529	129	394	474	471	469	468	468
MEADOWS PLACE	Fort Bend	No	4,707	4,896	4,896	4,994	5,093	5,195	314	779	771	776	773	786	802
MISSOURI CITY	Fort Bend	No	2,741	3,403	3,913	4,419	4,921	5,454	149	428	518	586	657	730	809
NEEDVILLE	Fort Bend	No	2,847	2,885	2,933	3,007	3,117	3,280	206	301	293	288	289	299	314
NORTH FORT BEND WATER AUTHORITY CRU	Fort Bend	No	273,589	379,043	461,543	509,388	534,890	547,904	618	61,050	83,830	101,786	112,178	117,716	120,549
PALMER PLANTATION MUD 1	Fort Bend	Yes	2,179	2,667	2,667	2,667	2,667	2,667	219	517	627	624	622	622	621

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Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Fort Bend County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)					
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060
PALMER PLANTATION MUD 2	Fort Bend	Yes	2,956	2,956	2,956	2,956	2,956	121	377	370	367	366	365	365
PEARLAND	Fort Bend	No	3,686	3,972	4,947	5,922	8,038	135	529	562	694	826	961	1,118
PECAN GROVE MUD 1	Fort Bend	No	13,078	13,107	13,159	13,203	13,275	332	2,291	2,230	2,183	2,183	2,184	2,190
PLANTATION MUD	Fort Bend	No	4,084	4,084	4,084	4,084	4,084	103	430	413	398	390	388	388
QUADWEST	Fort Bend	Yes	1,666	2,191	2,811	3,543	5,386	207	369	478	608	763	953	1,158
QUAIL VALLEY UD	Fort Bend	Yes	14,534	17,795	21,007	21,007	21,007	156	2,421	2,925	3,430	3,419	3,414	3,412
RICHMOND	Fort Bend	No	12,916	13,426	14,072	14,973	16,762	155	2,107	2,131	2,185	2,298	2,430	2,565
ROSENBERG	Fort Bend	No	40,384	42,560	44,928	47,378	53,654	228	4,707	4,822	4,989	5,204	5,502	5,872
ROYAL VALLEY UTILITIES	Fort Bend	Yes	2,046	2,539	2,919	2,919	2,919	287	641	789	905	903	902	902
SIENNA PLANTATION CRU	Fort Bend	No	21,743	27,809	37,852	47,894	67,204	436	5,179	6,582	8,935	11,289	13,644	15,821
SUGAR LAND	Fort Bend	No	100,817	109,789	116,761	123,583	133,226	738	26,919	28,995	30,626	32,292	33,744	34,764
TDCJ JESTER UNITS	Fort Bend	Yes	3,675	3,675	3,675	3,675	3,675	666	1,343	1,335	1,331	1,329	1,328	1,328
THUNDERBIRD UD	Fort Bend	Yes	6,681	8,180	8,180	8,180	8,180	170	1,215	1,470	1,461	1,457	1,455	1,454
WEST HARRIS COUNTY REGIONAL WATER AUTHORITY CRU	Fort Bend	No	10,966	11,238	11,293	11,356	11,448	123	1,403	1,411	1,401	1,399	1,407	1,419
<b>Fort Bend County Total</b>			<b>881,966</b>	<b>1,095,123</b>	<b>1,259,307</b>	<b>1,421,933</b>	<b>1,583,782</b>	<b>1,755,164</b>	<b>173,313</b>	<b>213,446</b>	<b>244,369</b>	<b>272,445</b>	<b>298,767</b>	<b>325,119</b>

Draft TWDB Population and Water Demand Projections:  
WUG Summary

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Galveston County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
BACLIFF MUD	Galveston	No	7,310	7,416	7,524	7,633	7,742	7,850	75	539	515	506	513	520	528
BAYVIEW MUD	Galveston	Yes	1,727	1,896	2,030	2,149	2,247	2,338	85	146	153	158	165	172	179
BOLIVAR PENINSULA SUD	Galveston	No	2,943	3,480	4,118	4,875	5,771	6,835	68	198	234	277	328	388	459
COUNTY-OTHER, GALVESTON	Galveston	No	20,073	21,847	23,765	25,605	27,420	29,186	240	2,493	2,626	2,795	2,978	3,180	3,383
FRIENDSWOOD	Galveston	No	27,216	29,113	31,273	33,627	36,210	39,062	166	4,792	5,010	5,299	5,653	6,075	6,550
GALVESTON COUNTY FWSD 6	Galveston	No	51,260	54,643	57,846	60,955	63,941	67,085	300	16,622	17,422	18,284	19,244	20,164	21,151
GALVESTON COUNTY MUD 12	Galveston	Yes	1,800	1,813	1,828	1,841	1,847	1,855	189	361	356	355	355	356	357
GALVESTON COUNTY WCID 1	Galveston	Yes	2,273	2,278	2,282	2,285	2,288	2,290	116	270	261	256	254	254	254
GALVESTON COUNTY WCID 12	Galveston	Yes	20,448	21,459	22,608	23,737	24,858	25,977	109	2,272	2,294	2,362	2,453	2,562	2,675
GALVESTON COUNTY WCID 8	Galveston	Yes	8,229	10,263	10,562	10,801	10,996	11,159	213	1,873	2,293	2,334	2,375	2,414	2,449
GALVESTON COUNTY WCID 8	Galveston	Yes	5,718	5,888	6,098	6,313	6,529	6,750	104	605	598	605	619	638	659
HITCHCOCK	Galveston	No	8,451	10,036	11,048	11,839	12,467	12,971	109	931	1,059	1,136	1,202	1,262	1,312
JAMAICA BEACH	Galveston	No	987	996	1,005	1,015	1,028	1,042	243	259	258	258	259	262	265
LA MARQUE	Galveston	No	21,572	23,566	24,058	24,467	24,813	25,115	151	3,364	3,581	3,594	3,621	3,666	3,710
LEAGUE CITY	Galveston	No	106,553	120,036	130,484	139,048	143,972	147,342	127	14,165	15,619	16,772	17,756	18,349	18,770
SAN LEON MUD	Galveston	No	5,627	6,153	6,560	6,966	7,371	7,778	63	378	414	441	468	495	523
TEXAS CITY	Galveston	No	51,383	56,490	60,731	64,391	67,626	70,558	133	7,078	7,524	7,898	8,272	8,667	9,038
<b>Galveston County Total</b>			<b>343,570</b>	<b>377,373</b>	<b>403,820</b>	<b>427,547</b>	<b>447,126</b>	<b>465,193</b>	<b>N/A</b>	<b>56,346</b>	<b>60,217</b>	<b>63,330</b>	<b>66,515</b>	<b>69,424</b>	<b>72,262</b>

Draft TWDB Population and Water Demand Projections:  
WUG Summary

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Harris County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
BAKER ROAD MUD	Harris	Yes	1,108	1,190	1,190	1,190	1,190	1,190	233	278	295	292	291	291	291
BAYBROOK MUD 1	Harris	Yes	870	911	1,019	1,099	1,171	1,245	264	249	258	286	308	327	348
BAYTOWN	Harris	No	70,697	71,782	73,008	74,252	75,513	76,790	258	9,479	9,313	9,221	9,241	9,371	9,526
BELLAIRE	Harris	No	18,921	20,564	22,361	24,315	26,448	28,776	207	4,200	4,467	4,780	5,155	5,598	6,088
BLUE BELL MANOR UTILITY	Harris	No	2,778	3,218	3,041	3,218	3,401	3,559	209	623	632	657	689	727	760
BUNKER HILL VILLAGE	Harris	No	3,890	4,198	4,532	4,893	5,282	5,702	391	1,662	1,773	1,898	2,040	2,200	2,375
CENTRAL HARRIS COUNTY REGIONAL WATER AUTHORITY CRU	Harris	No	56,617	61,872	65,549	68,972	72,130	75,453	92	5,377	5,706	5,937	6,183	6,443	6,735
CHIMNEY HILL MUD	Harris	No	5,366	5,449	5,523	5,606	5,697	5,797	103	568	555	544	542	549	559
CLEAR BROOK CITY MUD	Harris	No	18,726	19,140	21,491	23,082	24,365	25,572	91	1,747	1,728	1,896	2,012	2,115	2,219
CLEAR LAKE CITY WATER AUTHORITY	Harris	Yes	70,552	72,792	78,070	82,541	86,841	91,177	174	13,087	13,280	14,087	14,808	15,554	16,326
COUNTRY TERRACE WATER	Harris	Yes	1,612	1,732	1,841	1,944	2,045	2,147	95	156	162	169	176	185	194
COUNTRY-OTHER, HARRIS	Harris	No	122,436	156,972	170,185	175,358	206,259	235,280	399	16,979	21,077	22,428	22,892	26,858	30,616
CROSBY MUD	Harris	No	2,969	3,158	3,220	3,282	3,344	3,408	118	356	361	366	372	378	385
DEER PARK	Harris	No	32,929	34,822	36,276	37,869	39,115	40,308	242	4,122	4,208	4,265	4,388	4,519	4,655
DOUGLAS UTILITY	Harris	Yes	2,565	2,581	2,597	2,615	2,633	2,653	91	234	222	213	213	213	215
EL DORADO UD	Harris	No	4,377	4,569	4,768	4,965	5,042	5,042	92	405	400	399	406	410	410
FOREST HILLS MUD	Harris	Yes	3,274	3,519	3,740	3,740	3,740	3,740	107	359	375	391	387	386	386
FORT BEND COUNTY WCID 2	Harris	Yes	1,957	2,430	2,795	3,155	3,515	3,895	182	382	469	537	604	672	745
FRIENDSWOOD	Harris	No	11,473	13,988	15,621	17,458	19,075	20,868	166	2,020	2,407	2,647	2,935	3,200	3,499
GALENA PARK	Harris	No	10,887	11,092	11,303	11,520	11,742	11,969	78	841	806	779	774	789	804
GREEN TRAILS MUD	Harris	No	2,070	2,080	2,100	2,116	2,127	2,135	282	623	623	622	626	628	630
GREENWOOD UD	Harris	No	4,630	5,324	5,389	5,456	5,522	5,591	75	351	388	385	386	389	393
HARRIS COUNTY FWS1-A	Harris	Yes	1,871	1,976	1,871	1,976	2,080	2,183	88	146	151	157	164	172	180
HARRIS COUNTY FWS2 27	Harris	Yes	2,251	2,419	2,571	2,715	2,857	2,999	104	240	250	261	273	286	300
HARRIS COUNTY FWS5 58	Harris	Yes	1,868	2,007	2,133	2,253	2,371	2,489	193	386	409	430	452	475	499
HARRIS COUNTY MUD 106	Harris	No	5,110	5,187	5,292	5,539	5,648	5,729	255	1,428	1,443	1,497	1,535	1,564	1,586
HARRIS COUNTY MUD 11	Harris	No	3,206	3,296	3,414	3,541	3,677	3,823	102	332	329	332	339	351	364
HARRIS COUNTY MUD 119	Harris	No	7,484	7,727	8,013	8,321	8,534	8,723	85	636	619	611	617	630	644
HARRIS COUNTY MUD 122	Harris	Yes	1,400	1,714	2,023	2,023	2,023	2,023	100	143	170	197	195	194	194
HARRIS COUNTY MUD 132	Harris	No	5,944	6,031	6,083	6,120	6,147	6,169	170	1,065	1,050	1,036	1,040	1,042	1,046
HARRIS COUNTY MUD 148	Harris	No	4,548	4,792	4,834	4,878	4,923	4,970	73	338	347	345	344	346	349
HARRIS COUNTY MUD 151	Harris	No	6,472	6,538	6,592	6,632	6,661	6,683	158	1,093	1,086	1,083	1,082	1,084	1,088
HARRIS COUNTY MUD 152	Harris	No	8,031	8,234	8,528	8,756	8,926	9,053	128	1,090	1,097	1,122	1,144	1,163	1,180
HARRIS COUNTY MUD 153	Harris	No	7,702	7,707	7,731	7,748	7,762	7,771	159	1,315	1,298	1,290	1,285	1,287	1,287
HARRIS COUNTY MUD 154	Harris	No	8,182	8,274	8,491	8,723	8,972	9,239	122	1,043	1,026	1,030	1,046	1,072	1,104
HARRIS COUNTY MUD 158	Harris	No	6,376	6,376	6,376	6,376	6,376	6,376	103	681	661	645	636	634	634
HARRIS COUNTY MUD 180	Harris	No	6,092	6,608	7,000	7,067	7,067	7,067	88	541	564	581	579	577	576
HARRIS COUNTY MUD 189	Harris	No	3,982	4,224	4,383	4,552	4,729	4,916	93	357	362	374	387	401	417
HARRIS COUNTY MUD 216	Harris	Yes	1,074	1,154	1,154	1,154	1,154	1,154	137	154	162	160	159	159	159
HARRIS COUNTY MUD 221	Harris	No	4,559	4,959	5,145	5,322	5,495	5,666	93	450	483	498	514	529	545
HARRIS COUNTY MUD 23	Harris	Yes	4,891	5,256	5,256	5,256	5,256	5,256	78	377	390	379	374	372	372
HARRIS COUNTY MUD 278	Harris	No	12,191	16,255	16,255	16,255	16,255	16,255	95	1,213	1,591	1,587	1,583	1,581	1,580
HARRIS COUNTY MUD 290	Harris	No	5,770	6,029	6,305	6,511	6,662	6,776	115	710	735	767	790	806	820
HARRIS COUNTY MUD 321	Harris	Yes	1,991	1,991	2,151	2,308	2,308	2,308	193	309	404	432	462	461	461
HARRIS COUNTY MUD 342	Harris	Yes	3,874	4,184	4,490	4,490	4,490	4,490	166	681	723	767	761	761	761
HARRIS COUNTY MUD 344	Harris	Yes	3,826	4,474	4,474	4,474	4,474	4,474	232	958	1,106	1,097	1,093	1,091	1,091
HARRIS COUNTY MUD 345	Harris	No	3,981	3,981	3,981	3,981	3,981	3,981	211	900	886	876	870	869	869
HARRIS COUNTY MUD 36	Harris	Yes	1,581	1,708	1,708	1,708	1,708	1,708	220	374	399	395	393	393	393

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Harris County

WUG	County	New WUG	Population Projections				Base Dry Year GPCD				Water Demand Projections (ac-ft/yr)					
			2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2070		
HARRIS COUNTY MUD 361	Harris	Yes	3,218	3,476	3,476	3,476	3,476	3,476	3,476	130	435	460	453	449	448	448
HARRIS COUNTY MUD 372	Harris	Yes	4,155	4,155	4,155	4,155	4,155	4,155	4,155	279	1,257	1,245	1,236	1,232	1,231	1,231
HARRIS COUNTY MUD 400	Harris	No	7,646	8,227	8,692	9,093	9,314	9,414	9,414	151	1,246	1,331	1,404	1,467	1,501	1,516
HARRIS COUNTY MUD 412	Harris	Yes	2,606	2,800	2,975	3,143	3,306	3,471	3,471	193	538	569	599	629	661	694
HARRIS COUNTY MUD 420	Harris	Yes	1,563	1,679	1,784	1,784	1,784	1,784	1,784	88	138	143	149	147	146	146
HARRIS COUNTY MUD 46	Harris	No	3,743	3,751	3,753	3,755	3,756	3,757	3,757	156	618	606	596	591	590	590
HARRIS COUNTY MUD 49	Harris	No	6,952	7,234	7,445	7,609	7,738	7,842	7,912	94	677	690	701	712	721	731
HARRIS COUNTY MUD 5	Harris	No	6,281	6,600	7,024	7,478	7,966	8,490	8,990	80	507	508	521	544	577	614
HARRIS COUNTY MUD 50	Harris	No	3,165	3,197	3,264	3,311	3,321	3,333	3,333	122	396	381	384	388	388	390
HARRIS COUNTY MUD 55	Harris	No	13,959	14,955	15,697	16,785	18,055	19,802	19,802	100	1,430	1,464	1,483	1,556	1,666	1,825
HARRIS COUNTY MUD 58	Harris	Yes	2,224	2,389	2,540	2,540	2,540	2,540	2,540	109	249	261	272	269	269	269
HARRIS COUNTY MUD 6	Harris	Yes	4,345	4,668	4,668	4,668	4,668	4,668	4,668	110	492	515	505	500	499	499
HARRIS COUNTY MUD 8	Harris	No	4,617	4,618	4,619	4,620	4,620	4,620	4,620	104	487	464	445	444	442	442
HARRIS COUNTY MUD 96	Harris	No	6,783	7,033	7,497	8,045	8,570	8,959	8,959	83	582	592	625	666	707	738
HARRIS COUNTY UD 14	Harris	No	3,228	3,534	3,845	4,209	4,657	5,342	5,342	60	217	238	258	283	313	359
HARRIS COUNTY MUD 50	Harris	No	3,603	3,926	4,364	4,364	4,364	4,364	4,364	137	521	552	601	595	593	593
HARRIS COUNTY WCID 1	Harris	No	5,963	6,159	6,411	6,663	6,916	7,168	7,168	200	601	587	591	611	632	655
HARRIS COUNTY WCID 133	Harris	No	5,455	5,507	5,752	6,205	6,694	7,220	7,220	119	674	656	664	703	756	815
HARRIS COUNTY WCID 156	Harris	Yes	1,336	1,450	1,541	1,644	1,730	1,816	1,816	211	302	324	341	362	381	399
HARRIS COUNTY WCID 50	Harris	Yes	2,941	2,990	3,003	3,045	3,058	3,071	3,071	122	370	370	366	368	369	370
HARRIS COUNTY WCID 70	Harris	Yes	1,536	1,650	1,650	1,650	1,650	1,650	1,650	147	238	251	248	246	246	245
HARRIS COUNTY WCID 74	Harris	No	4,181	4,181	4,181	4,181	4,181	4,181	4,181	148	650	629	612	604	602	602
HARRIS COUNTY WCID 89	Harris	Yes	6,116	6,239	6,287	6,411	6,448	6,484	6,484	84	514	505	496	499	500	503
HARRIS COUNTY WCID 96	Harris	No	8,957	8,957	8,957	8,957	8,957	8,957	8,957	171	1,656	1,646	1,645	1,644	1,643	1,642
HARRIS COUNTY WCID-FONDREN ROAD	Harris	Yes	3,703	4,534	5,352	5,352	5,352	5,352	5,352	93	350	415	479	473	472	471
HILSHIRE VILLAGE	Harris	No	749	791	857	951	1,051	1,160	1,160	242	196	203	216	238	263	290
HMMV SUD	Harris	Yes	3,053	3,666	4,340	5,124	5,124	5,124	5,124	127	405	475	553	648	647	646
HOUSTON CRU	Harris	No	2,158,859	2,333,665	2,503,773	2,675,758	2,851,567	3,036,468	3,036,468	570	437,337	462,581	488,531	517,832	550,866	586,347
HUMBLE	Harris	No	17,428	21,152	23,856	25,864	27,358	28,472	28,472	149	2,715	3,190	3,530	3,793	4,004	4,166
JACINTO CITY	Harris	No	10,527	10,829	11,143	11,463	11,793	12,134	12,134	74	768	741	749	770	793	816
JERSEY VILLAGE	Harris	No	7,959	8,028	8,179	8,344	8,525	8,724	8,724	210	1,799	1,785	1,795	1,818	1,854	1,897
KATY	Harris	No	13,348	14,044	14,569	15,031	15,451	15,844	15,844	226	3,214	3,323	3,427	3,525	3,620	3,712
KINGS MANOR MUD	Harris	No	1,308	1,308	1,308	1,308	1,308	1,308	1,308	112	153	149	146	145	144	144
KIRKWOOD MUD	Harris	No	2,241	2,483	2,689	2,936	3,173	3,429	3,429	154	364	391	413	446	481	519
LA PORTE	Harris	No	33,703	34,449	34,963	35,785	36,261	36,729	36,729	268	4,719	4,671	4,615	4,653	4,702	4,762
LAKE MUD	Harris	Yes	3,795	4,076	4,076	4,076	4,076	4,076	4,076	172	380	342	334	330	329	328
LEAGUE CITY	Harris	No	1,574	1,574	1,574	1,574	1,574	1,574	1,574	209	354	351	349	348	348	348
LONGHORN TOWN UD	Harris	No	781	839	891	891	891	891	891	170	141	149	156	155	155	155
LUCE BAYOU PUD	Harris	Yes	7,547	7,547	7,547	7,547	7,547	7,547	7,547	181	1,447	1,406	1,382	1,379	1,376	1,376
MASON CREEK UD	Harris	No	10,219	11,083	12,024	13,047	14,156	15,363	15,363	498	5,600	6,040	6,529	7,070	7,667	8,320
MEMORIAL VILLAGES WATER AUTHORITY	Harris	Yes	441	479	509	541	570	598	598	654	157	169	179	190	200	209
MORGANS POINT	Harris	No	6,340	7,809	8,865	9,651	10,238	10,669	10,669	95	626	757	853	925	979	1,020
MOUNT HOUSTON ROAD MUD	Harris	No	3,977	4,075	4,127	4,222	4,276	4,331	4,331	242	1,035	1,041	1,037	1,056	1,068	1,082
NASSAU BAY	Harris	No	9,468	9,785	10,031	10,277	10,523	10,770	10,770	103	1,019	1,031	1,043	1,060	1,081	1,106
NEWPORT MUD	Harris	No	2,705	2,722	2,793	2,870	2,954	3,043	3,043	180	515	506	508	518	532	548
NORTH BELT UD	Harris	No	2,705	2,722	2,793	2,870	2,954	3,043	3,043	180	515	506	508	518	532	548

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Harris County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
NORTH CHANNEL WATER AUTHORITY CRU	Harris	No	82,325	84,754	86,982	89,192	91,386	93,191	119	10,215	10,207	10,236	10,362	10,585	10,791
NORTH FOREST MUD	Harris	Yes	1,500	1,527	1,527	1,527	1,527	1,527	127	199	198	195	193	193	193
NORTH FORT BEND WATER AUTHORITY CRU	Harris	No	8,522	8,572	8,613	8,654	8,695	8,735	206	1,902	1,896	1,899	1,906	1,914	1,922
NORTH GREEN MUD	Harris	No	4,239	4,296	4,353	4,415	4,477	4,534	116	495	486	481	481	487	493
NORTH HARRIS COUNTY REGIONAL WATER AUTHORITY CRU	Harris	No	726,235	775,561	815,947	850,281	880,552	908,198	160	122,747	128,791	133,934	138,694	143,385	147,826
NORTHWEST HARRIS COUNTY MUD 16	Harris	Yes	3,566	3,831	3,831	3,831	3,831	3,831	133	494	519	512	508	507	506
PARKWAY MUD	Harris	Yes	5,970	6,282	6,328	6,375	6,421	6,468	85	520	528	519	516	517	521
PASADENA	Harris	No	147,738	152,302	156,408	160,926	165,181	169,574	282	21,838	21,859	21,923	22,266	22,795	23,394
PEARLAND	Harris	No	14,601	18,210	21,867	24,826	26,856	28,362	135	2,096	2,575	3,066	3,464	3,739	3,946
PINE VILLAGE PUD	Harris	Yes	2,286	2,455	2,610	2,756	2,900	3,045	99	231	241	250	262	274	288
PINEWOOD COMMUNITY	Harris	Yes	1,201	1,290	1,290	1,290	1,290	1,290	93	113	117	114	113	113	113
QUADVEST	Harris	Yes	772	1,015	1,302	1,641	2,053	2,495	207	171	222	282	353	442	536
ROLLING FORK PUD	Harris	Yes	2,625	2,625	2,625	2,625	2,625	2,625	165	458	450	445	442	441	441
SAGEMADOW LUD	Harris	No	6,264	6,776	7,339	7,971	8,530	9,100	111	716	742	777	829	884	943
SEABROOK	Harris	No	12,358	12,687	12,914	13,279	13,517	13,759	138	1,793	1,796	1,793	1,824	1,852	1,885
SEQUOIA IMPROVEMENT DISTRICT	Harris	Yes	1,026	1,102	1,172	1,172	1,172	1,172	151	163	172	180	179	179	179
SHOREACRES	Harris	No	1,466	1,493	1,515	1,553	1,576	1,599	207	325	324	323	328	333	338
SOUTH HOUSTON	Harris	No	16,774	17,346	17,937	18,551	19,186	19,841	111	1,921	1,908	1,909	1,939	1,998	2,065
SOUTHERN WATER	Harris	Yes	4,366	4,690	4,690	4,690	4,690	4,690	103	460	480	471	466	464	464
SOUTHSIDE PLACE	Harris	No	2,251	2,251	2,251	2,251	2,323	2,500	144	341	330	323	319	328	353
SOUTHWEST HARRIS COUNTY MUD 1	Harris	Yes	1,934	2,368	2,368	2,368	2,368	2,368	74	142	167	162	160	159	159
SPRING MEADOWS MUD	Harris	Yes	3,823	4,107	4,107	4,107	4,107	4,107	81	308	319	311	306	305	305
SPRING VALLEY	Harris	No	3,870	4,202	4,541	4,885	5,258	5,660	251	1,047	1,117	1,190	1,272	1,367	1,471
SUBURBAN UTILITY	Harris	Yes	3,470	3,470	3,470	3,470	3,470	3,470	96	340	330	323	319	318	318
SUNBELT FWSD	Harris	No	27,671	29,105	30,496	32,092	33,934	35,955	101	2,837	2,836	2,850	2,950	3,106	3,288
THE COMMONS WATER SUPPLY	Harris	No	3,346	3,528	3,674	3,783	3,864	3,922	115	403	418	431	442	450	456
THE WOODLANDS CRU	Harris	No	16,144	17,484	19,174	20,436	21,378	22,083	222	3,872	4,149	4,520	4,799	5,013	5,177
TOMBALL	Harris	No	12,742	13,457	14,110	14,677	15,182	15,644	234	3,210	3,344	3,473	3,595	3,714	3,826
TRAIL OF THE LAKES MUD	Harris	No	9,058	9,453	9,578	9,671	9,740	9,791	111	1,043	1,065	1,065	1,067	1,072	1,078
WALLER	Harris	No	479	493	514	541	575	618	165	84	84	86	90	95	102
WEBSTER	Harris	No	14,756	16,010	16,892	17,759	18,312	18,755	238	3,778	4,059	4,257	4,461	4,596	4,706
WEST HARRIS COUNTY MUD 6	Harris	No	2,719	2,943	3,079	3,181	3,257	3,313	129	366	385	394	403	411	418
WEST HARRIS COUNTY REGIONAL WATER AUTHORITY CRU	Harris	No	552,002	579,386	619,208	659,758	673,791	686,030	123	70,643	72,746	76,796	81,270	82,841	84,299
WEST UNIVERSITY PLACE	Harris	No	15,189	16,357	17,629	19,000	20,478	22,074	181	2,926	3,072	3,248	3,465	3,727	4,016
WOODCREEK MUD	Harris	No	3,191	3,210	3,239	3,267	3,300	3,334	118	392	383	378	376	378	382
<b>Harris County Total</b>			<b>4,707,870</b>	<b>5,058,144</b>	<b>5,376,099</b>	<b>5,678,242</b>	<b>5,974,068</b>	<b>6,272,346</b>	<b>N/A</b>	<b>818,076</b>	<b>860,689</b>	<b>902,333</b>	<b>947,322</b>	<b>997,034</b>	<b>1,048,934</b>

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Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Leon County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
BUFFALO	Leon	No	1,970	2,020	2,059	2,113	2,161	2,207	184	386	387	387	393	401	410
CENTERVILLE	Leon	No	1,089	1,169	1,232	1,320	1,397	1,471	176	203	212	219	232	246	258
CONCORD-ROBBINS WSC	Leon	No	2,895	3,091	3,251	3,470	3,659	3,844	152	217	219	221	233	246	258
COUNTY-OTHER, LEON	Leon	No	2,695	3,022	3,284	3,644	3,953	4,260	224	306	327	347	383	415	447
FLO COMMUNITY WSC	Leon	No	3,858	3,919	3,969	4,036	4,095	4,152	76	292	282	274	272	275	279
HILLTOP LAKES WSC	Leon	Yes	1,298	1,392	1,468	1,573	1,664	1,752	181	249	261	271	288	304	320
JEWETT	Leon	No	1,691	2,011	2,270	2,625	2,932	3,232	308	274	319	355	407	454	501
NORMANGEE	Leon	No	661	709	747	801	847	892	310	107	112	115	122	129	135
SOUTHEAST WSC	Leon	Yes	2,054	2,203	2,323	2,489	2,632	2,772	252	267	277	285	302	318	335
<b>Leon County Total</b>			<b>18,211</b>	<b>19,536</b>	<b>20,603</b>	<b>22,071</b>	<b>23,340</b>	<b>24,582</b>	<b>N/A</b>	<b>2,301</b>	<b>2,396</b>	<b>2,474</b>	<b>2,632</b>	<b>2,788</b>	<b>2,943</b>



Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Liberty County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
CLEVELAND COUNTY-OTHER, LIBERTY	Liberty	No	7,730	7,851	7,966	8,081	8,191	8,297	187	1,539	1,527	1,520	1,525	1,543	1,563
DAISETTA	Liberty	No	38,297	41,651	44,757	47,811	50,578	53,049	590	4,661	4,875	5,073	5,324	5,614	5,886
DAYTON	Liberty	No	1,103	1,242	1,375	1,508	1,635	1,757	228	128	138	148	160	173	186
DEVERS	Liberty	Yes	10,759	13,971	17,028	20,094	23,028	25,832	418	2,393	3,051	3,684	4,329	4,957	5,558
HARDIN WSC	Liberty	Yes	773	871	965	1,058	1,147	1,232	416	172	190	209	228	247	265
LAKE LIVINGSTON WATER SUPPLY AND SEWER SERVICE	Liberty	No	4,976	6,231	7,426	8,624	9,772	10,868	198	497	598	699	804	909	1,010
LIBERTY	Liberty	No	1,330	1,495	1,659	1,833	2,017	2,209	70	90	100	111	123	136	148
LIBERTY COUNTY FWSD 1 HULL	Liberty	No	9,270	10,008	10,711	11,416	12,090	12,734	161	1,571	1,649	1,728	1,822	1,926	2,028
MERCY WSC	Liberty	Yes	706	794	879	965	1,046	1,124	288	106	117	127	139	150	161
SOUTH CLEVELAND WSC	Liberty	Yes	219	241	258	278	294	308	96	21	22	23	25	26	27
T & W WATER SERVICE	Liberty	Yes	2,524	2,844	3,148	3,453	3,745	4,024	86	215	232	250	271	293	315
TARKINGTON SUD	Liberty	No	1,428	1,803	2,219	2,708	3,305	4,015	464	357	445	543	660	804	977
WEST HARDIN WSC	Liberty	Yes	3,988	4,685	5,348	6,013	6,650	7,258	208	424	481	538	599	660	720
WOODCREEK WATER OF LIBERTY	Liberty	Yes	312	345	376	409	439	468	68	21	23	25	27	30	31
		Yes	2,888	3,195	3,503	3,797	4,091	4,385	97	283	301	323	347	372	399
<b>Liberty County Total</b>			<b>86,303</b>	<b>97,227</b>	<b>107,618</b>	<b>118,048</b>	<b>128,028</b>	<b>137,560</b>	<b>N/A</b>	<b>12,478</b>	<b>13,749</b>	<b>15,001</b>	<b>16,383</b>	<b>17,840</b>	<b>19,274</b>

Region H Regional Water Planning Group  
**DRAFT** Water User Group (WUG) Population Projections  
 Madison County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, MADISON	Madison	No	7,191	7,710	8,182	8,712	9,204	9,690	344	1,310	1,370	1,428	1,507	1,588	1,672
MADISON COUNTY WSC	Madison	Yes	1,108	1,190	1,262	1,344	1,420	1,494	282	164	171	178	188	198	208
MADISONVILLE	Madison	No	4,915	5,269	5,592	5,953	6,292	6,621	173	900	941	980	1,033	1,089	1,146
NORMANGE	Madison	No	83	88	94	100	106	111	155	13	14	14	15	16	17
NORTH ZULCH MIUD	Madison	Yes	1,456	1,560	1,656	1,763	1,864	1,961	260	197	205	213	224	237	249
<b>Madison County Total</b>			<b>14,753</b>	<b>15,817</b>	<b>16,786</b>	<b>17,872</b>	<b>18,886</b>	<b>19,877</b>	<b>N/A</b>	<b>2,584</b>	<b>2,701</b>	<b>2,813</b>	<b>2,967</b>	<b>3,128</b>	<b>3,292</b>

Draft TWDB Population and Water Demand Projections:  
WUG Summary

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Montgomery County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)					
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060
CHATEAU WOODS MUD	Montgomery	Yes	2,370	3,062	3,062	3,062	3,062	3,062	268	337	330	327	326	326
CLEVELAND	Montgomery	No	30	36	51	69	91	119	187	6	10	13	17	22
CONROE	Montgomery	No	74,960	89,956	103,366	115,733	128,981	143,164	162	12,828	15,106	17,182	19,141	21,300
CORINTHIAN POINT MUD 2	Montgomery	Yes	860	1,111	1,396	1,396	1,396	1,396	269	250	399	398	397	397
COUNTY-OTHER, MONTGOMERY	Montgomery	No	195,382	312,008	450,581	627,185	851,059	1,126,570	118	23,860	37,134	53,061	73,521	99,611
CUT & SHOOT	Montgomery	No	4,145	4,493	5,268	6,292	7,649	9,442	90	366	377	423	496	601
DOBBIN PLANTERSVILLE WSC	Montgomery	No	8,335	11,255	15,183	20,335	27,097	35,974	76	641	839	1,116	1,484	1,971
DOMESTIC WATER	Montgomery	Yes	1,807	2,335	2,934	2,934	2,934	2,934	93	171	213	262	259	258
EAST PLANTATION UD	Montgomery	No	1,354	1,393	1,639	1,885	2,173	2,248	185	266	267	307	350	402
FAR HILLS UD	Montgomery	Yes	1,344	1,735	2,181	2,181	2,181	2,181	242	350	447	557	555	554
GULF UTILITY	Montgomery	Yes	4,695	4,695	4,695	4,695	4,695	4,695	159	806	801	800	798	797
HARRIS COUNTY MUD 386	Montgomery	Yes	3,083	3,083	3,083	3,083	3,083	3,083	132	425	415	409	405	404
HMW SUD	Montgomery	Yes	6,510	7,817	9,253	10,925	10,925	10,925	127	864	1,013	1,180	1,382	1,378
HOUSTON CRU	Montgomery	No	4,727	6,774	9,061	11,272	13,419	14,043	190	958	1,343	1,768	2,181	2,592
JOHNSTON WATER UTILITY	Montgomery	Yes	1,860	2,403	3,019	3,756	4,668	5,765	364	741	949	1,186	1,472	1,828
KINGS MANOR MUD	Montgomery	No	2,790	2,790	2,790	2,790	2,790	2,790	112	327	318	312	308	307
LAKE BONANZA WSC	Montgomery	Yes	2,165	2,797	3,515	4,372	5,435	6,711	98	216	270	333	409	507
LAKE CONROE HILLS MUD	Montgomery	Yes	1,958	2,530	3,179	3,955	4,916	6,070	113	229	287	354	437	541
LAZY RIVER IMPROVEMENT DISTRICT	Montgomery	Yes	922	1,192	1,497	1,497	1,497	1,497	220	218	278	346	345	344
MAGNOLIA	Montgomery	No	4,821	5,789	7,056	8,912	11,632	15,853	212	1,077	1,278	1,547	1,949	2,541
MONTGOMERY	Montgomery	No	2,676	4,985	6,185	7,393	8,625	10,565	224	631	1,164	1,441	1,721	2,008
MONTGOMERY COUNTY MUD 112	Montgomery	Yes	1,150	1,486	1,486	1,486	1,486	1,486	230	285	363	360	359	358
MONTGOMERY COUNTY MUD 115	Montgomery	Yes	1,188	1,535	1,928	1,928	1,928	1,928	164	206	262	325	323	322
MONTGOMERY COUNTY MUD 119	Montgomery	Yes	2,886	3,727	4,683	4,683	4,683	4,683	252	786	1,003	1,251	1,246	1,244
MONTGOMERY COUNTY MUD 15	Montgomery	No	3,792	4,082	4,708	5,534	6,747	8,466	126	497	525	598	698	849
MONTGOMERY COUNTY MUD 18	Montgomery	No	6,350	8,204	9,327	10,450	11,573	14,296	255	1,745	2,322	2,527	2,825	3,859
MONTGOMERY COUNTY MUD 19	Montgomery	No	3,142	3,162	3,184	3,209	3,238	3,267	126	411	398	388	385	391
MONTGOMERY COUNTY MUD 56	Montgomery	Yes	1,447	1,870	2,350	2,350	2,350	2,350	105	156	196	242	239	238
MONTGOMERY COUNTY MUD 8	Montgomery	No	2,963	3,173	3,560	3,947	4,334	5,205	144	445	462	506	554	607
MONTGOMERY COUNTY MUD 83	Montgomery	No	2,078	2,148	2,219	2,290	2,362	2,412	173	391	401	414	426	448
MONTGOMERY COUNTY MUD 84	Montgomery	Yes	1,909	2,466	2,466	2,466	2,466	2,466	205	420	534	529	527	526
MONTGOMERY COUNTY MUD 88	Montgomery	Yes	459	594	746	746	746	746	172	84	106	132	131	131
MONTGOMERY COUNTY MUD 89	Montgomery	No	5,594	5,715	5,804	6,261	6,919	7,140	75	440	443	448	481	545
MONTGOMERY COUNTY MUD 9	Montgomery	No	5,912	6,162	7,024	7,882	7,882	7,882	147	925	947	1,065	1,187	1,184
MONTGOMERY COUNTY MUD 95	Montgomery	Yes	1,557	2,011	2,526	2,526	2,526	2,526	84	130	162	198	195	194
MONTGOMERY COUNTY MUD 98	Montgomery	Yes	1,395	1,803	2,265	2,265	2,265	2,265	110	157	197	243	241	240
MONTGOMERY COUNTY MUD 99	Montgomery	Yes	834	1,077	1,353	1,353	1,353	1,353	205	183	233	290	288	288
MONTGOMERY COUNTY MUD 2	Montgomery	No	1,921	1,965	2,068	2,207	2,392	2,637	120	237	232	237	252	299
MONTGOMERY COUNTY UD 3	Montgomery	No	3,695	3,967	3,967	3,967	3,967	3,967	142	540	563	561	559	557
MONTGOMERY COUNTY UD 4	Montgomery	No	3,069	4,004	4,037	4,634	5,924	7,607	159	509	641	636	724	1,184
MONTGOMERY COUNTY WCID 1	Montgomery	No	3,410	3,741	4,109	4,518	4,974	5,522	86	290	298	312	341	373
MSEC ENTERPRISES	Montgomery	Yes	6,763	8,736	10,977	13,656	16,972	18,842	224	1,627	2,073	2,582	3,199	4,406
NEW CANEY MUD	Montgomery	No	9,351	10,341	11,406	12,680	14,214	16,078	84	777	811	857	931	1,039
OAK RIDGE NORTH	Montgomery	No	3,150	3,294	3,517	3,683	3,683	3,683	169	564	574	600	614	621
PANORAMA VILLAGE	Montgomery	No	2,457	2,499	2,664	2,884	3,179	3,572	214	562	563	592	636	700
PINEHURST DECKER PRAIRIE WSC	Montgomery	Yes	1,221	1,456	2,369	3,685	5,764	9,352	69	83	98	159	248	387
POINT AQUARIUS MUD	Montgomery	No	2,046	2,056	2,199	2,392	2,649	2,991	190	418	414	438	473	523

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Montgomery County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)					
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060
PORTER SUD	Montgomery	No	25,185	31,483	37,835	44,073	55,511	60	1,693	2,116	2,543	2,962	3,383	3,731
QUADVEST	Montgomery	Yes	21,977	28,902	37,080	46,740	71,046	207	4,868	6,310	8,023	10,067	12,575	15,274
RANCH UTILITIES	Montgomery	Yes	1,498	1,935	1,935	1,935	1,935	95	145	181	177	175	175	175
RAYFORD ROAD MUD	Montgomery	No	11,048	10,918	11,795	12,774	14,179	120	1,394	1,348	1,434	1,539	1,659	1,702
RIVER PLANTATION MUD	Montgomery	No	2,674	2,848	3,480	4,111	5,069	228	648	677	826	973	1,136	1,198
ROMAN FOREST CONSOLIDATED MUD	Montgomery	No	1,691	1,710	1,910	2,167	2,494	136	241	238	262	295	339	396
SHENANDOAH	Montgomery	No	2,997	3,904	4,281	4,534	5,197	400	1,308	1,688	1,843	1,948	2,072	2,231
SOUTHERN MONTGOMERY COUNTY MUD	Montgomery	No	11,437	11,864	12,158	12,395	12,783	111	1,315	1,320	1,320	1,327	1,343	1,364
SPLENDORA	Montgomery	No	7,641	8,346	9,991	12,077	18,044	96	752	795	930	1,111	1,348	1,650
SPRING CREEK UD	Montgomery	No	10,802	11,912	12,569	13,741	15,670	86	952	1,018	1,056	1,142	1,257	1,296
STANLEY LAKE MUD	Montgomery	No	3,002	3,373	4,372	5,699	7,444	204	660	731	937	1,215	1,584	2,048
T & W WATER SERVICE	Montgomery	Yes	6,217	7,846	9,659	11,790	17,484	232	1,554	1,935	2,363	2,872	3,502	4,253
THE WOODLANDS CRU	Montgomery	No	100,003	105,894	111,674	118,464	140,330	222	23,986	25,131	26,325	27,820	30,097	32,895
VALLEY RANCH MUD 1	Montgomery	Yes	1,938	2,504	3,146	3,146	3,146	106	211	264	325	322	321	321
WESTWOOD NORTH WSC	Montgomery	No	2,581	2,627	2,929	3,230	3,633	165	460	465	516	568	620	695
WHITE OAK UTILITIES	Montgomery	Yes	1,266	1,636	1,636	1,636	1,636	95	122	153	150	148	147	147
WHITE OAK WSC	Montgomery	Yes	1,023	1,273	1,273	1,273	1,273	89	92	111	108	107	106	106
WILLIS	Montgomery	No	7,227	7,486	8,071	8,877	11,551	120	904	913	966	1,052	1,180	1,362
WOOD BRANCH VILLAGE	Montgomery	No	1,177	1,278	1,548	1,890	2,875	78	90	91	104	127	156	193
<b>Montgomery County Total</b>			<b>627,917</b>	<b>811,252</b>	<b>1,019,278</b>	<b>1,267,916</b>	<b>1,946,063</b>	<b>N/A</b>	<b>99,761</b>	<b>123,379</b>	<b>150,021</b>	<b>181,803</b>	<b>221,715</b>	<b>269,592</b>

Region H Regional Water Planning Group  
**DRAFT** Water User Group (WUG) Population Projections  
 Polk County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, POLK	Polk	No	14,811	15,945	16,619	16,964	16,977	16,694	102	1,540	1,593	1,616	1,626	1,622	1,594
LAKE LIVINGSTON WATER SUPPLY AND SEWER SERVICE	Polk	No	8,717	9,799	10,870	12,014	13,216	14,476	70	592	659	731	807	888	973
LEGGETT WSC	Polk	Yes	2,023	2,260	2,447	2,606	2,735	2,840	157	334	364	387	409	429	445
LIVINGSTON	Polk	No	6,183	6,908	7,477	7,963	8,359	8,678	385	2,594	2,865	3,076	3,263	3,423	3,553
MEMORIAL POINT JD	Polk	Yes	1,123	1,255	1,359	1,447	1,519	1,578	154	182	198	211	223	233	242
MOSCOW WSC	Polk	Yes	143	160	173	184	193	200	141	21	23	24	26	27	28
ONALASKA WSC	Polk	No	3,550	4,502	5,251	5,890	6,411	6,831	101	364	443	504	557	605	644
PROVIDENCE WSC	Polk	Yes	2,126	2,375	2,571	2,738	2,874	2,984	75	157	165	173	184	193	201
SODA WSC	Polk	Yes	1,942	2,170	2,348	2,500	2,625	2,726	84	163	173	182	190	199	206
TEMPE WSC 1	Polk	Yes	2,293	2,561	2,773	2,953	3,099	3,218	90	206	220	231	242	253	263
<b>Polk County Total</b>			<b>42,911</b>	<b>47,935</b>	<b>51,888</b>	<b>55,259</b>	<b>58,008</b>	<b>60,225</b>	<b>N/A</b>	<b>6,153</b>	<b>6,703</b>	<b>7,135</b>	<b>7,527</b>	<b>7,872</b>	<b>8,149</b>

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
San Jacinto County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
CAPE ROYALE UD	San Jacinto	Yes	1,038	1,144	1,227	1,319	1,395	1,462	241	270	293	311	332	351	368
COUNTY-OTHER, SAN JACINTO	San Jacinto	No	12,723	13,972	14,886	15,917	16,701	17,330	220	1,454	1,554	1,628	1,724	1,804	1,871
DODGE OAKHURST WSC	San Jacinto	Yes	502	541	572	604	630	653	113	58	60	62	65	68	70
LAKE LIVINGSTON WATER SUPPLY AND SEWER SERVICE	San Jacinto	No	2,716	3,053	3,387	3,744	4,118	4,511	70	185	205	228	252	277	303
MERCY WSC	San Jacinto	Yes	1,728	1,904	2,042	2,195	2,321	2,434	96	168	177	184	195	206	216
ONE FIVE O WSC	San Jacinto	Yes	2,750	3,030	3,249	3,492	3,693	3,872	105	296	313	327	348	366	384
P B & S C WSC	San Jacinto	Yes	1,871	2,062	2,212	2,377	2,514	2,637	258	251	268	282	300	317	332
RIVERSIDE WSC	San Jacinto	No	509	560	597	632	660	683	64	34	38	40	42	44	46
SAN JACINTO SUD	San Jacinto	No	2,740	3,019	3,239	3,481	3,681	3,860	184	250	261	268	285	300	314
SHEPHERD	San Jacinto	No	2,597	2,861	3,069	3,299	3,490	3,658	117	313	332	348	369	389	407
WATERWOOD MUD 1	San Jacinto	Yes	436	481	516	554	586	614	261	123	133	142	152	160	168
<b>San Jacinto County Total</b>			<b>29,610</b>	<b>32,627</b>	<b>34,996</b>	<b>37,614</b>	<b>39,789</b>	<b>41,714</b>	<b>N/A</b>	<b>3,402</b>	<b>3,634</b>	<b>3,820</b>	<b>4,064</b>	<b>4,282</b>	<b>4,479</b>

Region H Regional Water Planning Group  
**DRAFT** Water User Group (WUG) Population Projections  
 Trinity County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, TRINITY	Trinity	Yes	497	508	433	308	414	385	74	36	34	29	21	28	26
GLENDALE WSC	Trinity	Yes	835	903	909	884	915	957	135	117	123	122	117	121	127
GROVETON	Trinity	No	629	680	685	665	689	721	105	67	69	67	64	66	69
LAKE LIVINGSTON WATER SUPPLY AND SEWER SERVICE	Trinity	No	679	763	847	937	1,019	1,116	70	46	51	57	63	68	75
PENNINGTON WSC	Trinity	Yes	1,272	1,376	1,387	1,348	1,396	1,460	94	120	125	122	117	121	126
TRINITY	Trinity	No	3,807	4,117	4,149	4,032	4,175	4,368	109	420	435	425	406	419	438
TRINITY RURAL WSC	Trinity	No	3,923	4,243	4,275	4,153	4,302	4,502	114	464	488	483	465	480	502
WESTWOOD SHORES MIUD	Trinity	Yes	1,112	1,203	1,212	1,177	1,220	1,276	125	145	152	150	144	149	156
<b>Trinity County Total</b>			<b>12,754</b>	<b>13,793</b>	<b>13,897</b>	<b>13,504</b>	<b>14,130</b>	<b>14,785</b>	<b>N/A</b>	<b>1,415</b>	<b>1,477</b>	<b>1,455</b>	<b>1,397</b>	<b>1,452</b>	<b>1,519</b>

Region H Regional Water Planning Group  
DRAFT Water User Group (WUG) Population Projections  
Walker County

WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
COUNTY-OTHER, WALKER	Walker	No	14,469	14,722	14,888	15,020	15,115	15,181	392	3,034	3,026	3,011	3,011	3,024	3,037
DODGE OAKHURST WSC	Walker	Yes	1,171	1,263	1,334	1,409	1,471	1,524	226	136	141	145	152	158	164
HUNTSVILLE	Walker	No	40,605	42,554	43,959	45,276	46,301	47,130	364	7,861	8,054	8,177	8,344	8,517	8,668
LAKE LIVINGSTON WATER SUPPLY AND SEWER SERVICE	Walker	No	186	209	231	256	281	308	70	13	14	16	17	19	21
NEW WAVERLY	Walker	No	1,140	1,189	1,225	1,259	1,285	1,306	158	190	193	194	197	201	204
PHELPS SUD	Walker	Yes	1,362	1,428	1,474	1,518	1,553	1,580	190	131	132	132	134	136	139
RIVERSIDE WSC	Walker	No	4,816	5,300	5,651	5,989	6,253	6,469	64	324	356	380	403	420	435
THE CONSOLIDATED WSC	Walker	Yes	97	109	119	129	135	140	110	11	12	13	13	14	15
TRINITY RURAL WSC	Walker	No	311	344	369	392	410	424	114	37	40	42	44	46	47
WALKER COUNTY RURAL SUD	Walker	No	7,643	8,125	8,474	8,802	9,055	9,262	254	1,012	1,044	1,065	1,093	1,122	1,147
<b>Walker County Total</b>			<b>71,800</b>	<b>75,243</b>	<b>77,724</b>	<b>80,050</b>	<b>81,859</b>	<b>83,324</b>	<b>N/A</b>	<b>12,749</b>	<b>13,012</b>	<b>13,175</b>	<b>13,408</b>	<b>13,657</b>	<b>13,877</b>



Region H Regional Water Planning Group  
**DRAFT** Water User Group (WUG) Population Projections  
 Waller County

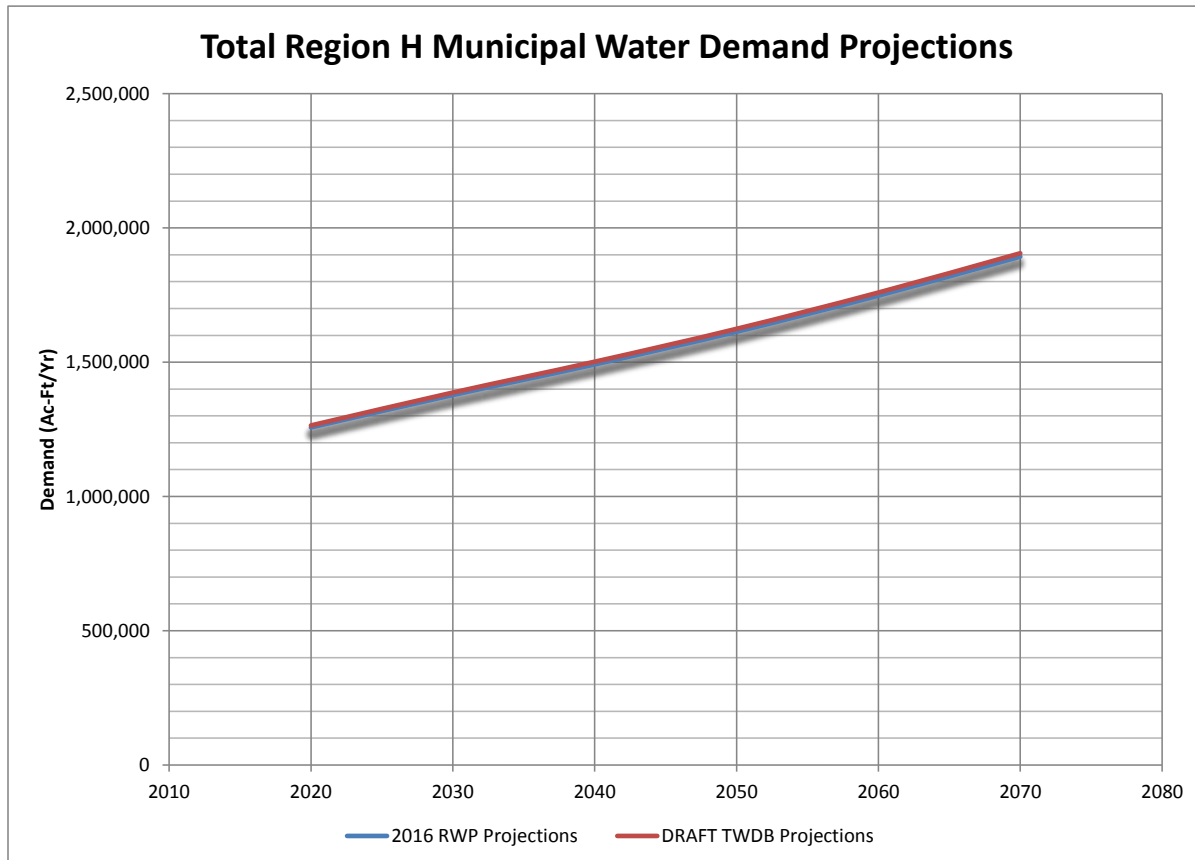
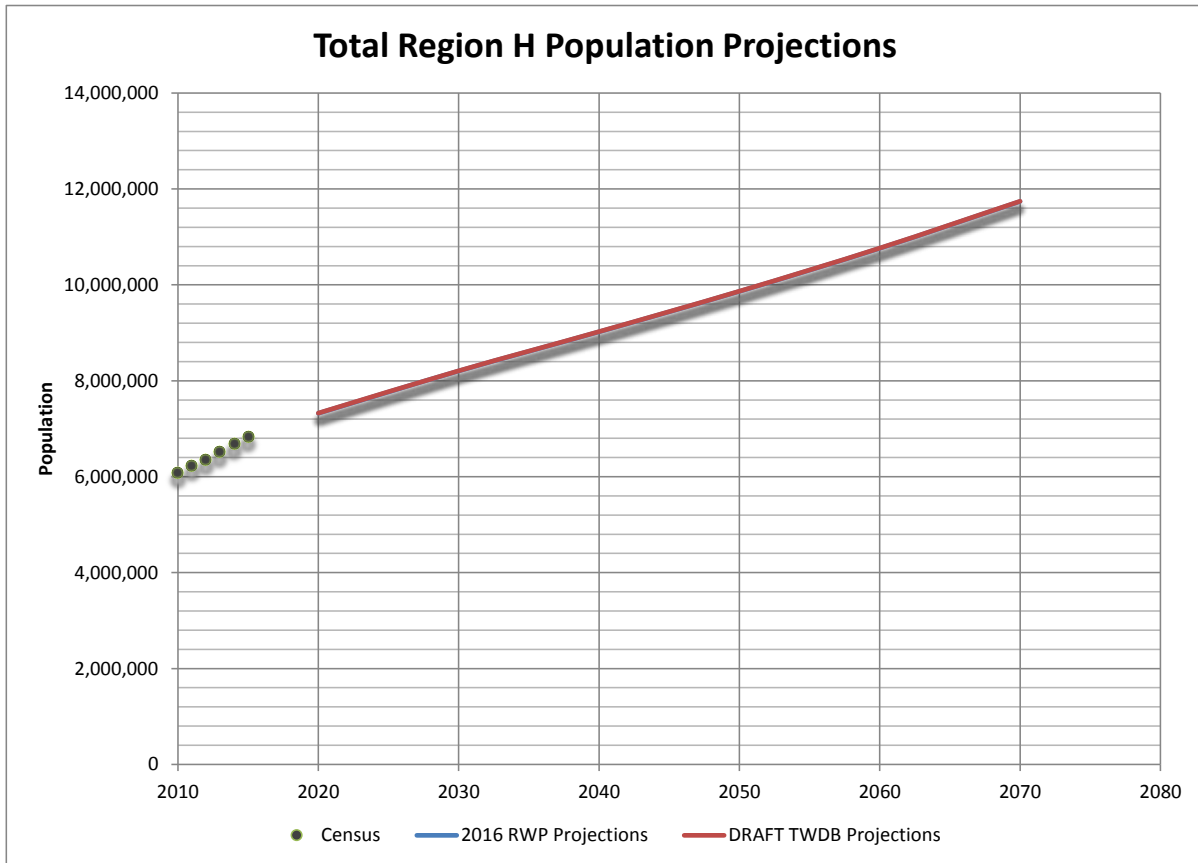
WUG	County	New WUG	Population Projections					Base Dry Year GPCD	Water Demand Projections (ac-ft/yr)						
			2020	2030	2040	2050	2060		2070	2020	2030	2040	2050	2060	2070
BROOKSHIRE MWD	Waller	No	5,279	6,457	7,762	9,186	10,760	12,466	111	602	710	837	981	1,146	1,326
COUNTY-OTHER, WALLER	Waller	No	22,886	27,579	32,807	38,510	44,800	51,626	236	2,799	3,272	3,824	4,451	5,166	5,947
G & W W/SC	Waller	No	3,878	5,262	6,796	8,471	10,320	12,325	224	449	593	758	939	1,142	1,363
HEMPSTEAD	Waller	No	6,726	7,843	9,081	10,433	11,926	13,544	182	1,303	1,489	1,702	1,944	2,218	2,517
KATY	Waller	No	1,469	1,835	2,239	2,680	3,168	3,696	226	354	434	527	628	742	866
OAK HOLLOW UTILITY	Waller	Yes	1,769	2,136	2,543	2,987	3,478	4,010	113	206	240	282	328	381	439
PATTISON WSC	Waller	Yes	1,702	2,056	2,448	2,876	3,348	3,860	147	263	310	365	426	495	570
PRAIRIE VIEW	Waller	No	3,400	4,607	5,945	7,406	9,019	10,768	442	806	1,073	1,370	1,698	2,065	2,464
PRAIRIE VIEW A&M UNIVERSITY	Waller	Yes	3,209	3,209	3,209	3,209	3,209	3,209	132	216	216	216	216	216	216
QUADVEST	Waller	Yes	119	156	200	252	315	383	207	26	34	43	54	68	82
WALLER	Waller	No	2,039	2,222	2,424	2,645	2,890	3,154	165	356	379	407	440	479	523
WHITE OAK UTILITIES	Waller	Yes	62	81	81	81	81	81	95	6	8	7	7	7	7
<b>Waller County Total</b>			<b>52,538</b>	<b>63,443</b>	<b>75,535</b>	<b>88,736</b>	<b>103,314</b>	<b>119,122</b>	<b>N/A</b>	<b>7,386</b>	<b>8,758</b>	<b>10,338</b>	<b>12,112</b>	<b>14,125</b>	<b>16,320</b>

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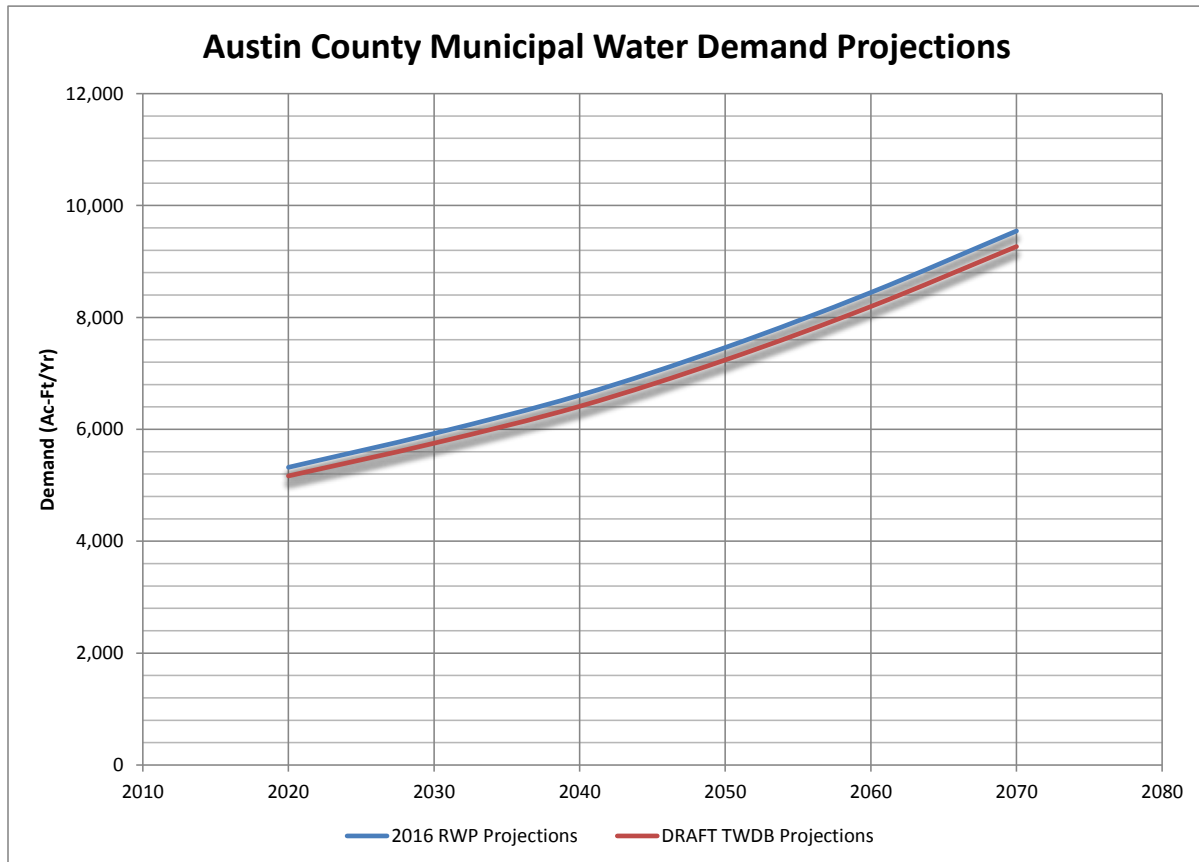
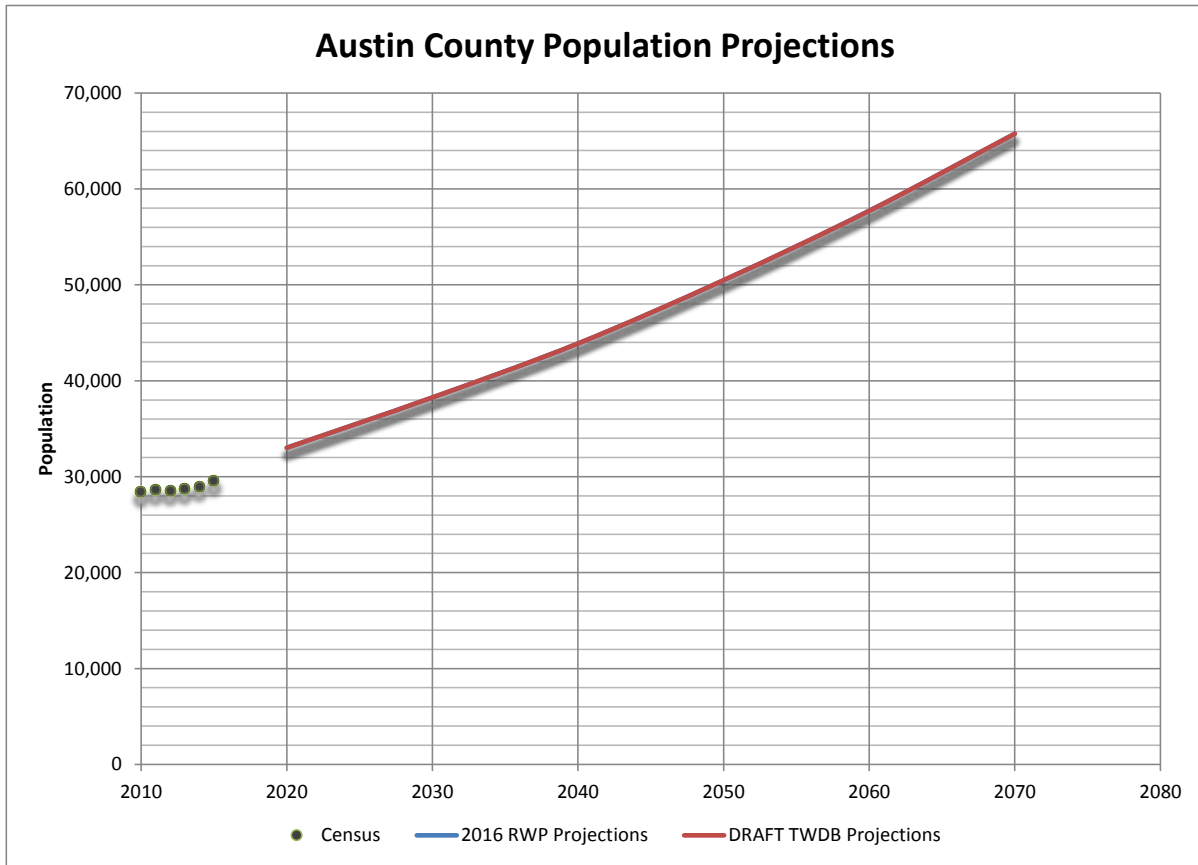
Draft TWDB Population  
and Water Demand Projections:  
County-Level Summary

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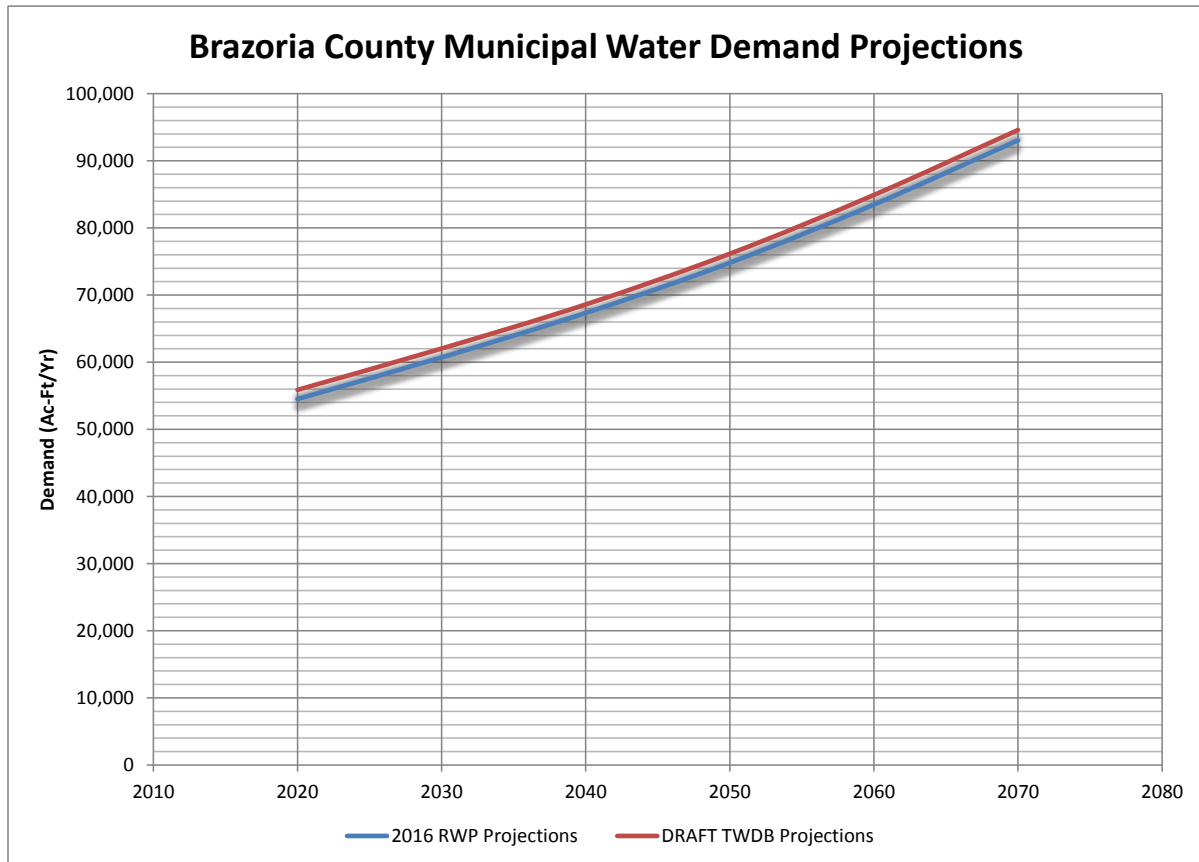
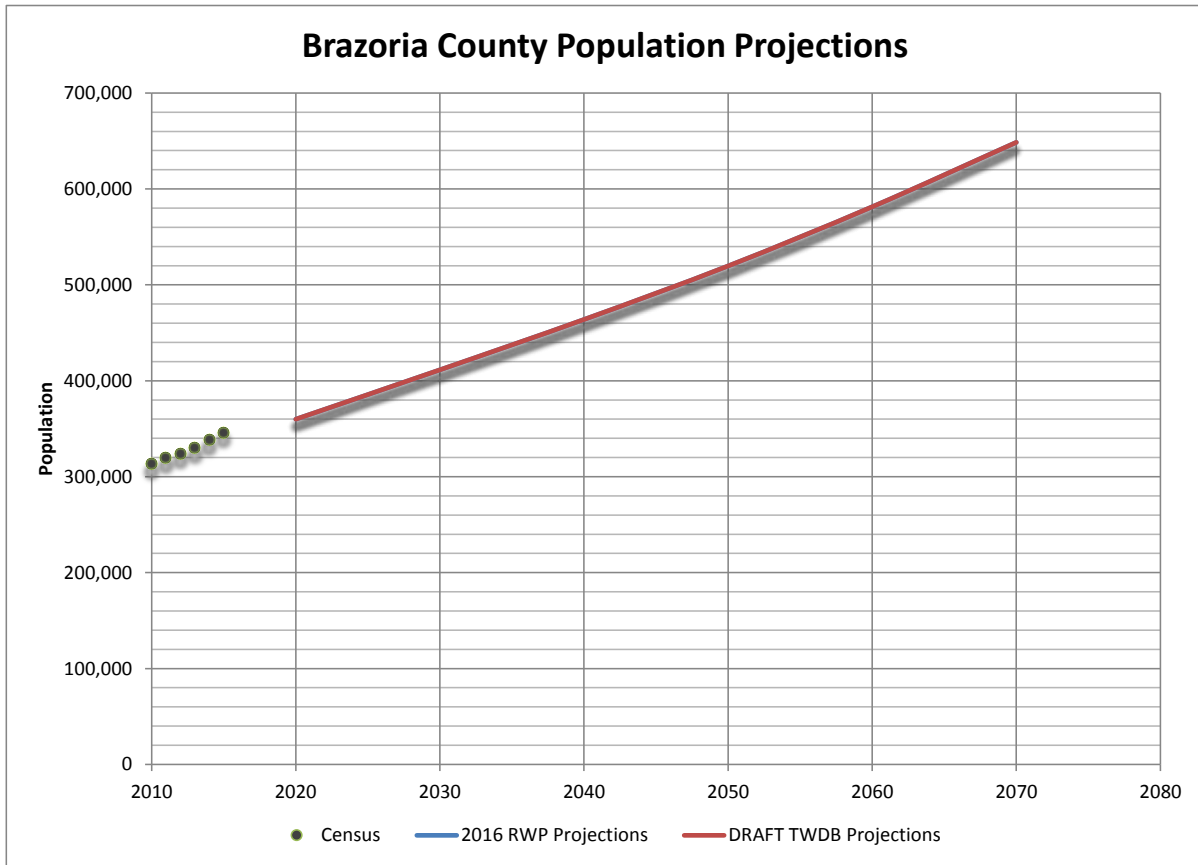
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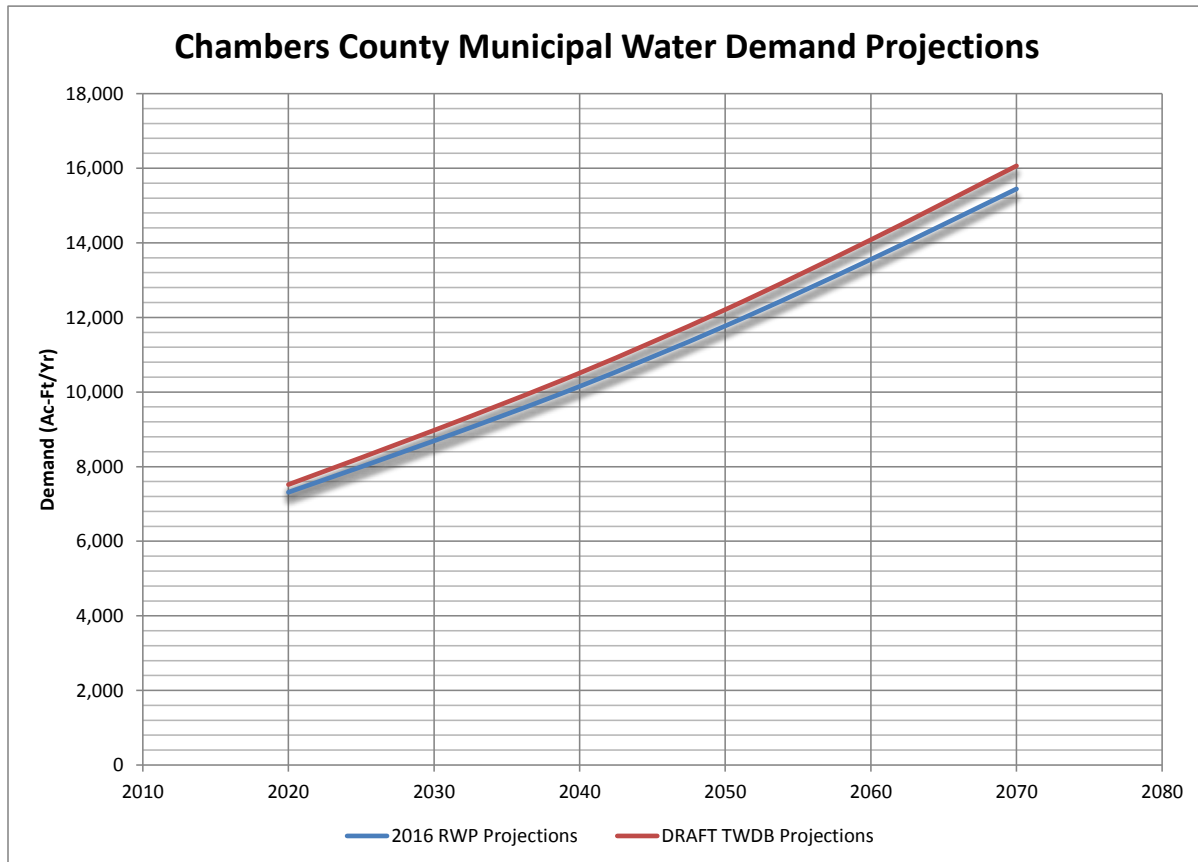
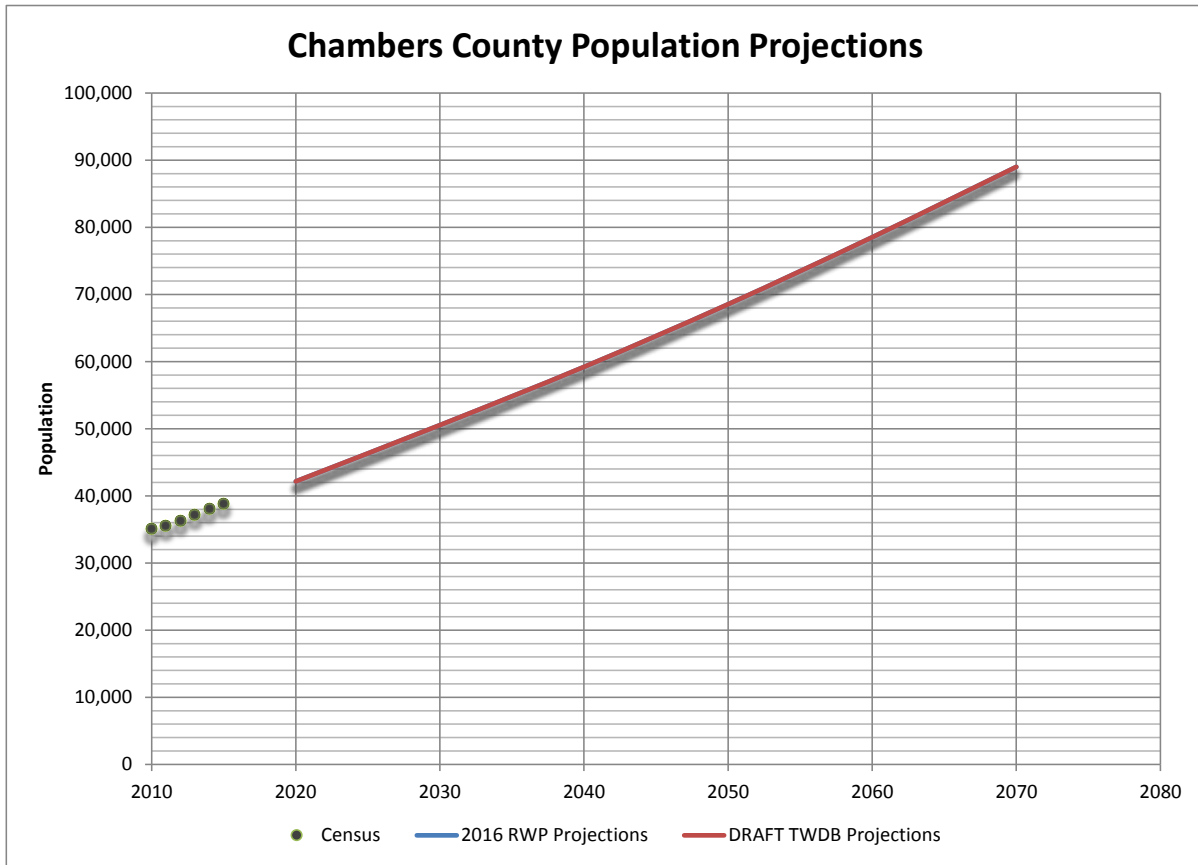
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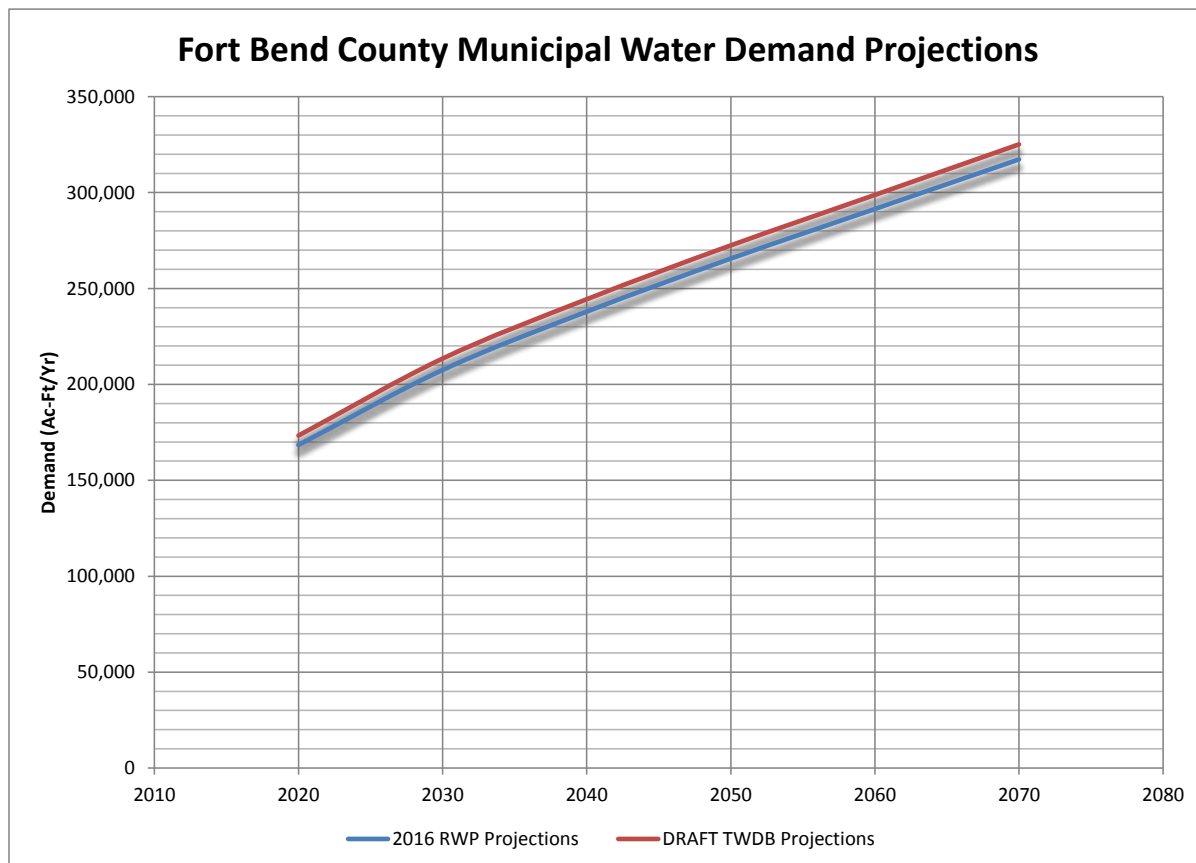
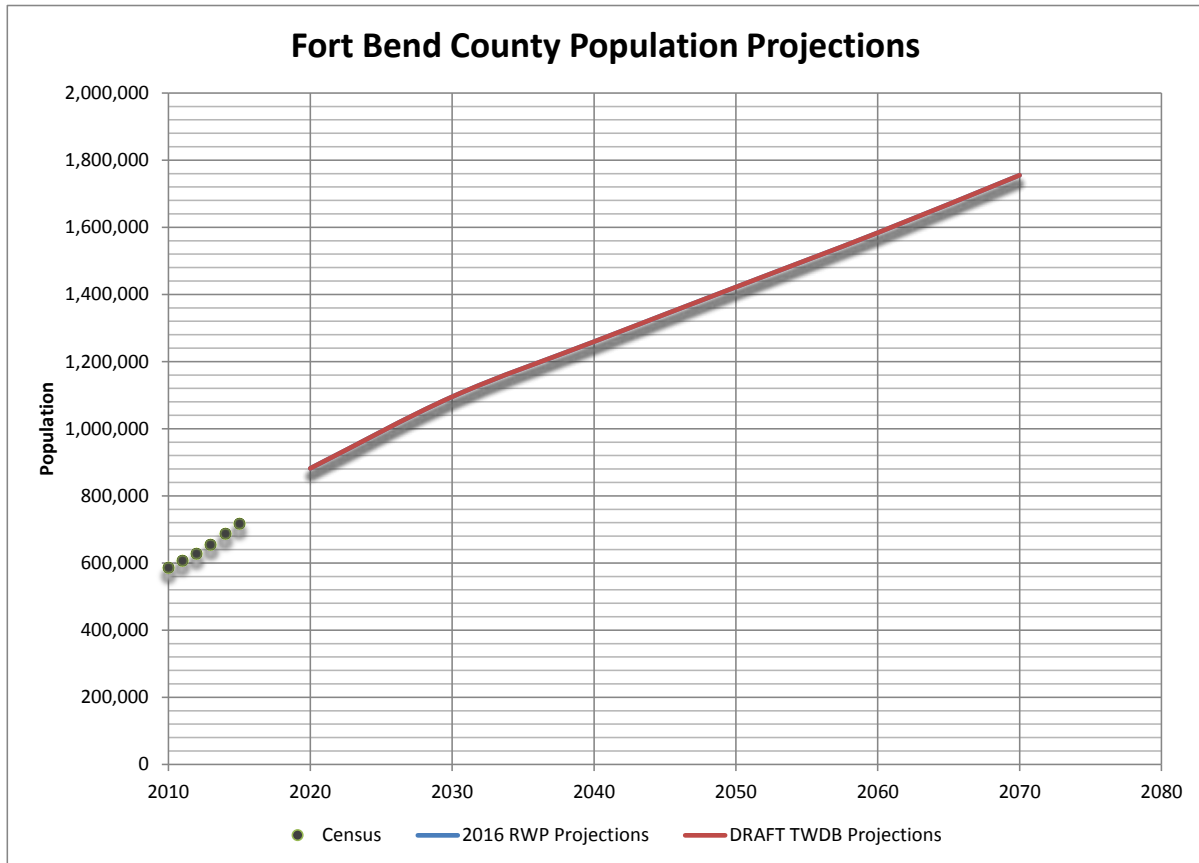


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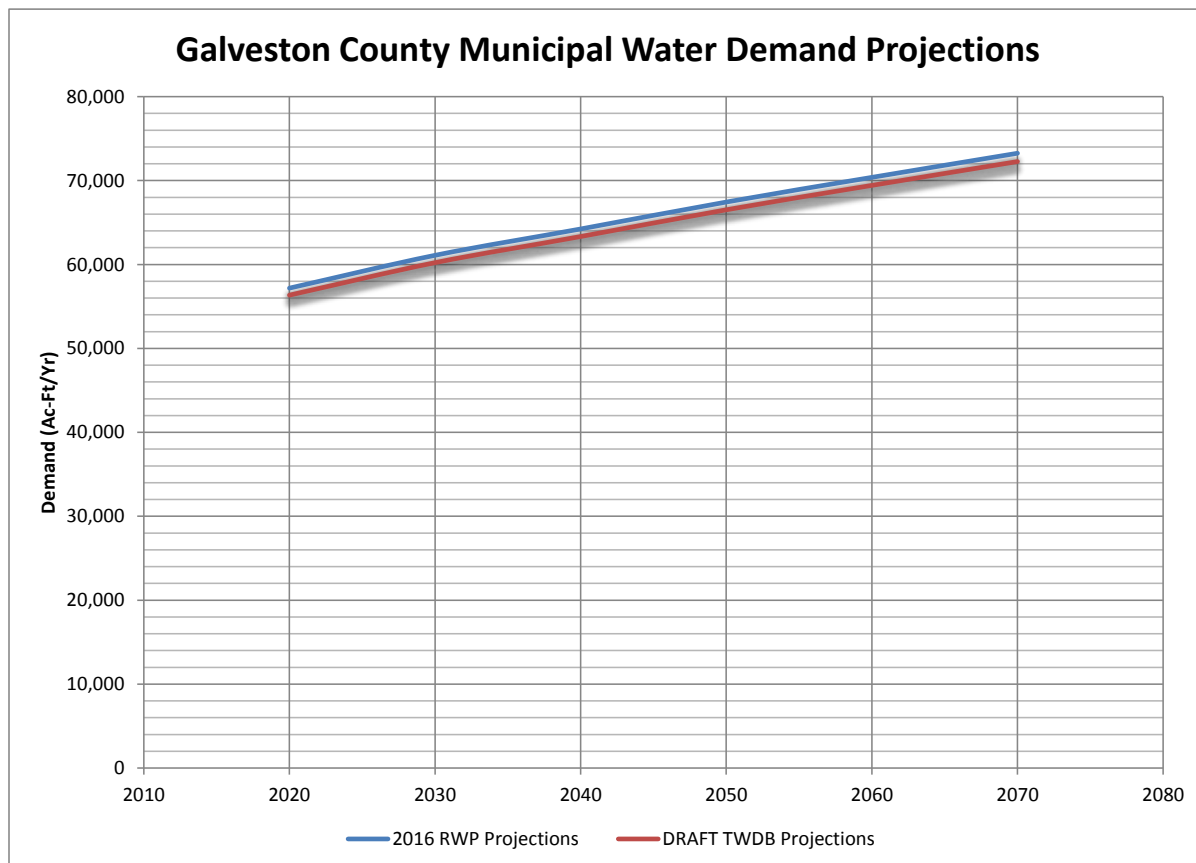
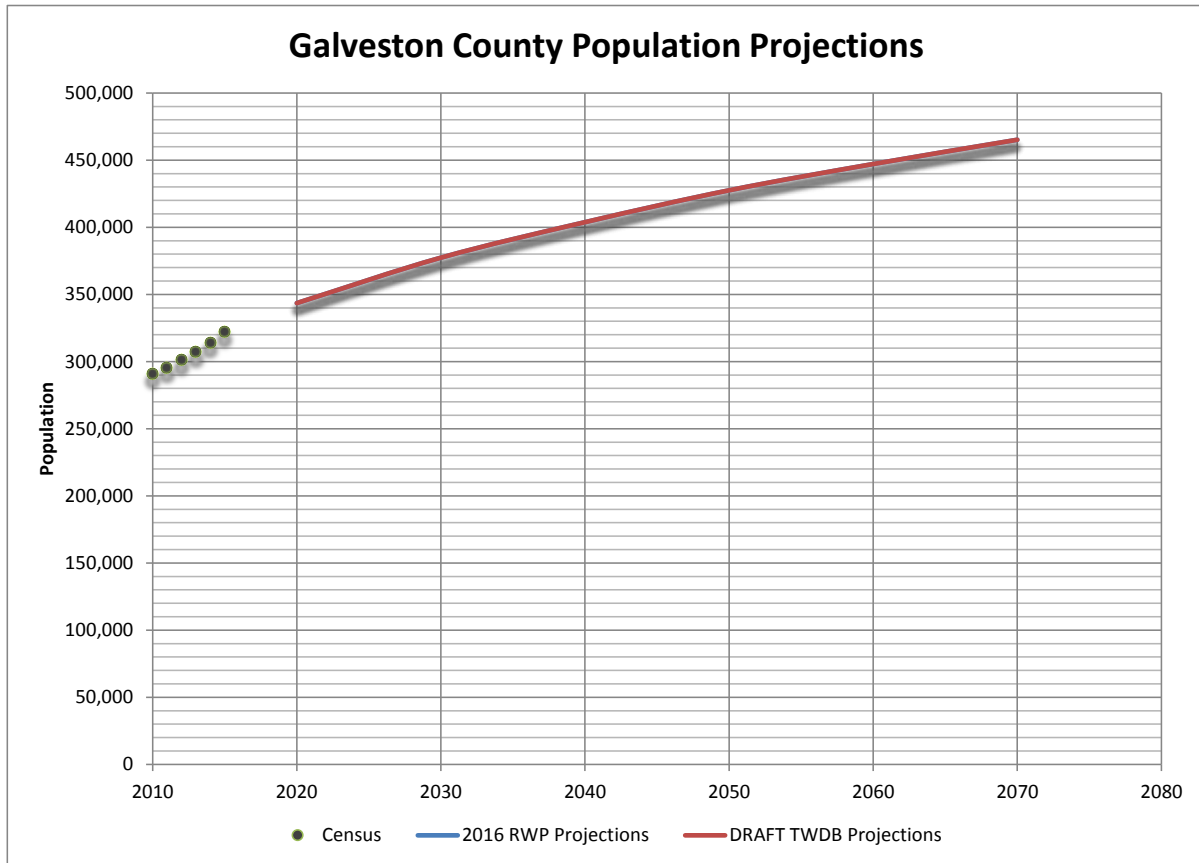




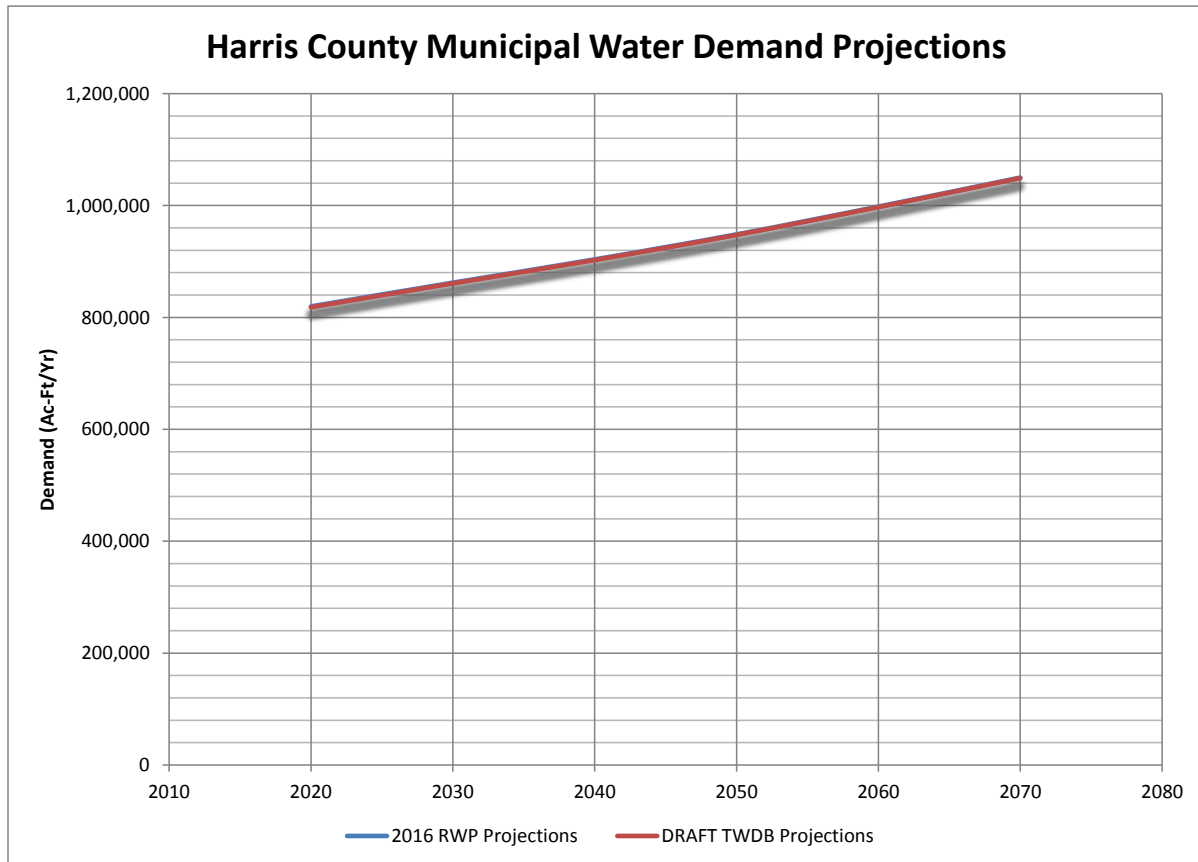
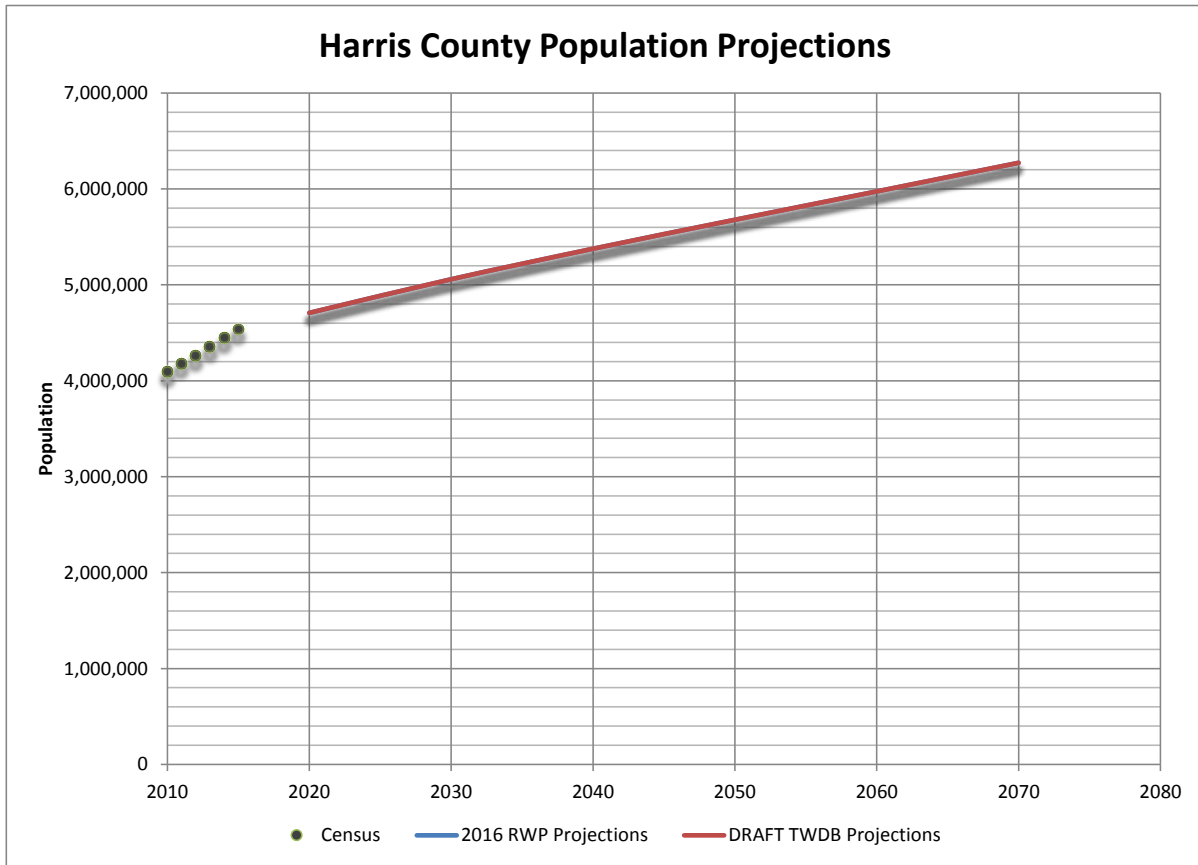
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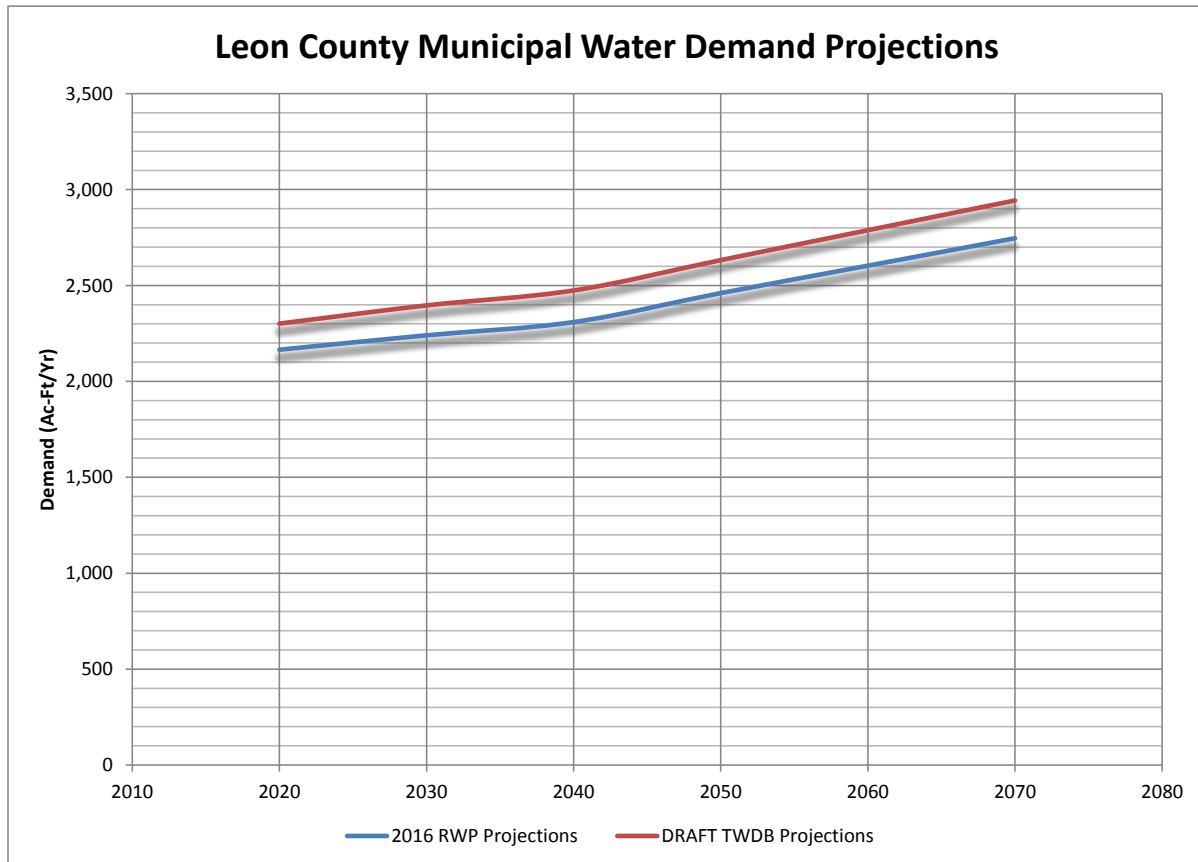
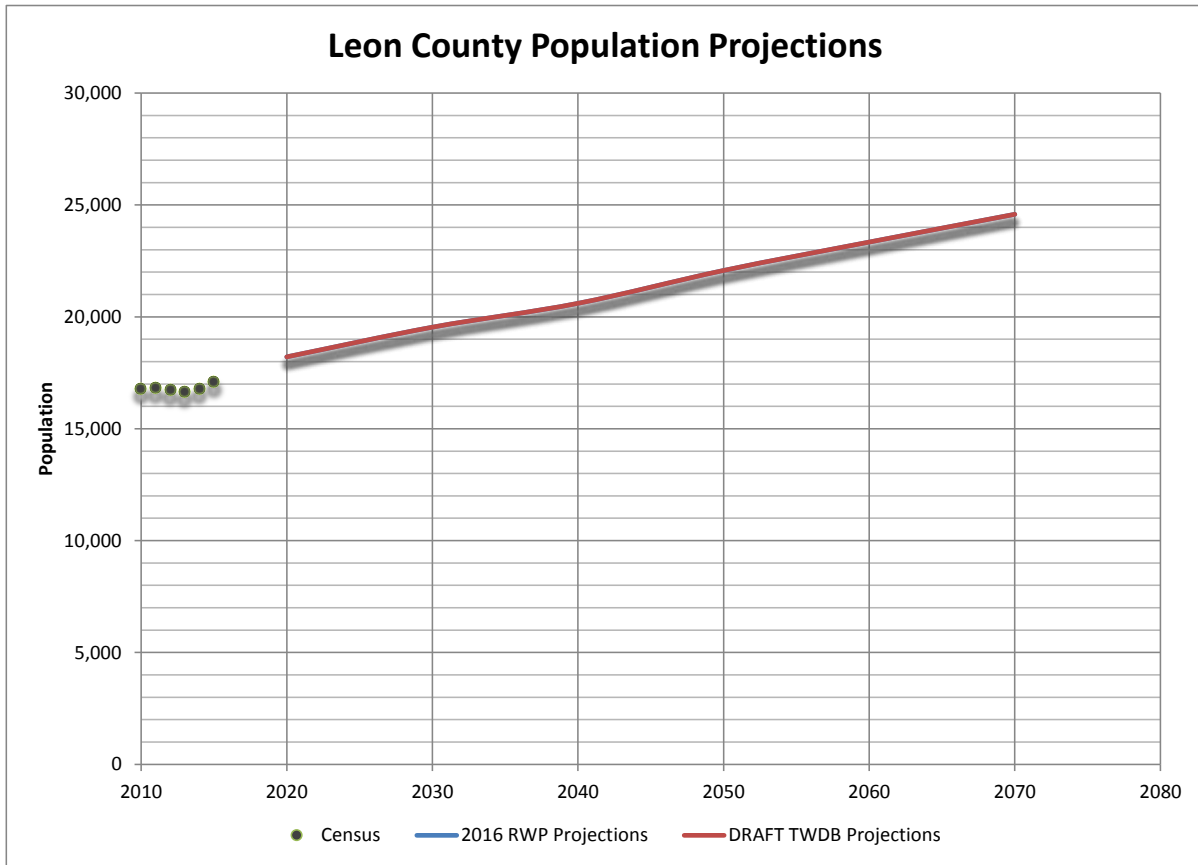
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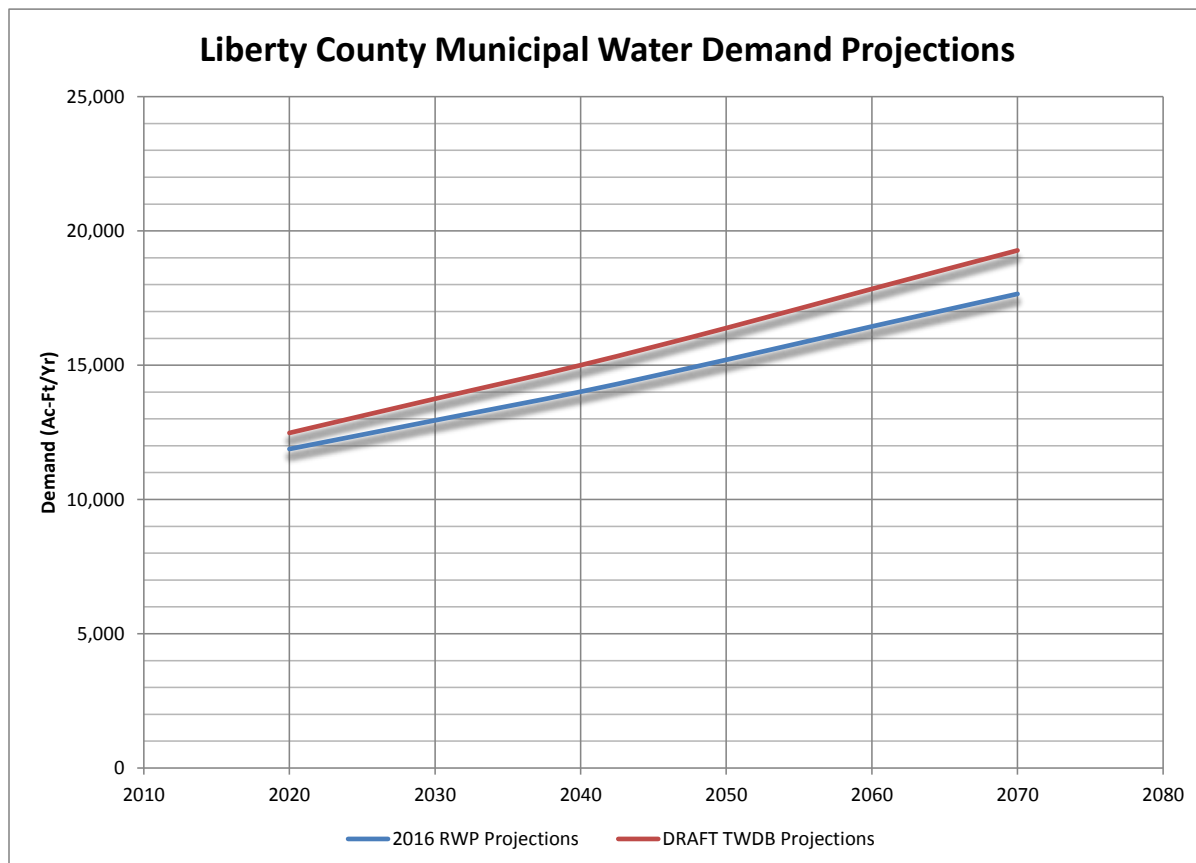
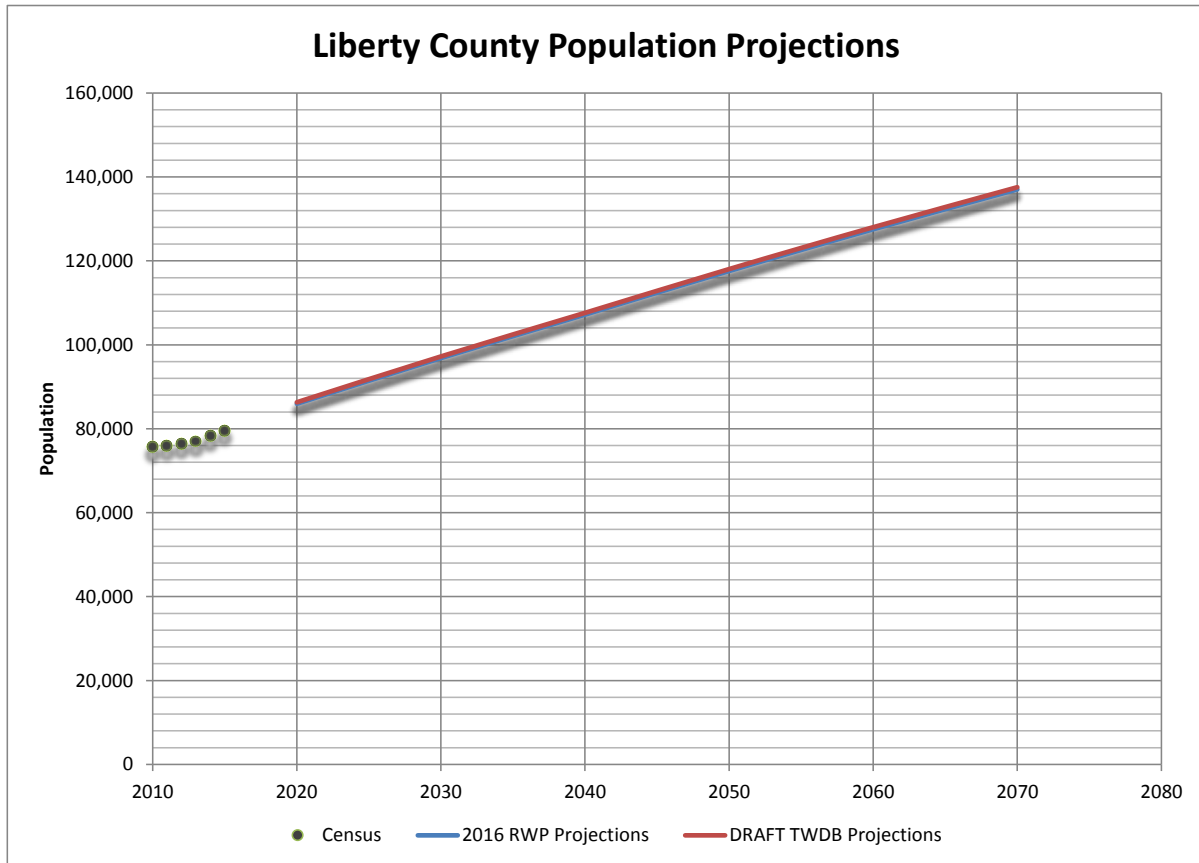
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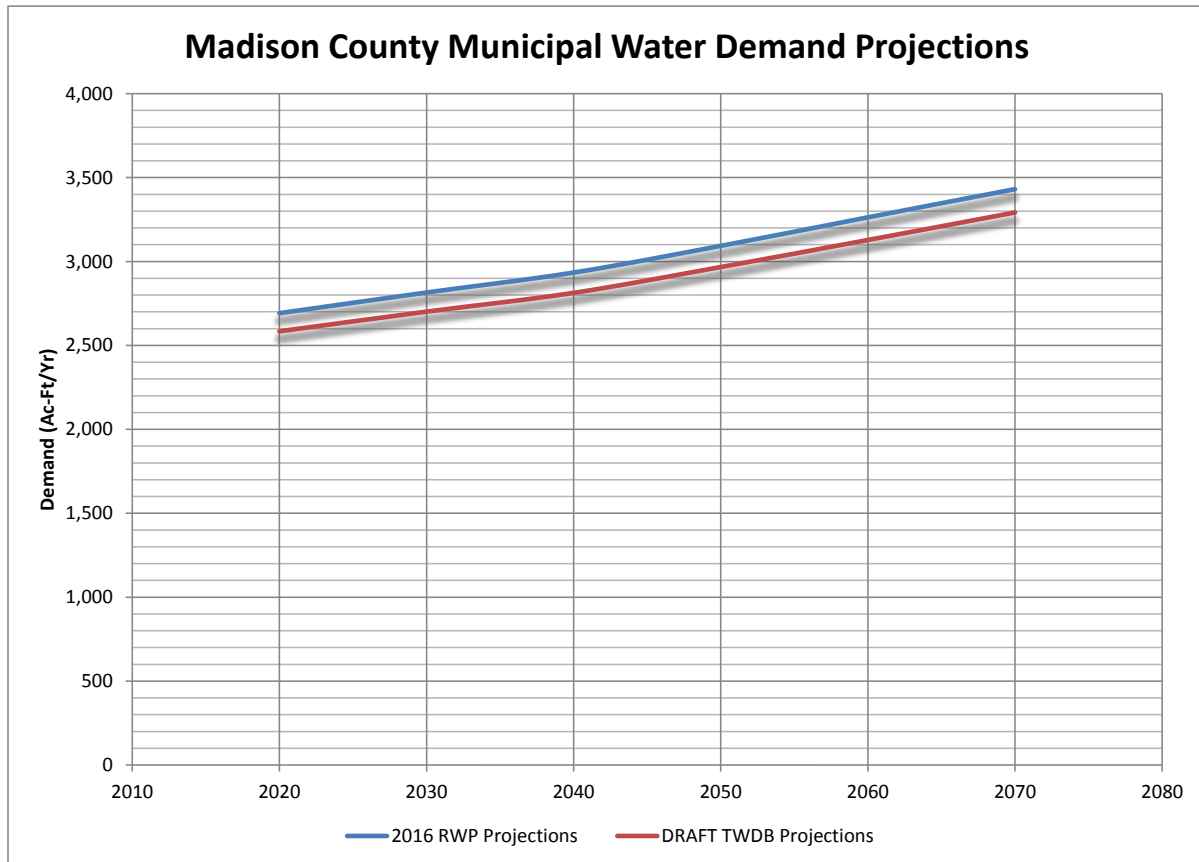
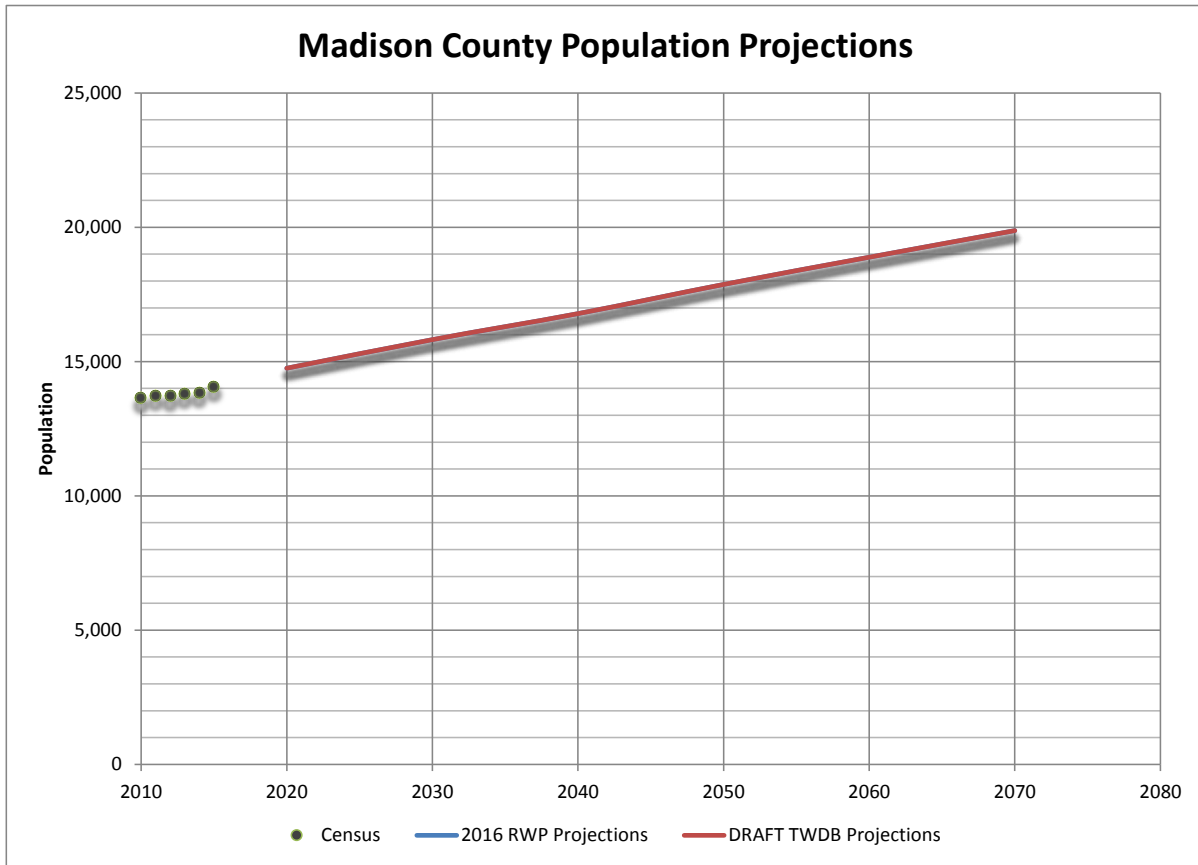
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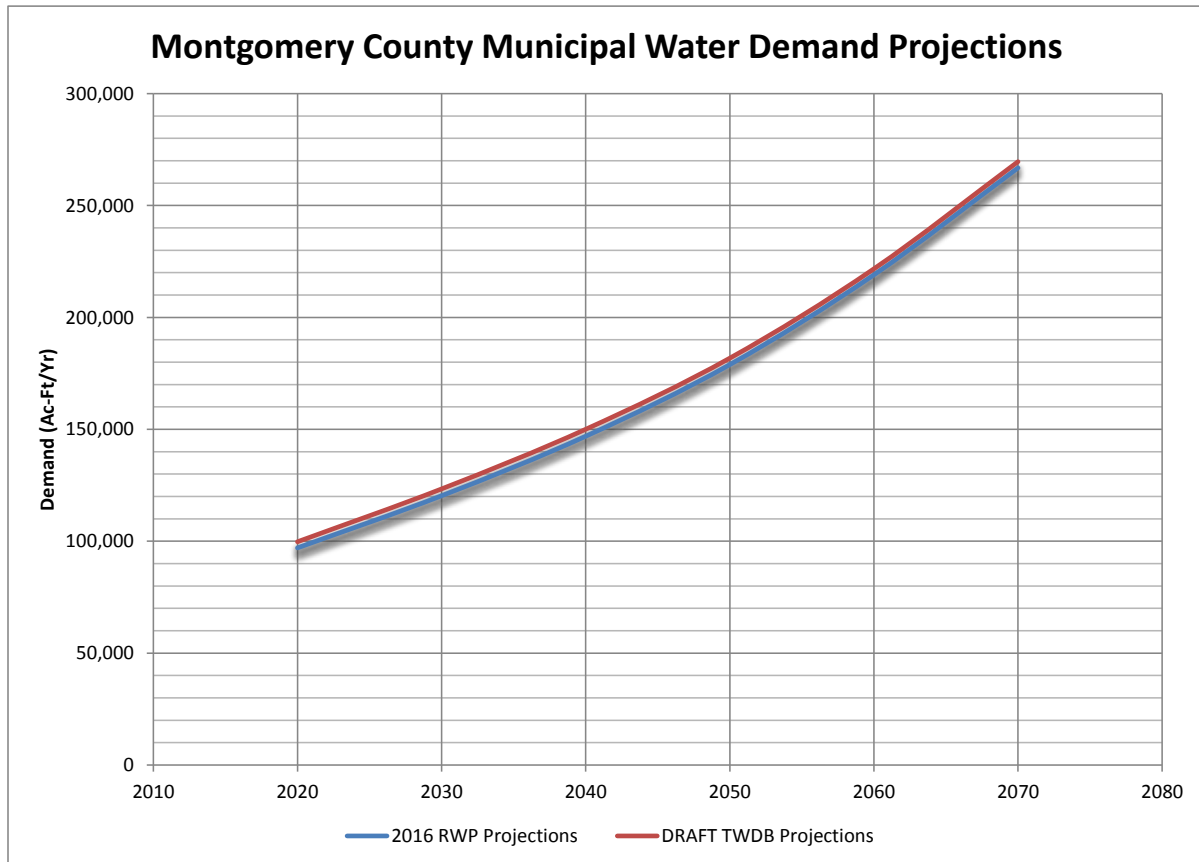
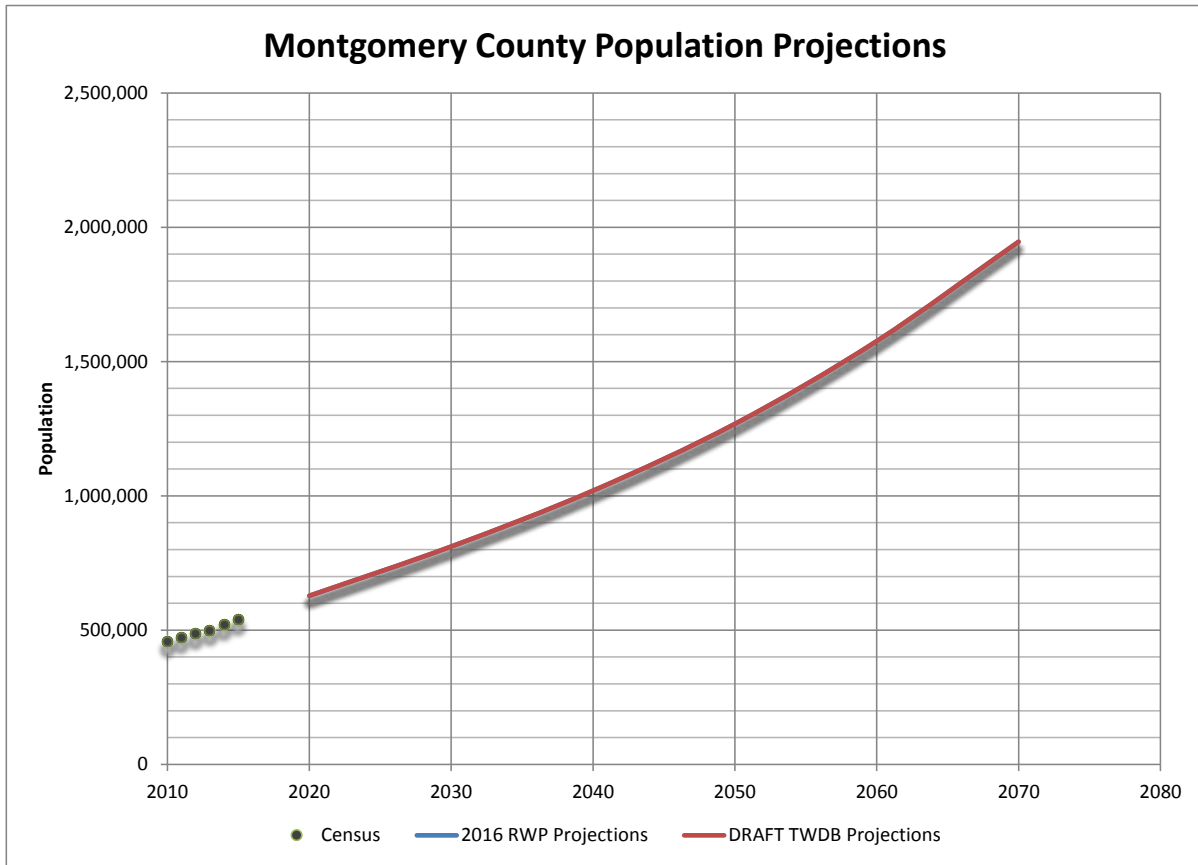
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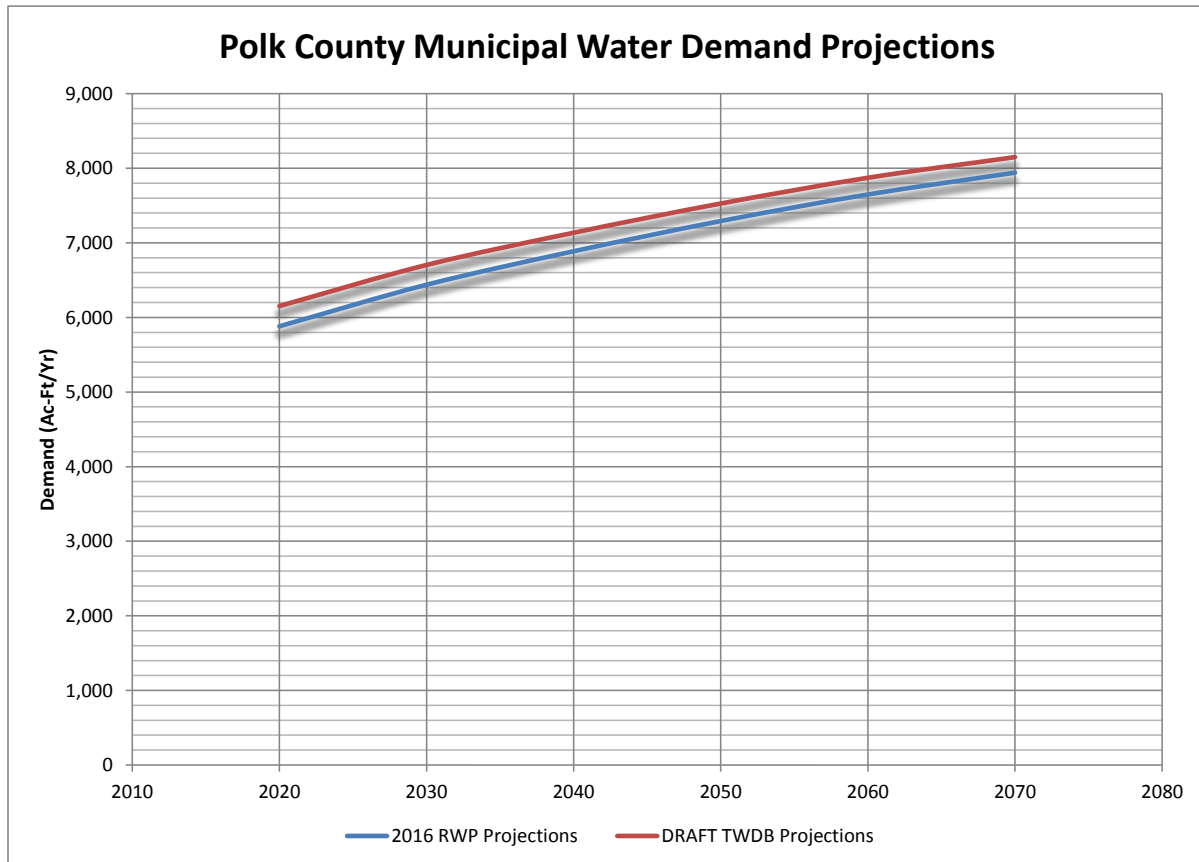
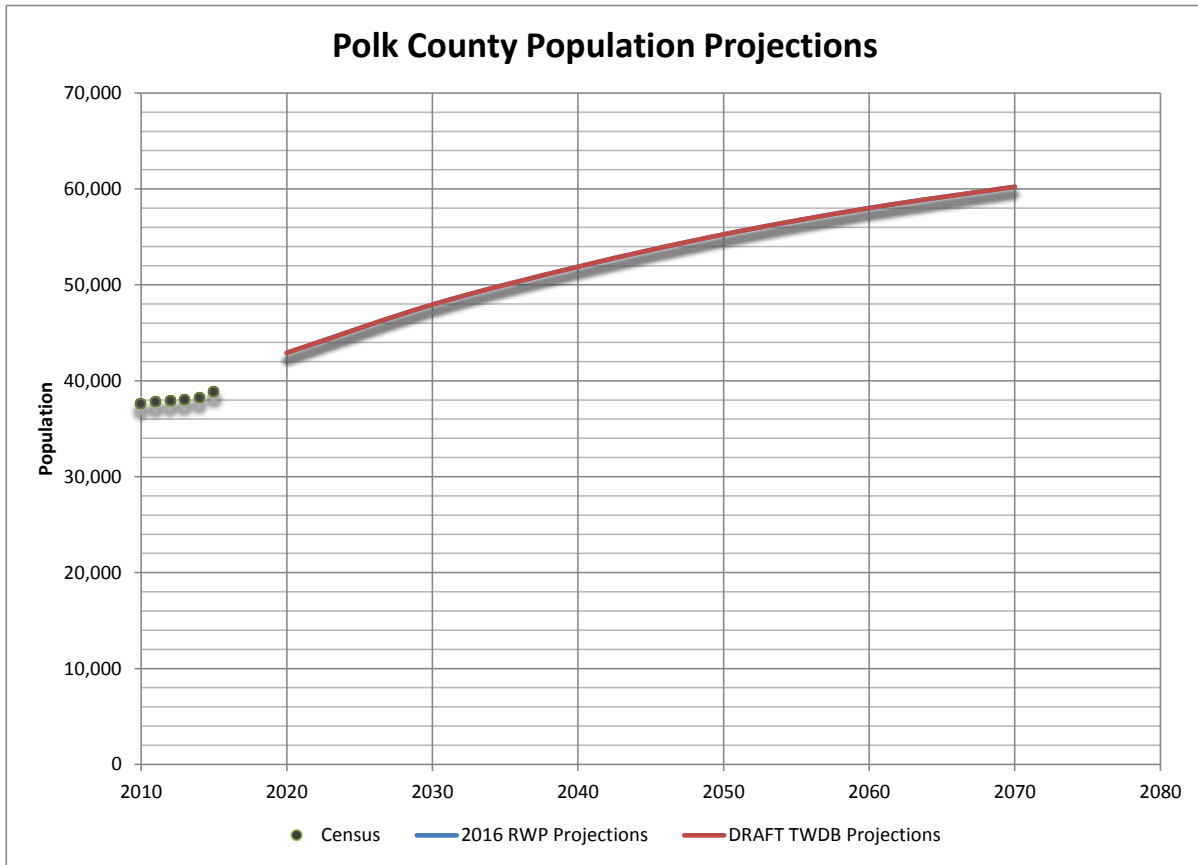
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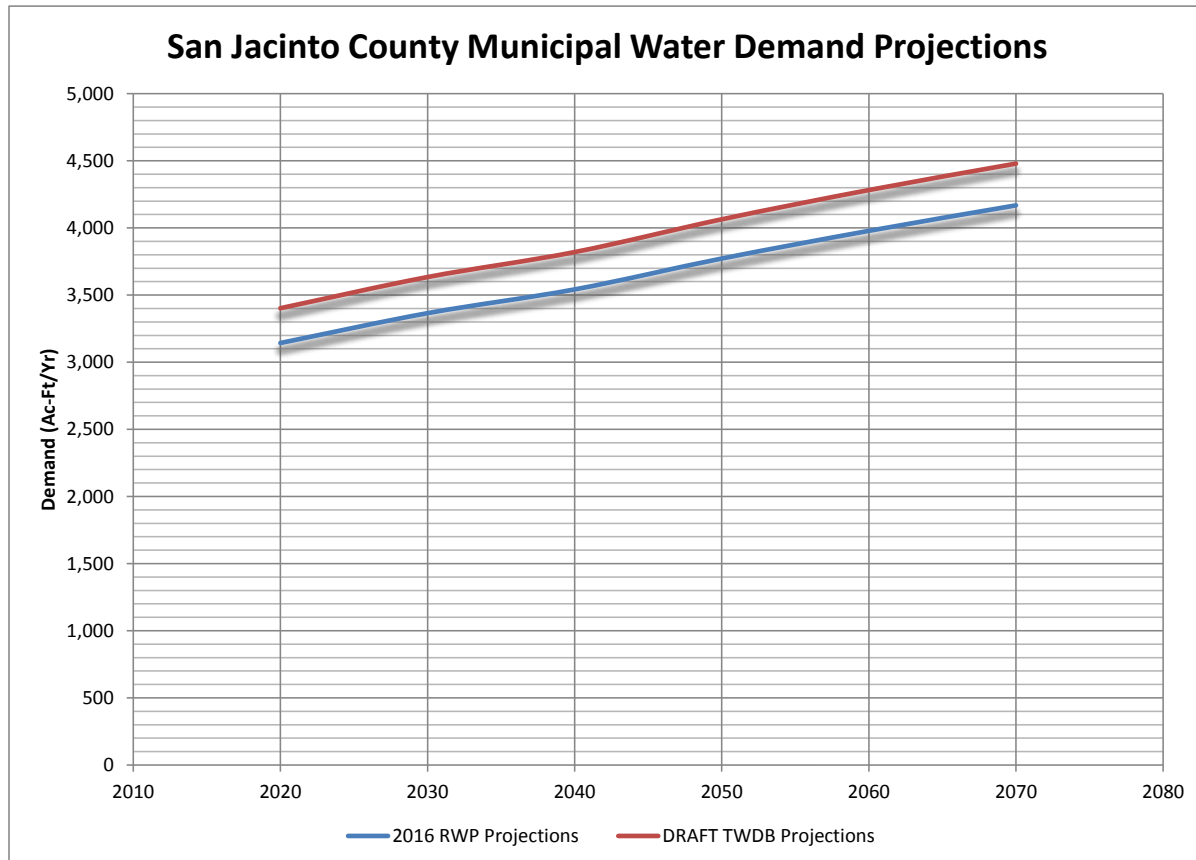
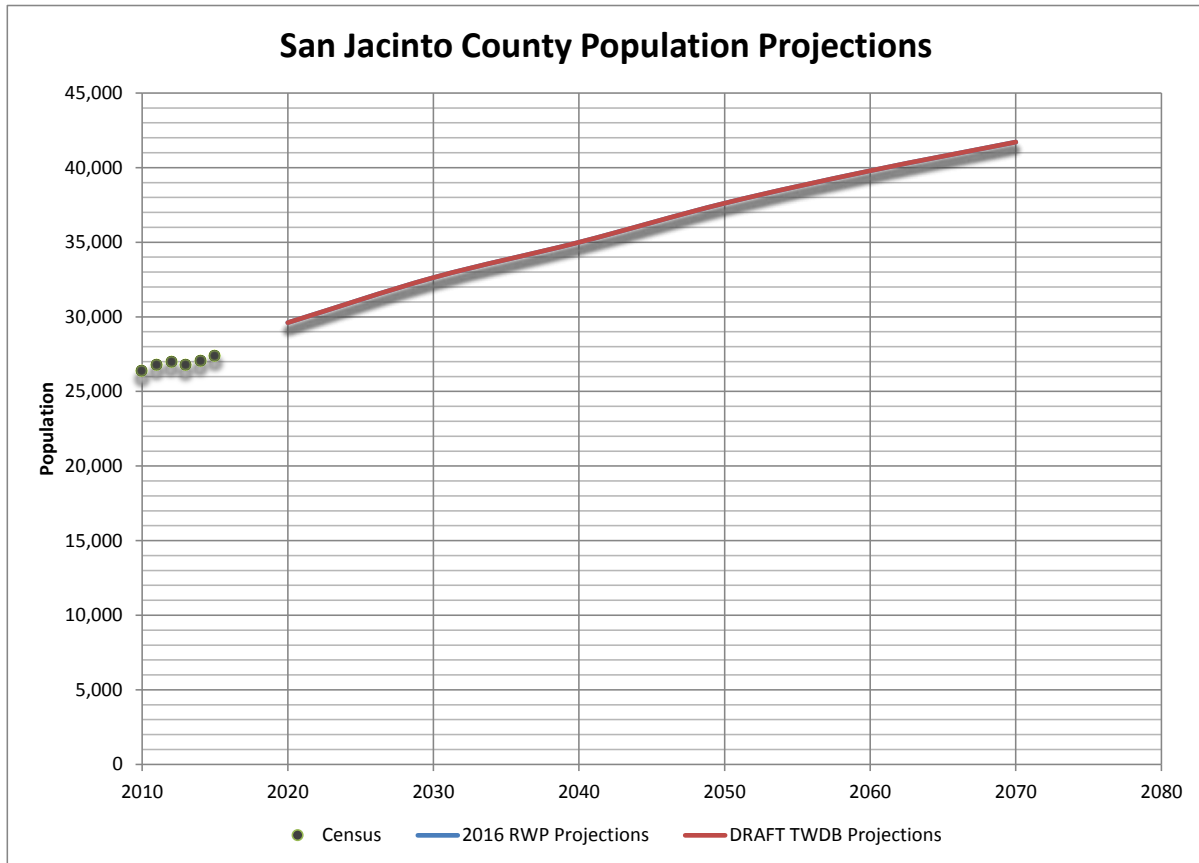


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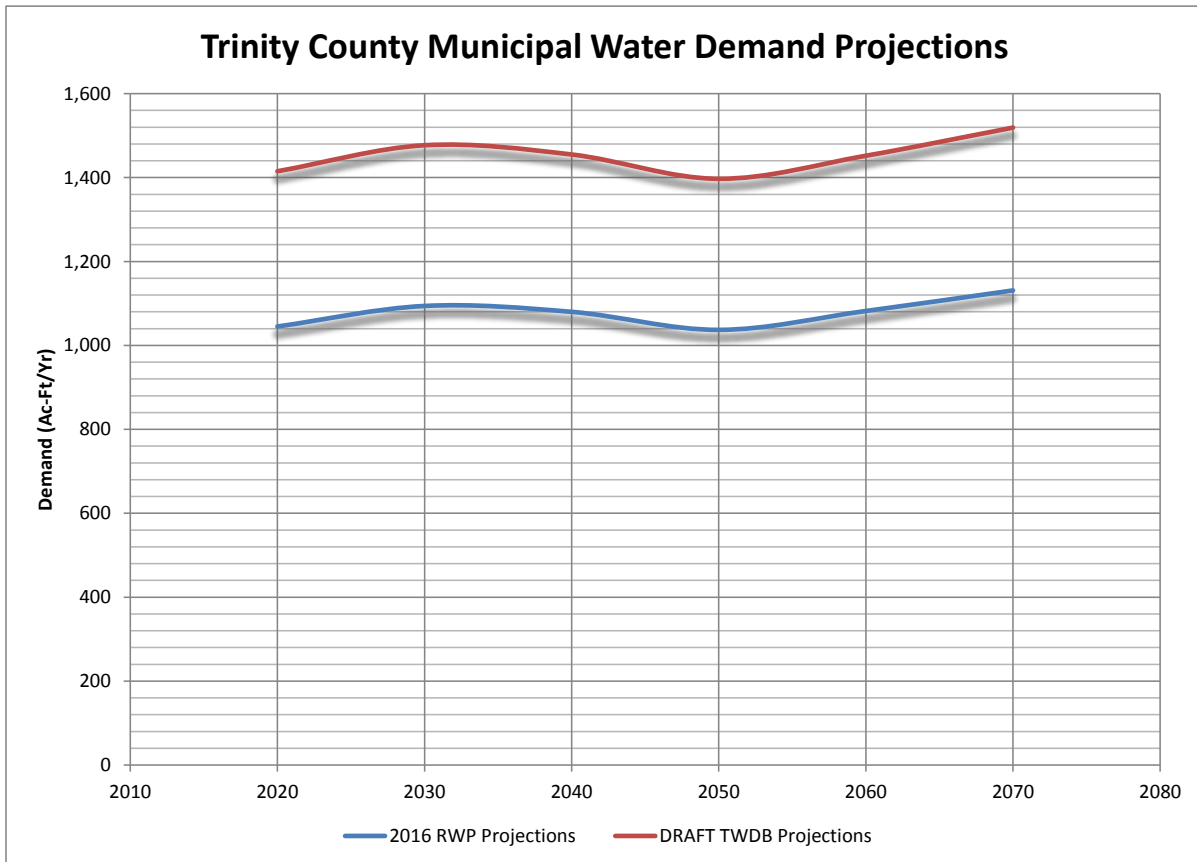
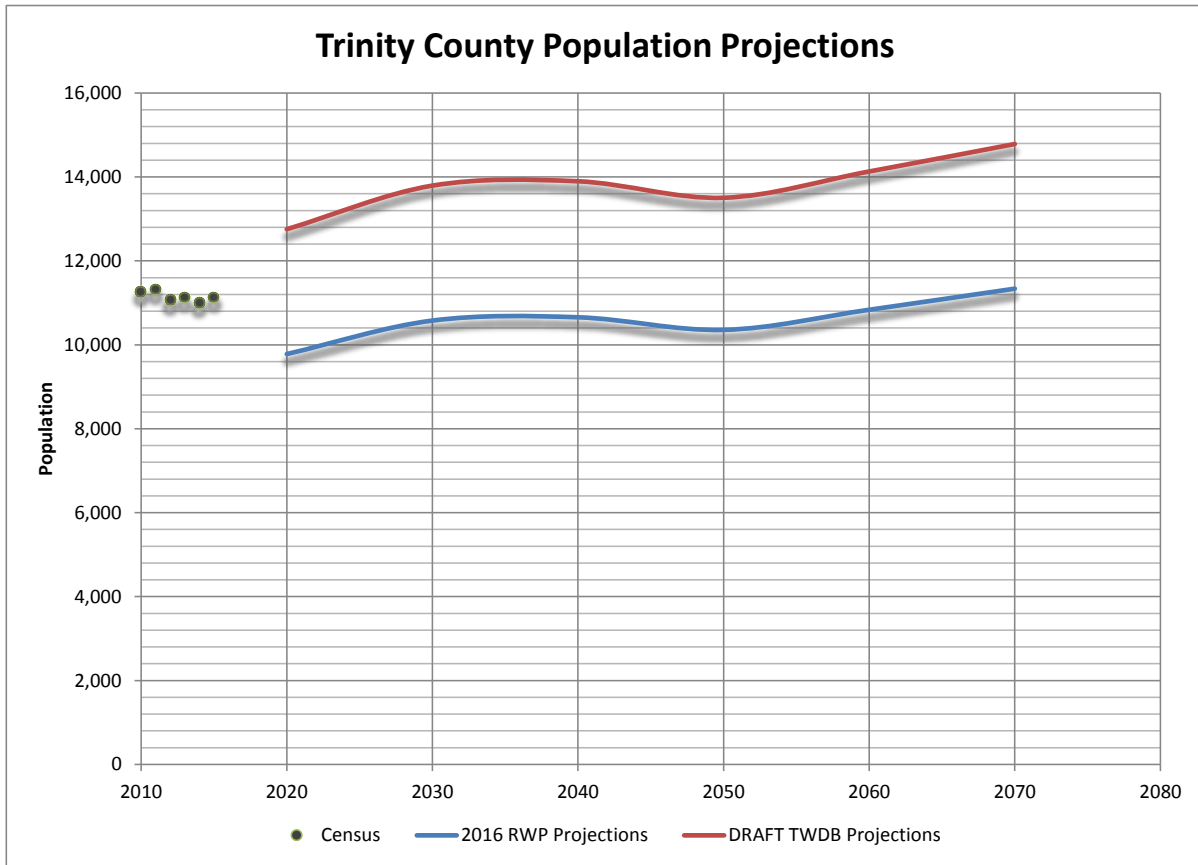




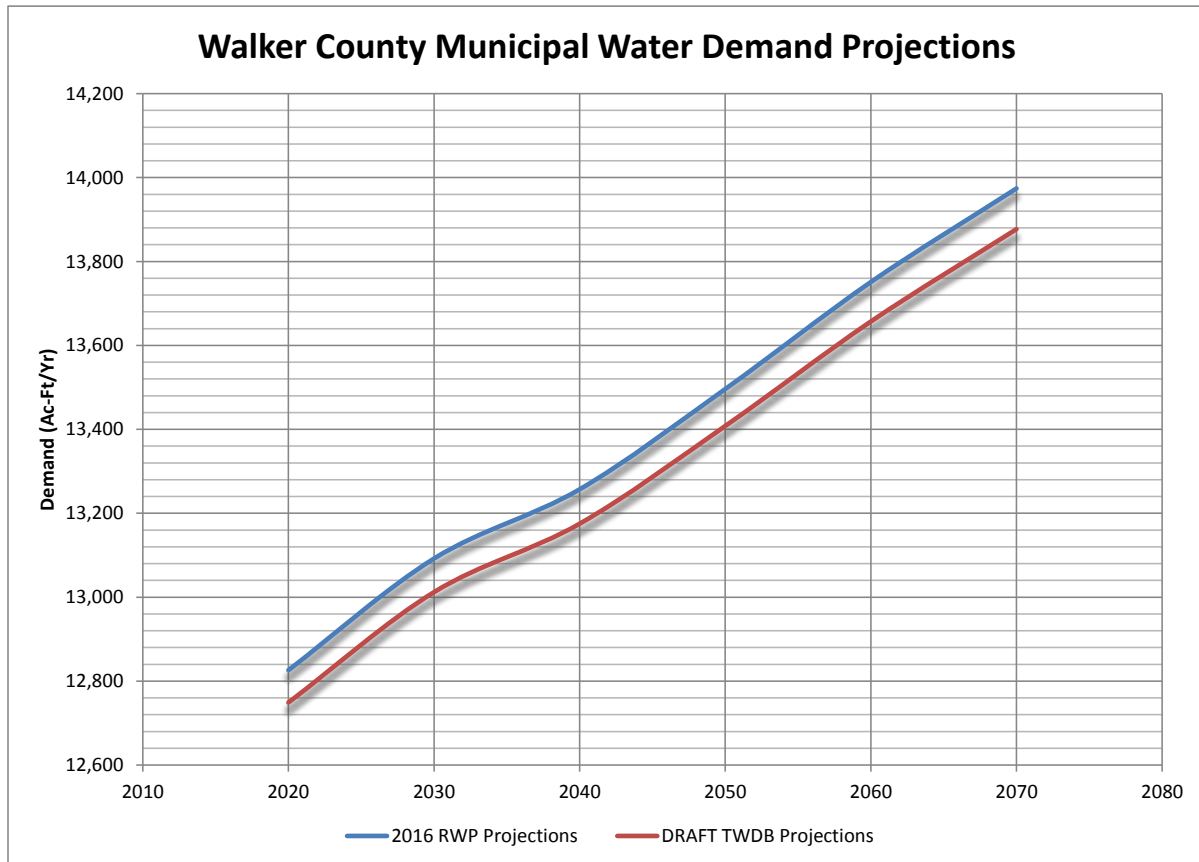
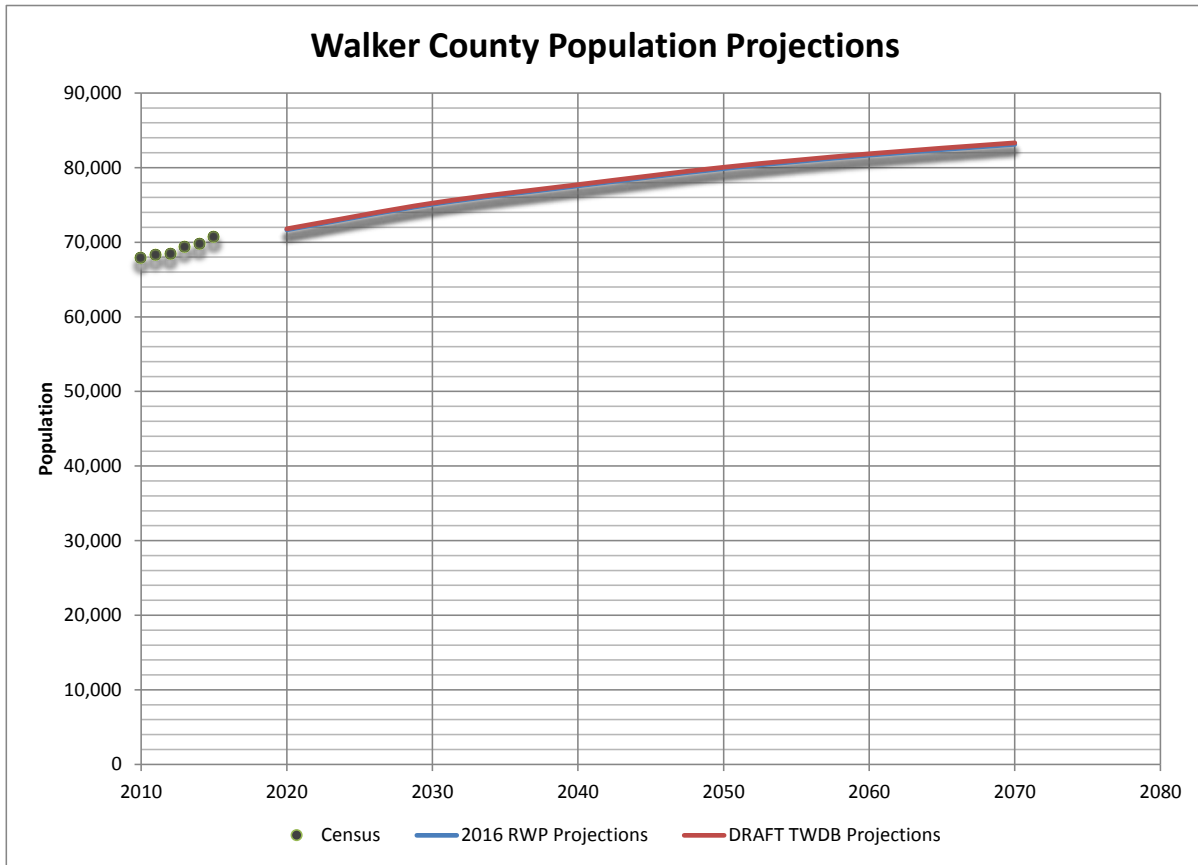
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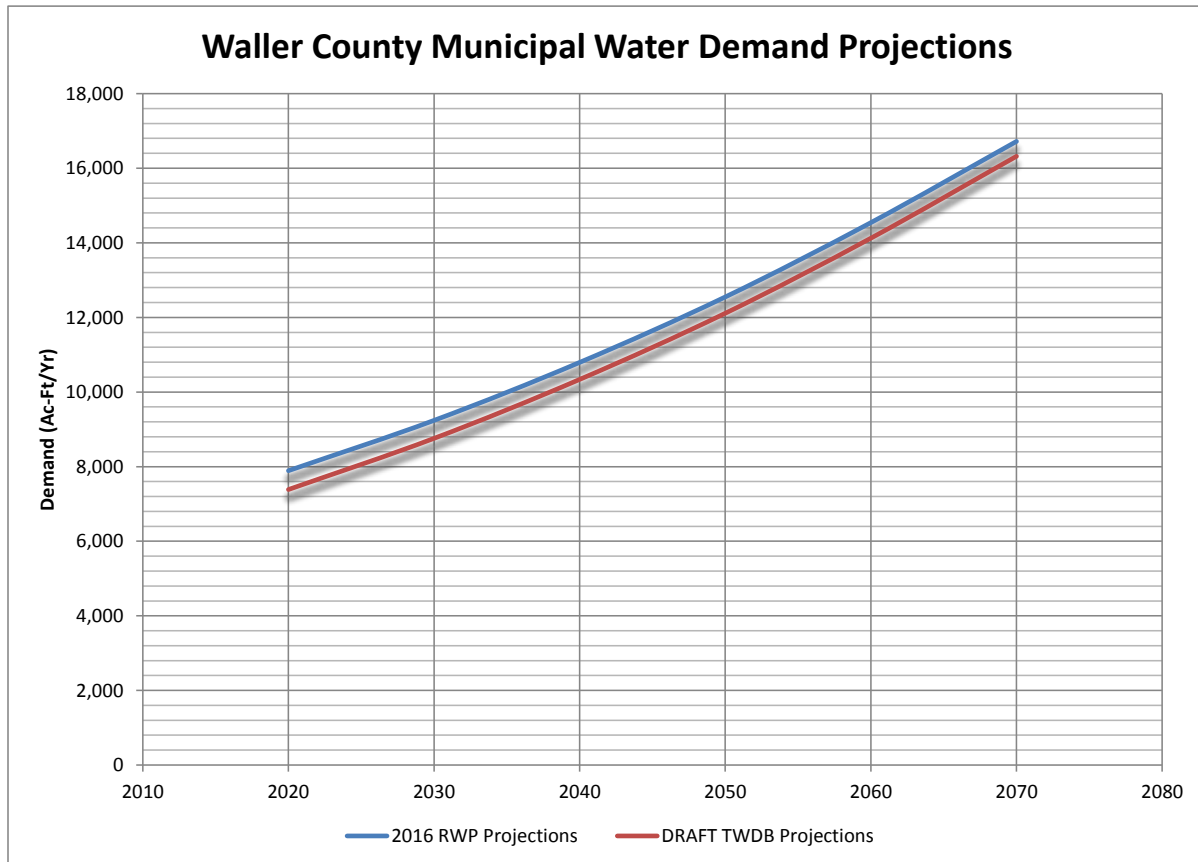
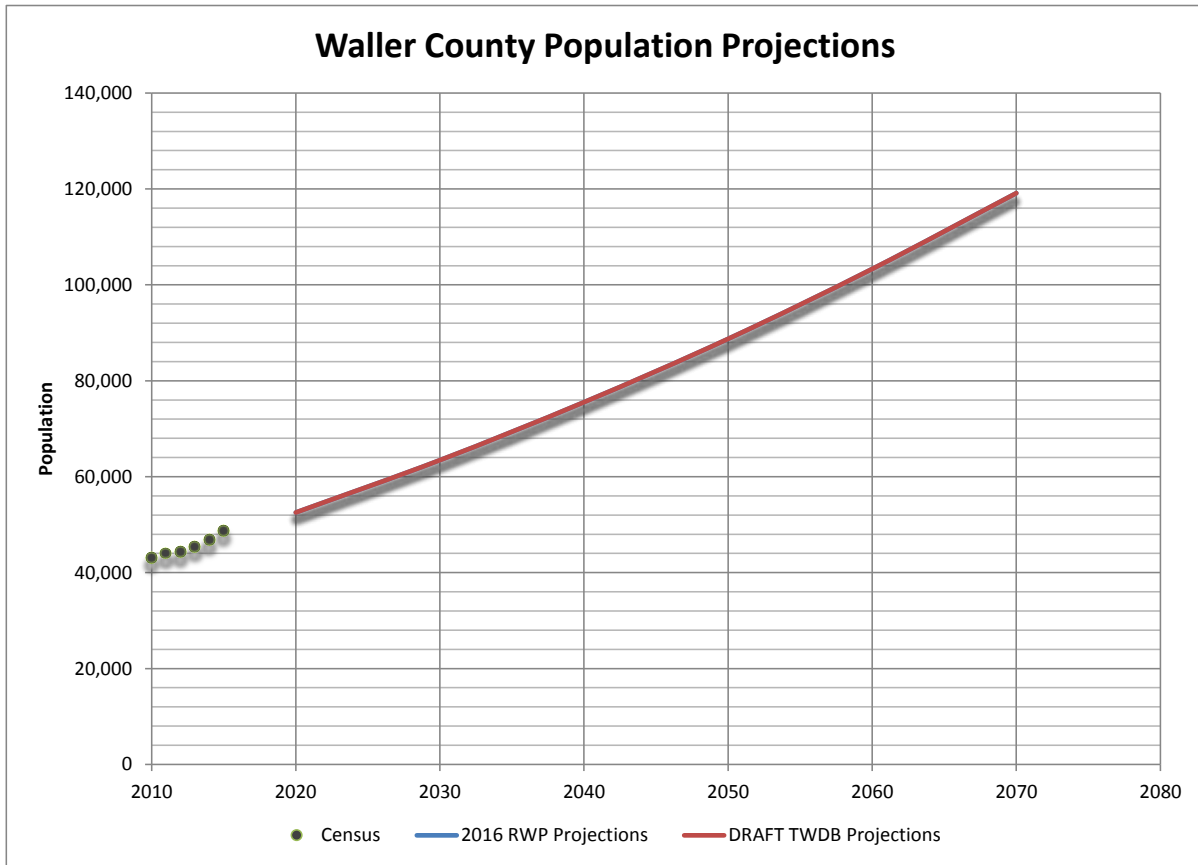
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## Agenda Item 11

Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the Region H Planning Group.

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## **Agenda Item 11**

### **Community Outreach**

- GCWA Drought Planning Task Force  
January 12



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