

REGION H

Water Planning Group

MEETING MATERIALS

November 1, 2017

San Jacinto River Authority

Region H Water Planning Group
10:00 AM Wednesday
November 1, 2017
San Jacinto River Authority Office
1577 Dam Site Rd, Conroe, Texas 77304

AGENDA

1. Introductions.
2. Review and approve minutes of June 7, 2017 meeting.
3. **Receive public comments on specific issues related to agenda items 4 through 14.** (Public comments limited to 3 minutes per speaker)
4. Consider and take action on the selection of Yvonne Forrest as a voting member of the Region H Water Planning Group representing Municipalities.
5. Accept the resignation of Gene Fisseler as a voting member of the Region H Water Planning Group representing Electric Generating Utilities.
6. Receive presentation from Texas Water Development Board on recent legislation impacting the Regional Water Planning process.
7. Discuss requirements regarding Texas Open Meetings Act and Public Information Act training for Regional Water Planning Group members.
8. Receive update from Consultant Team regarding the schedule and milestones for the development of the 2021 Region H Regional Water Plan.
9. Receive update from Consultant Team and Non-Population Demands Committee regarding draft non-municipal demand projections for the 2021 Region H Regional Water Plan.
10. Receive update from Consultant Team and Population Demands Committee regarding draft municipal population and water demand projections for the 2021 Region H Regional Water Plan.
11. Receive update from Consultant Team regarding identification of Major Water Providers for Region H and consider taking action directing the Consultant Team to submit a list of recommended Major Water Providers to the Texas Water Development Board.
12. Discuss meeting sites and consider taking action to designate a list of approved sites for Regional Water Planning Group and committee meetings.
13. Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the Region H Water Planning Group.
14. Agency communications and general information.
15. **Receive public comments.** (Public comments limited to 3 minutes per speaker)
16. Next Meeting: December 6, 2017.
17. 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.

Agenda Item 2

Review and approve minutes of June 7, 2017 meeting.

**REGION H WATER PLANNING GROUP
MINUTES OF REGULAR MEETING
JUNE 7, 2017**

A regular meeting of the Region H Water Planning Group was held at 10:00 a.m., June 7, 2017, at the San Jacinto River Authority General and Administration Building, a notice of said meeting was posted as required by law.

MEMBERS PRESENT: David Bailey, John Bartos, Robert Bruner, David Collinsworth, Mark Evans, Gene Fisseler, Art Henson, Jace Houston, Robert Istre, Ivan Langford, Glenn Lord, Marvin Marcell, Carl Masterson, William Teer, Michael Turco, Kevin Ward, and Pudge Willcox

DESIGNATED ALTERNATES: Alisa Max for John Blount, Mike O'Connell for Bob Hebert, Paul Nelson for Kathy Turner Jones, and Jun Chang for Jimmie Schindewolf

MEMBERS ABSENT: James Comin, John Howard, James Morrison, Ruth Stultz

NON-VOTING MEMBERS PRESENT: Lann Bookout

CONSULTANT TEAM: Jason Afinowicz, Philip Taucer, and Mike Reedy

The meeting was called to order at 10:03 a.m.

1. INTRODUCTIONS

Mr. Evans welcomed Ms. Yvonne Forrest and Ms. Veronica Osegueda, both of the City of Houston, as well as John Burke of the Region K Water Planning Group.

2. REVIEW AND APPROVE MINUTES OF FEBRUARY 28, 2017 MEETING

Mr. Houston clarified a correction to the minutes of February 28, 2017, and made a motion to approve the minutes of February 28, 2017, Region H Water Planning Group meeting, as amended. The motion was seconded by Mr. Bailey with all present voting aye.

3. RECEIVE PUBLIC COMMENTS ON SPECIFIC ISSUES RELATED TO AGENDA ITEMS 4 THROUGH 12

There were no public comments.

4. RECEIVE PRESENTATION FROM TEXAS WATER DEVELOPMENT BOARD ON REVISED 31 TEXAS ADMINISTRATIVE RULES CHAPTER 357

Mr. Bookout provided information related to the revised 31 Texas Administrative Rules, Chapter 357. He stated that the purpose of the 2016 rules revisions were to implement legislative changes, address stakeholder concerns, improve the planning process, increase flexibility in planning requirements,

reduce certain unessential reporting requirements, clarify rules, and refine definitions. Mr. Bookout reviewed the revision process and provided an overview of some of the changes.

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

Mr. Afinowicz provided an update to the 2021 Regional Water Plan schedule referencing various due dates.

6. RECEIVE UPDATE FROM CONSULTANT TEAM REGARDING THE TEXAS WATER DEVELOPMENT BOARD FUNDING OF THE FIFTH ROUND OF REGIONAL WATER PLANNING FOR REGION H AND TAKE ACTION AUTHORIZING THE SAN JACINTO RIVER AUTHORITY TO EXECUTE AMENDED CONTRACTS WITH SUBCONSULTANTS

Mr. Afinowicz explained the process by which funding is obtained from the Texas Water Development Board for the Fifth Round of Regional Water Planning for Region H, stating that amended contracts with subconsultants needed to be executed in order to proceed. Mr. Bartos made a motion to authorize the San Jacinto River Authority to execute amended contracts with subconsultants. The motion was seconded by Mr. Masterson and carried unanimously.

7. 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

Mr. Philip Taucer stated that the non-municipal demand projections were recently released. He provided an overview of the data related to irrigation, livestock, manufacturing, mining, and steam-electric power. Discussion ensued related to the significant changes in demand projections as it related to manufacturing. Mr. Taucer explained that the demand projections could be changed due to various reasons and stated that the deadline to submit the requested changes to TWDB is January 12, 2018.

8. 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

Mr. Taucer explained that coordination with TWDB took place to obtain more information on the process that went into the development of the projections. He stated that at the county and region levels, the census and population projections were very close and are well within the percentage that is recommended by TWDB. He explained that the largest change is related to the definition of WUGs, stating that redistribution among WUGs was a major undertaking for TWDB. Mr. Taucer went on to further explain in detail, the methodologies utilized by TWDB to compile the projections. Finally, he stated that the WUG stakeholder survey will be distributed in the near future.

9. RECEIVE UPDATE FROM CONSULTANT TEAM AND POPULATION DEMANDS COMMITTEE REGARDING THE SUB-WUG PLANNING OPTION AND CONSIDER

TAKING ACTION TO AUTHORIZE THE POPULATION DEMANDS COMMITTEE TO EVALUATE POTENTIAL SUB-WUGS AND SUBMIT REQUESTS FOR SUB-WUGS TO TWDB

Mr. Taucer explained that this planning option was requested by several Water Planning Groups, primarily to account for rural areas. He stated that this option would require additional effort to develop the data and is due to TWDB by September 1, 2017. Mr. Marcell recommended that the Population Demands Committee meet to discuss and assess the sub-WUG planning option. With little discussion, Mr. Fisseler made a motion to authorize the Population Demands Committee to evaluate the inclusion of potential sub-WUGs for possible submittal of same to TWDB. The motion was seconded by Mr. Masterson and carried unanimously.

10. RECEIVE UPDATE FROM CONSULTANT TEAM REGARDING IDENTIFICATION OF MAJOR WATER PROVIDERS FOR REGION H AND CONSIDER TAKING ACTION TO SUBMIT A LIST OF RECOMMENDED MAJOR WATER PROVIDERS TO TWDB

Mr. Taucer stated that the Major Water Providers (MWP) is a new concept for the Fifth Cycle in which it largely replaces the Wholesale Water Provider (WWP) role. Further, he stated that this determination is made solely by each Water Planning Group. Mr. Taucer reviewed the existing WWPs and discussed the possibility of adding large suppliers/large GRP sponsors. Discussion ensued related to the determination of a threshold to further define MWPs. Further discussion was had related to producing a logical hierarchy to ensure a sensible roll up as related to the addition of other suppliers. Mr. Evans recommended that the Population Demands Committee resume discussion and provide a recommendation to the Water Planning Group at the next scheduled meeting.

11. RECEIVE REPORT REGARDING RECENT UPCOMING ACTIVITIES RELATED TO COMMUNICATIONS AND OUTREACH EFFORTS ON BEHALF OF THE REGION H PLANNING GROUP

Mr. Evans stated that he attended the Lower Brazos River Coalition meeting on May 31, 2017.

12. AGENCY COMMUNICATIONS AND GENERAL INFORMATION

Mr. Bartos announced that the Trinity and San Jacinto River Basins and Galveston Bay BBASC will meet at 1:00 p.m., June 7, 2017, at the San Jacinto River Authority.

13. RECEIVE PUBLIC COMMENTS

There were no public comments.

14. NEXT MEETING

Mr. Evans announced that the next meeting will take place on September 6, 2017.

15. ADJOURN

Without objection, the meeting was adjourned at 11:36 a.m.

Agenda Item 4

Consider and take action on the selection of Yvonne Forrest as a voting member of the Region H Water Planning Group representing Municipalities.

Agenda Item 4

Representative for Municipalities

Action:

Approve selection of Yvonne Forrest as a voting member of the Region H Water Planning Group representing Municipalities.





CITY OF HOUSTON

Department of Public Works and Engineering

Sylvester Turner

Mayor

Karun Sreerama, MBA, PhD, PE
Director
P.O. Box 1562
Houston, Texas 77251-1562

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July 24, 2017

Mr. Mark Evans
Planning and Governmental Affairs Director
North Harris County Regional Water Authority
3648 Cypress Creek Pkwy #110
Houston, TX 77068

RE: Municipal Representative for Region H

Mr. Evans,

This is a request to place my name in the pool for consideration to serve on the Region H Water Planning Group municipal vacancy as a representative for the City of Houston.

I am confident that my experience in the Water environment will be an asset to the Region H Water Planning Group. As a City of Houston representative, I am committing to dedicate my time in serving the Planning Group and attend regularly the meetings and committees which I could be appointed.

Again, thank you for your consideration and I am sincerely looking forward to working with you and your team.

Please don't hesitate to contact me in case you have any questions at 832-395-2847.

Sincerely,

Yvonne W. Forrest
Acting Deputy Director
Houston Water

Enclosure: Yvonne Forrest's Bio

Yvonne W. Forrest

Acting Deputy Director

Houston Water

City of Houston| Department of Public Works and Engineering

Contact Information:

Houston Water

City of Houston| Department of Public Works and Engineering

611 Walker, 18th Floor

Houston, Texas 77002

Office: (832) 395-2847

Email: Yvonne.Forrest@houstontx.gov

Biographical Information:

As Acting Deputy Director of the Department of Public Works and Engineering, Ms. Forrest is responsible for the operation and maintenance of City of Houston's regional water and wastewater utility systems. She also oversees the Infrastructure planning and Business Services. Houston is the fourth largest city in the United States and City's public water and wastewater system is one of the largest utilities within the United States. She manages a staff of 1,540 with an annual capital and operations and maintenance budget of over \$657 million.

Additionally, Ms. Forrest services as Senior Assistant Director for the Department's Drinking Water Operations branch, which is comprised of three surface water purification plants, 100 groundwater pumping stations, over 7,000 miles of water mains, 59,000 fire hydrants and 159,000 valves.

Ms. Forrest represents the City of Houston on AWWA Water Utility Council and act as a liaison to other City of Houston departments, customers, regulating agencies and elected officials.

Prior to her career in public service, Ms. Forrest spent 15 years, as an Engineer, in the private sector developing processes to ensure compliance with environmental regulations, permits and corporate standards. She holds a Bachelor of Science in Chemical Engineering from University of South Carolina.

Agenda Item 5

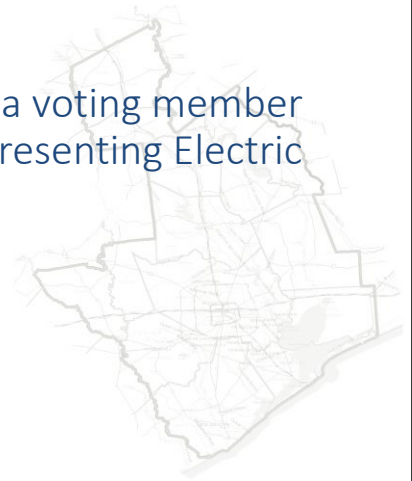
Accept the resignation of Gene Fisseler as a voting member of the Region H Water Planning Group representing Electric Generating Utilities.

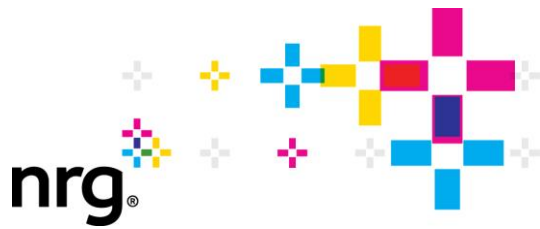
Agenda Item 5

Representative for Electric Generating Utilities

Action:

Accept the resignation of Gene Fisseler as a voting member of the Region H Water Planning Group representing Electric Generating Utilities.





NRG Energy, Inc.
1000 Main Street
Houston, Texas 77002

August 23, 2017

Judge Mark Evans, Chair
Region H Water Planning Group
San Jacinto River Authority Administrative Offices
1577 Dam Site Road
Conroe, Texas 77304

Dear Mark,

As we have discussed, I am leaving NRG Energy in September and it is appropriate for me at this time to resign my seat on the Region H Water Planning Group. It has been my pleasure represent the steam electric generation sector and to serve with you and the other Region H members over the past 5 years. I appreciate – and commend you on – the strong leadership I’ve observed you provide this thoughtful group over the past five years. I’m certain the talented and dedicated Region H members will continue the good work of developing a regional water plan in support of the Texas Water Plan.

In addition, I’d like to recommend Craig Eckberg, NRG’s regional environmental director, to represent the steam electric generation segment. Upon review of his qualifications, I’m certain you’ll agree with me that, in light of his role at NRG, Craig is well qualified to contribute to the group’s work.

Please consider my resignation effective immediately.

If you have any questions or require additional information, please contact Craig at 832.357.5291 or craig.eckberg@nrg.com.

Very truly yours,

Gene Fisseler
Director, Water Resources

copy: Jace Houston, San Jacinto River Authority

Agenda Item 6

Receive presentation from Texas Water Development Board on recent legislation impacting the Regional Water Planning process.

The 85th Texas Legislature: Updates relevant to regional water planning

Lann Bookout
Water Use, Projections, & Planning
Texas Water Development Board
August 16, 2017

www.twdb.texas.gov  www.facebook.com/twdbboard  @twdb

Texas Water
Development Board



Legislative Update

During the regular session, the Legislature passed three bills relevant to regional water planning:

- SB 347
- HB 2215
- SB 1511

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Texas Water
Development Board



Senate Bill 347

- **Author:** Kirk Watson
- **Content:** Stipulates that each regional water planning group (RWPG), committee, and subcommittee of the RWPG are subject to the Open Meetings Act and the Public Information Act (Government Code, Chapters 551 & 552)
- **Effective:** September 1, 2017

Senate Bill 347

- **Implementation:**
 - Links to the Office of Attorney General's handbooks and training videos have been posted on the TWDB's 5th cycle working documents webpage under Task 10
 - Open Meetings Act training requirements apply to voting members of the RWPG (*this is a TWDB interpretation and RWPG members may wish to consult with attorneys from their organizations to analyze the legislation*)

House Bill 2215

- **Author:** Four Price
- **Content:** Synchs the schedules of the State Water Plan and the desired future conditions (DFC) process
 - Groundwater conservation districts to propose DFCs by 5/1/21 and adopt the DFCs by 1/5/22
 - Subsequent DFCs to be adopted before the end of each future five-year cycle

House Bill 2215

- **Effective:** Immediately
- **Implementation:** Should result in new modeled available groundwater values becoming available earlier in each planning cycle

Note: This was a recommendation in the TWDB Legislative Priorities Report for the 85th Texas Legislative Session

Senate Bill 1511

- **Author:** Charles Perry
- **Content:**
 1. Adds a non-voting member to each RWPG from the Texas State Soil and Water Conservation Board
 2. Requires that certain planning group activities be held at a location “readily accessible to the public” within the planning area

Senate Bill 1511

- **Content** (*continued*):
 3. Directs RWPGs to amend their approved plan to exclude any strategy or project that becomes infeasible, and consider recommending a feasible strategy to address the same need.
 4. Allows RWPGs to implement simplified planning every other cycle if there are no significant changes in water availability, supplies, or demands in the region based upon the RWPG’s own initial analysis

Senate Bill 1511

- **Content** (*continued*):
 5. Directs the TWDB to report on the prioritization and implementation of SWIFT projects in the State Water Plan.
- **Effective:** September 1, 2017
- **Implementation:** Several items for RWPGs to consider; TWDB will begin a rule revision process to address statutory changes

Questions?

Lann Bookout

Project Manager
Water Use, Projections, & Planning
Texas Water Development Board
Lann.bookout@twdb.texas.gov
(512)936-9439

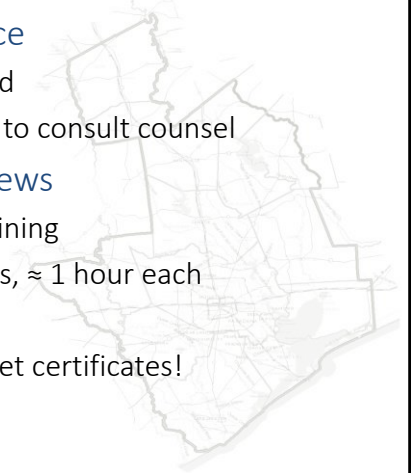
Agenda Item 7

Discuss requirements regarding Texas Open Meetings Act and Public Information Act training for Regional Water Planning Group members.

Agenda Item 7 RWPG Training

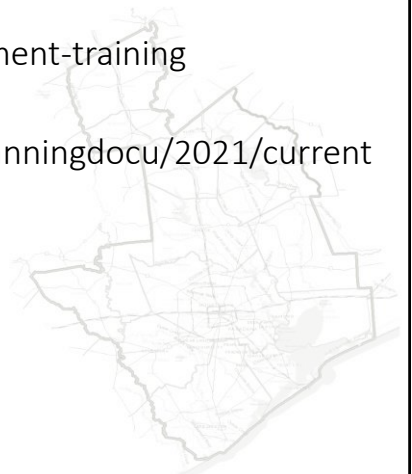


- SB 347 applies TOMA / PIA to RWPGs
- TWDB advice
 - Get trained
 - May want to consult counsel
- The good news
 - Online training
 - Two videos, ≈ 1 hour each
 - Free
 - Don't forget certificates!



Agenda Item 7 RWPG Training

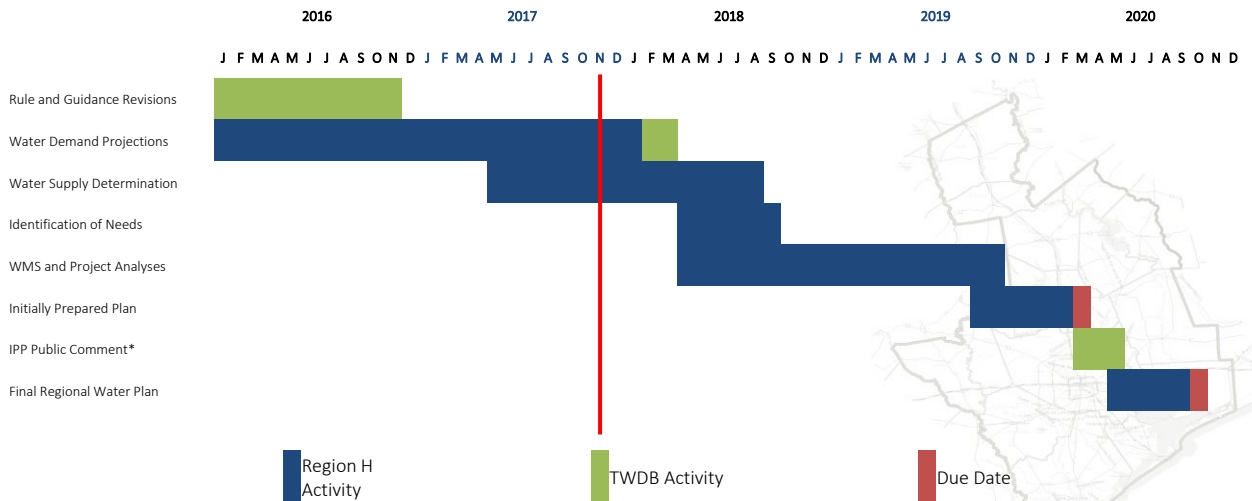
- Where to go:
 - <https://texasattorneygeneral.gov/og/open-government-training>
 - http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/current_docs.asp



Agenda Item 8

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

Agenda Item 8 2021 RWP Schedule



*Region H accepts public comment throughout the planning cycle and at each RWPG and committee meeting.

Agenda Item 8 2021 RWP Schedule

| Date | Scheduled Events/Tasks |
|---------|---|
| 11/2017 | RWPG Meeting |
| 12/2017 | RWPG Meeting |
| 01/2018 | Estimated due date for projection adjustment requests to TWDB |
| 03/2018 | Estimated adoption date for projections |
| 09/2018 | DUE DATE: Technical Memorandum |
| 03/2020 | DUE DATE: Initially Prepared Plan |
| 10/2020 | DUE DATE: FINAL RWP |

Agenda Item 8 2021 RWP Schedule

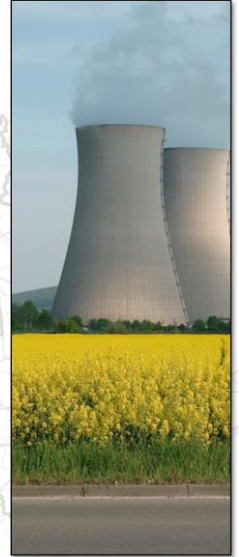
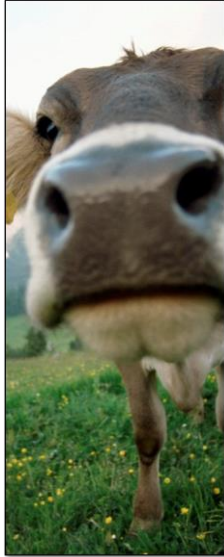


- Ramping up fast
- Population / non-population – projections
- Surface water supply – Exception requests and analyses
- Groundwater – GMA coordination and MAG Peak Factor
- WMS – Focus areas and scoping

Agenda Item 9

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

Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands

- Discussed available data with RWPG in June
- Additional projections and support data from TWDB
- Review by Non-Population Demands Committee
- Local stakeholder data and expertise
- Final RWPG decision by December meeting



Agenda Item 9 Non-Population Demands



2016 RWP

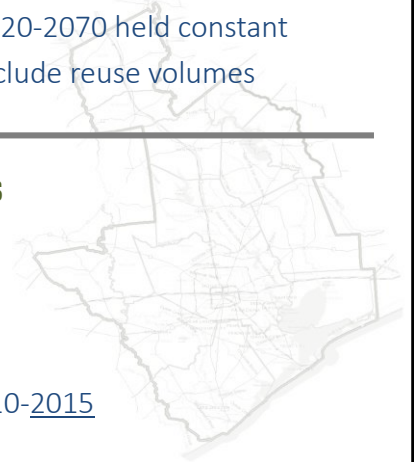
- Max 2005-2009 use
- FSA data, per-acre use
- 2020-2070 held constant

2021 RWP

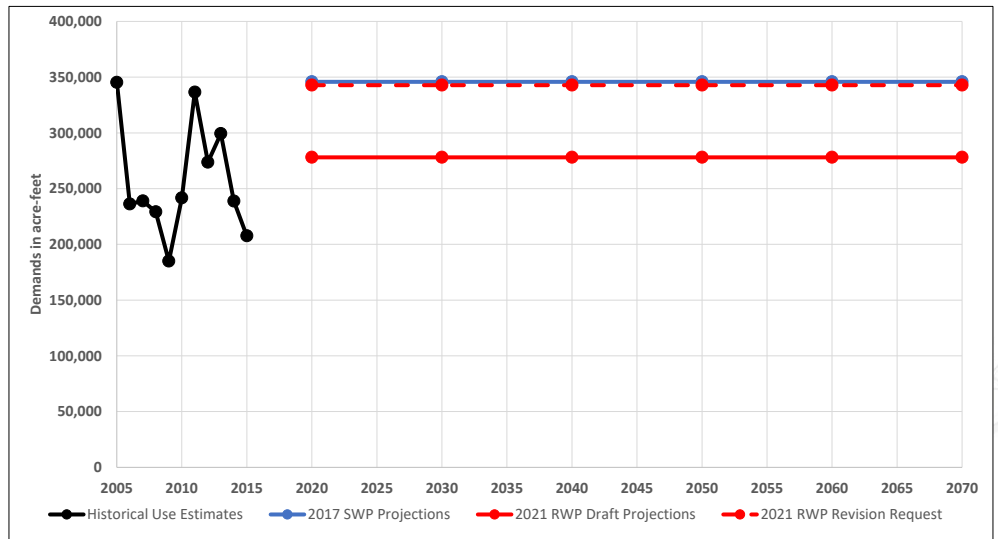
- Average of 2010-2014 use
- 2020-2070 held constant
- Include reuse volumes

Committee Analysis and Recommendations

- Average not reflective of dry year
- Artificial lowering - supply curtailment
- Should include 2015
- Up to 4 of 5 years above average
- Use the second highest demand from 2010-2015



Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands



2016 RWP

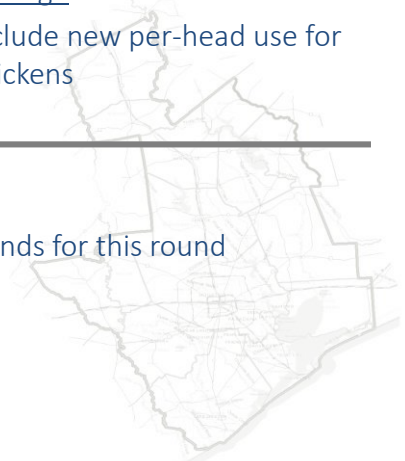
- Average 2005-2009 use
- TASS data, per-head use
- Trend from 2011 RWP

2021 RWP

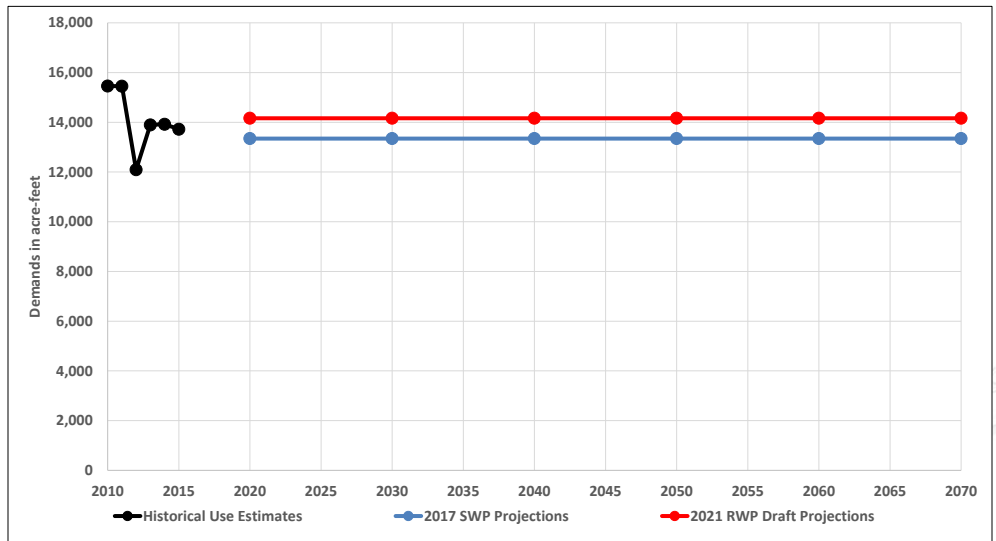
- Average of 2009-2014 use
- Include new per-head use for chickens

Committee Analysis and Recommendations

- No requested revisions for livestock demands for this round



Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands



2016 RWP

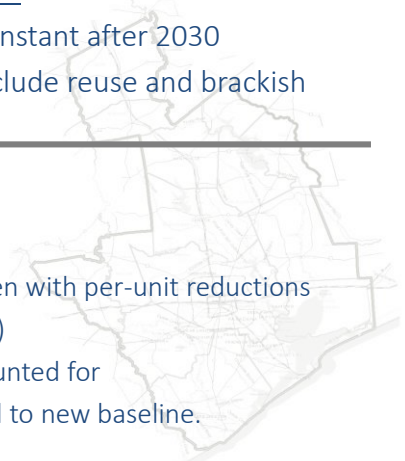
- 2004-2008 + under-survey adj.
- Trend from 2011 RWP
- 2003 contracted report

2021 RWP

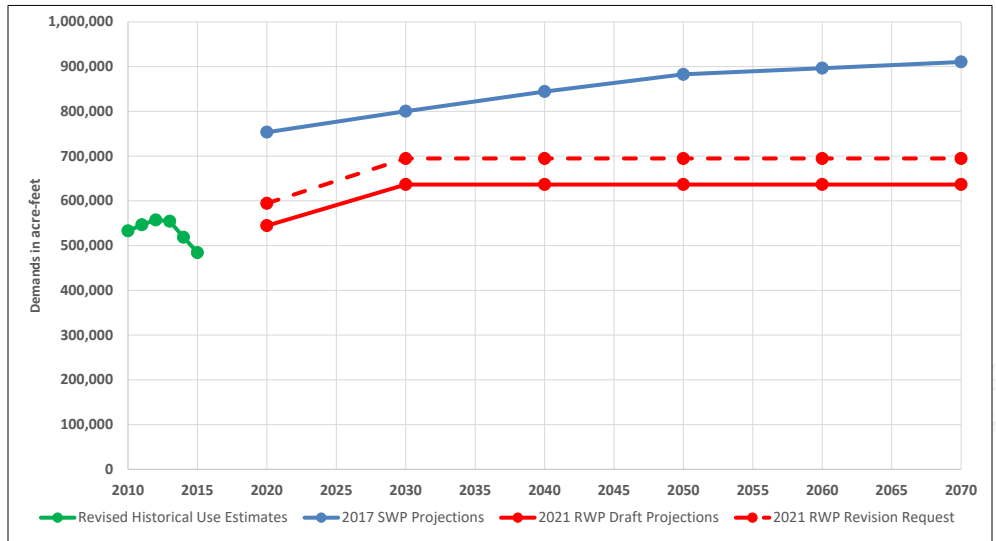
- Max of 2010-2014 use
- Constant after 2030
- Include reuse and brackish

Committee Analysis and Recommendations

- Reviewed with stakeholder data
- Level demand not reflective of Region H – even with per-unit reductions
- Adjust historical for Galveston County (GCWA)
- New baseline - Use max 2010-2015 + unaccounted for
- TWDB growth rate from 2020 to 2030 applied to new baseline.



Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands



2016 RWP

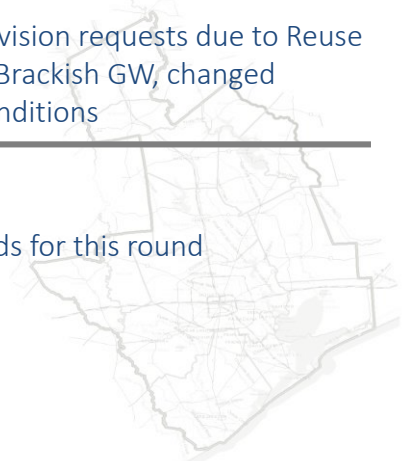
- 2011 BEG Report
- 2012 update
- O&G production, land/road development

2021 RWP

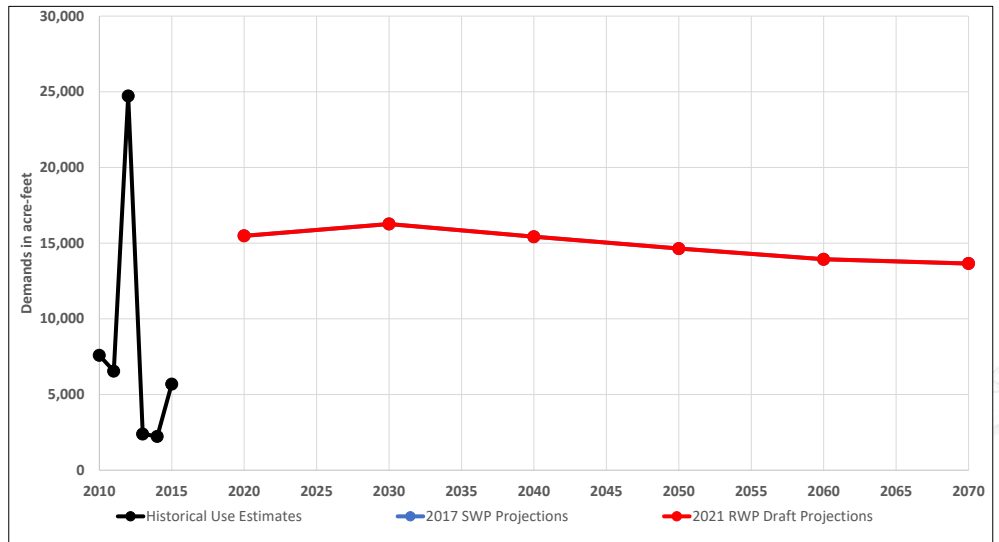
- Retained from 2016 RWP
- Revision requests due to Reuse & Brackish GW, changed conditions

Committee Analysis and Recommendations

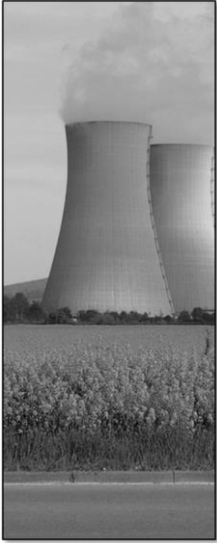
- No requested revisions for mining demands for this round



Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands



2016 RWP

- 2008 BEG report
- Facility changes
- Regional requests

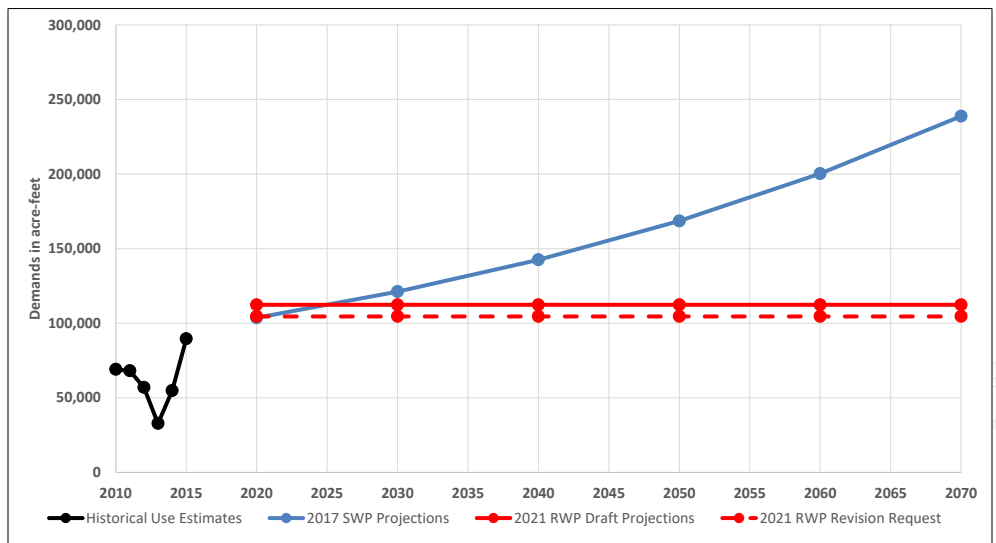
2021 RWP

- Max 2010-2014 use + additions/ retirements
- Held constant 2020-2070
- Includes reuse

Committee Analysis and Recommendations

- Individual facilities may not reach max in same year
- Growing electricity demands in Region H
- Use max historical use (2010-2015) by generation facility and summing the total for the county
- All cogeneration should be removed from steam electric power projections

Agenda Item 9 Non-Population Demands



Agenda Item 9 Non-Population Demands



- Thoughts?
 - Reasonable changes?
 - Additional revisions?
- Must be to TWDB by January 12th
- Action at December RWPG meeting

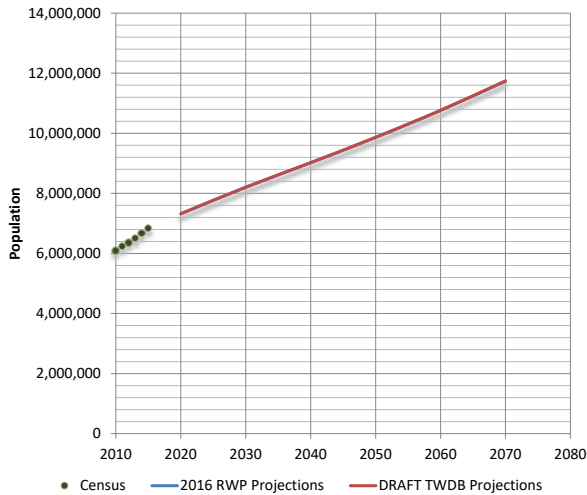


Agenda Item 10

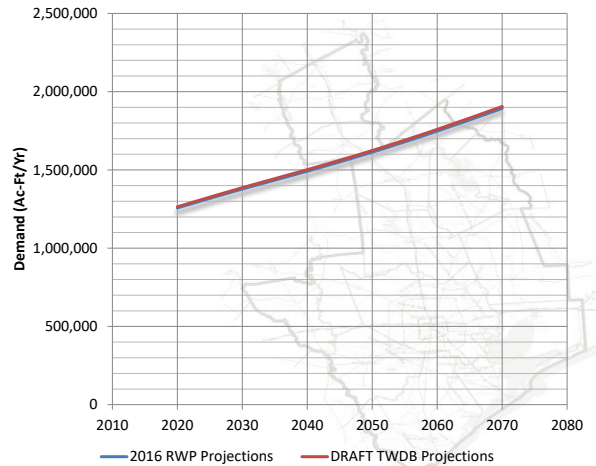
Receive update from Consultant Team and Population Demands Committee regarding draft municipal population and water demand projections for the 2021 Region H Regional Water Plan.

Agenda Item 10 Population Demands

Total Region H Population Projections



Total Region H Municipal Water Demand Projections



Agenda Item 10 Population Demands

- Discussed with RWPG in June
- Population Demands Committee
 - Evaluate approach
 - Identify possible revisions
- WUG Survey
 - 342 WUGs & 84 responses (24.6%)
 - 73% of named WUG population
 - 77% of named WUG demand
 - New WUGs
 - MUDs responding
 - Revision requests

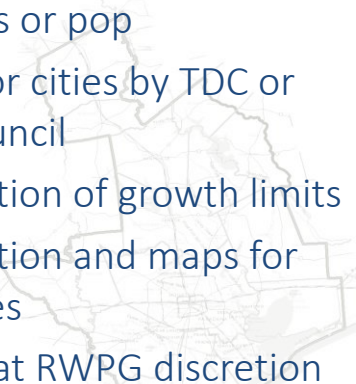


Agenda Item 10 Population Demands

Criteria for Population Adjustment

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

Data Required

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

Agenda Item 10 Population Demands

Criteria for Per-Capita Adjustment

- Different year better fit
- Data errors
- Temporary constraints
- Change in rural trend
- Different fixture rate

Data Required

- Production and sales
 - Temporary infrastructure doc.
 - Drought indices
 - Water efficient fixture records
 - Rural trend data
 - Other data at RWPG discretion
- 

Agenda Item 10 Population Demands

Potential Revisions

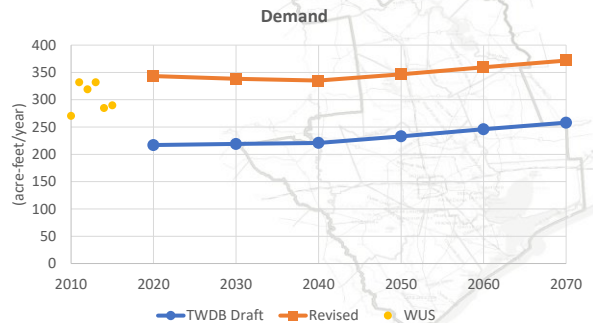
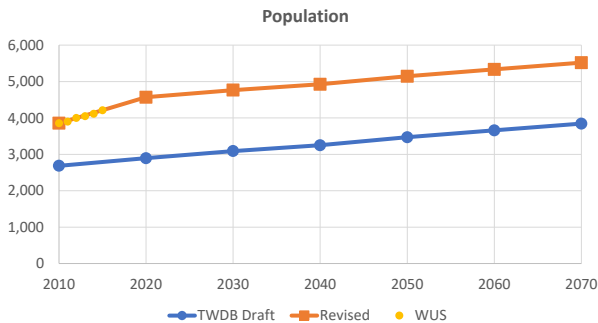
- Concord-Robbins WSC
- Fort Bend County MUD 121
- Fort Bend County MUD 129
- Fort Bend County MUD 140
- Fort Bend County MUD 187
- First Colony MUD 9
- Flo Community WSC
- Friendswood
- Fulshear
- Galveston County WCID 1
- Harris County WCID 1
- Harris County WCID 74
- MSEC Enterprises
- Pearland
- Phelps SUD
- Sugar Land



Agenda Item 10 Population Demands

Concord-Robbins WSC

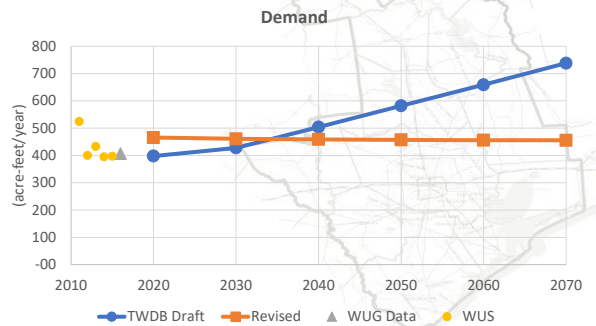
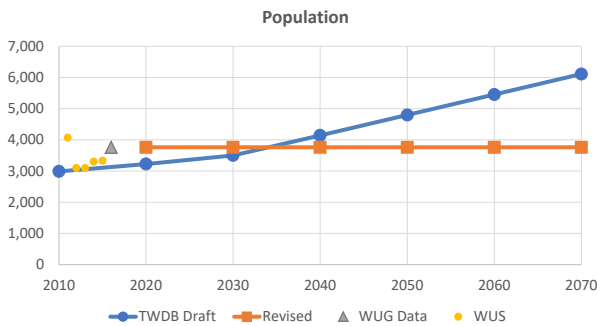
- Shift curve upward to corrected 2015 from WUS
- After 2020, maintaining curve shape



Agenda Item 10 Population Demands

Fort Bend County MUD 121

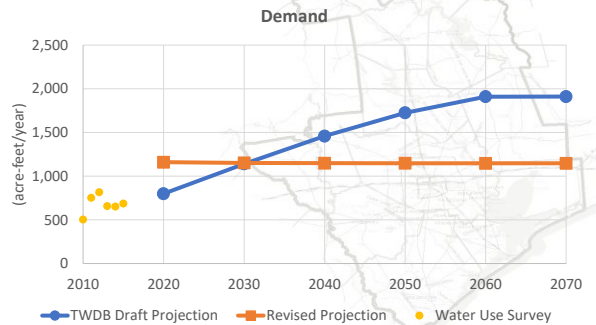
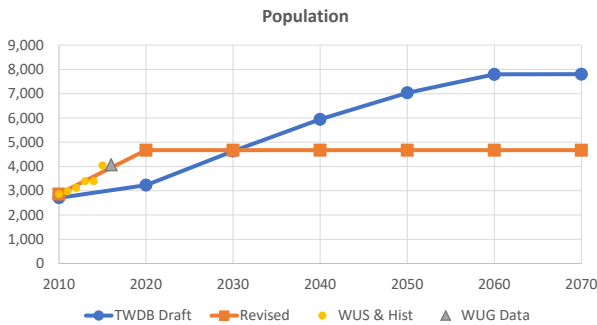
- Historical data from WUG
- Already built out



Agenda Item 10 Population Demands

Fort Bend County MUD 129

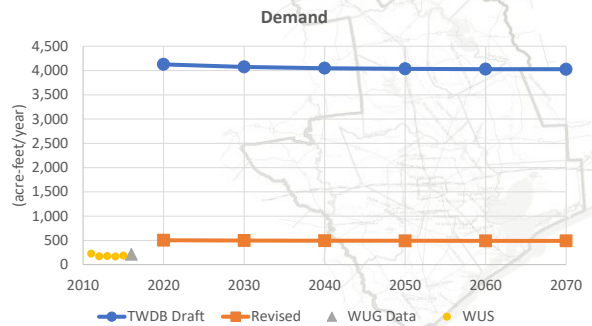
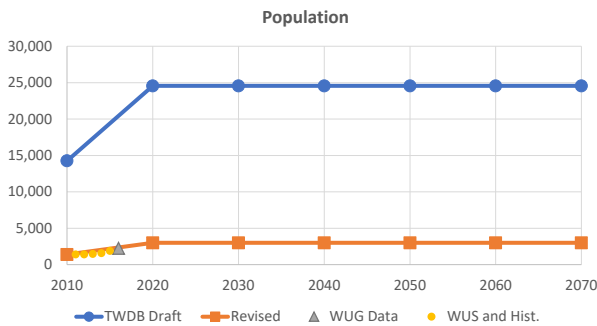
- Adjust near-term from WUS and WUG data
- WUG projects buildout pop. of 4,671 by 2020



Agenda Item 10 Population Demands

Fort Bend County MUD 140

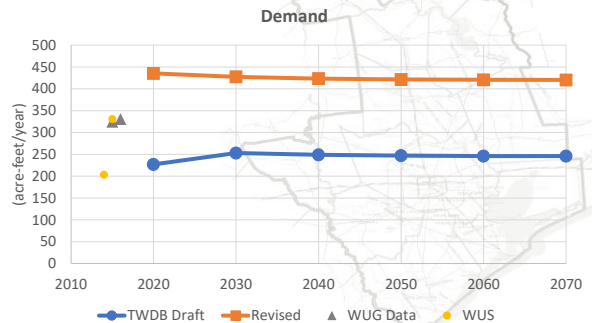
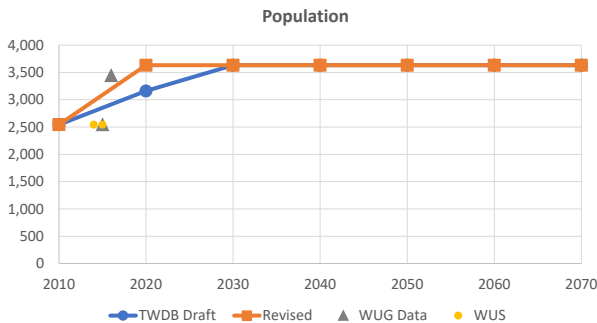
- Issue identified during RWPG review
- Adjust based on WUS and WUG data
- WUG projects buildout pop. of 3,000 by 2020



Agenda Item 10 Population Demands

Fort Bend County MUD 187

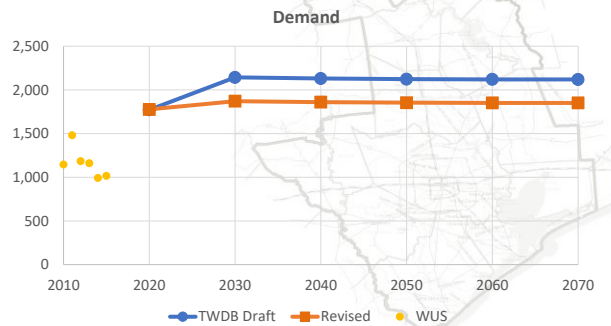
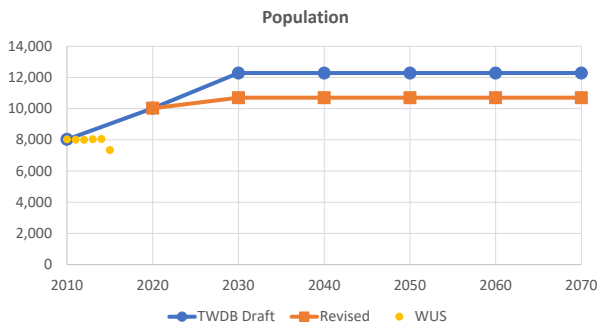
- Adjust based on WUG data – recent growth
- WUG projects buildout within the next year
- Using 2015 WUG data to estimate per-capita – rapid growth as proxy for dry year



Agenda Item 10 Population Demands

First Colony MUD 9

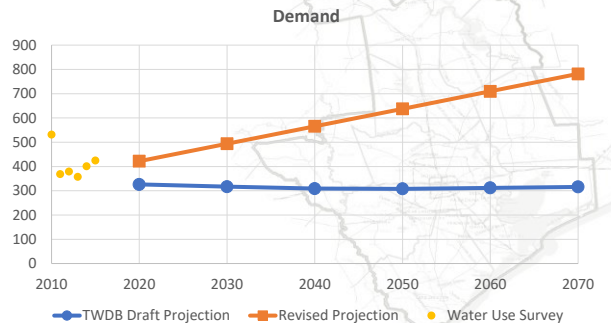
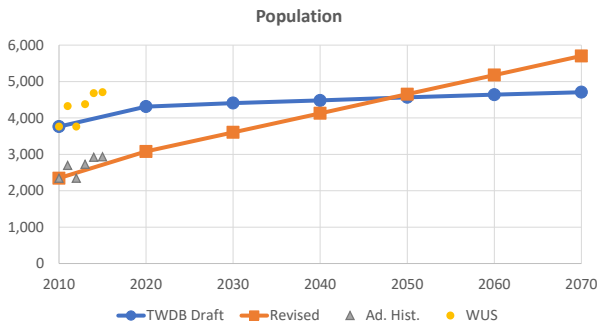
- Nearly built out
- WUG projects max pop. of 10,700



Agenda Item 10 Population Demands

Flo Community WSC

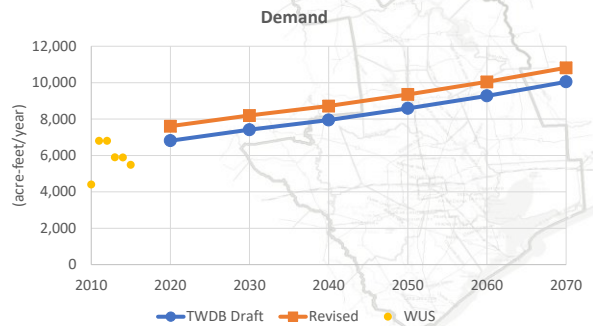
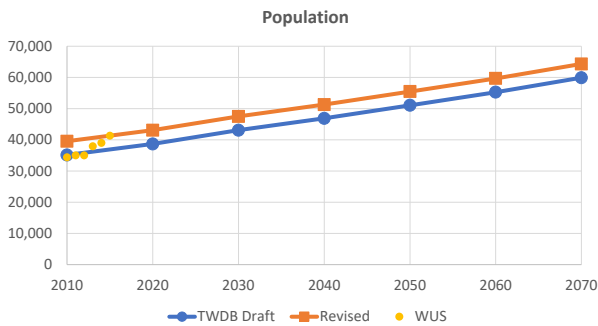
- WUG study shows low per-connection pop (1.87) – adjusting down
- Continuing connections/year at higher 2.5 per-connection pop
- Adjusted 2011 pop to determine per-capita demand



Agenda Item 10 Population Demands

Friendswood

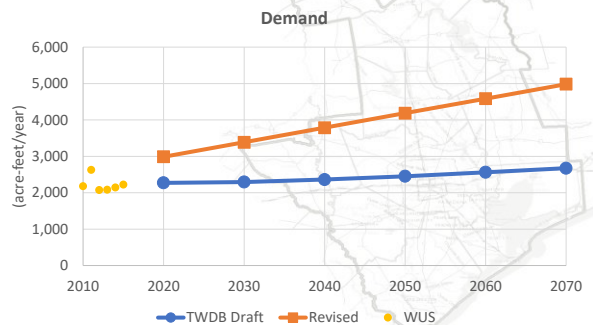
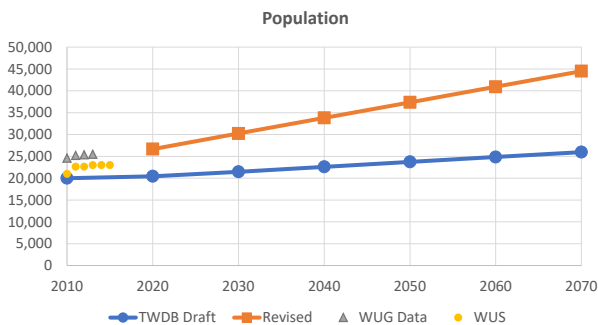
- 2010-2015 growth exceeds projection
- No addl. data – shifting curve upward



Agenda Item 10 Population Demands

Galveston County WCID 1

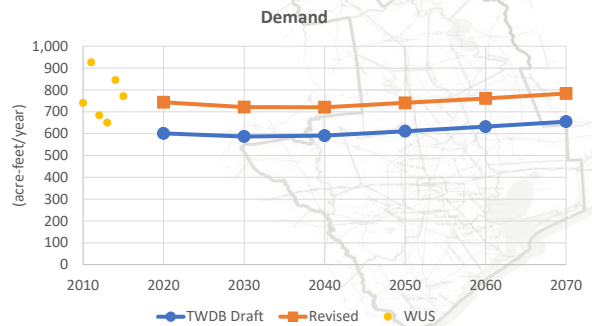
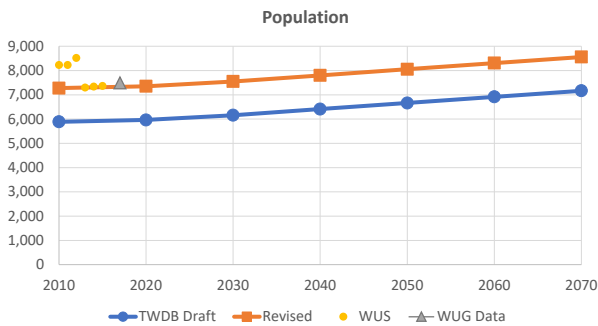
- WUG study and historical data
- Shifting curve upward w/ adjusted growth rate



Agenda Item 10 Population Demands

Harris County WCID 1

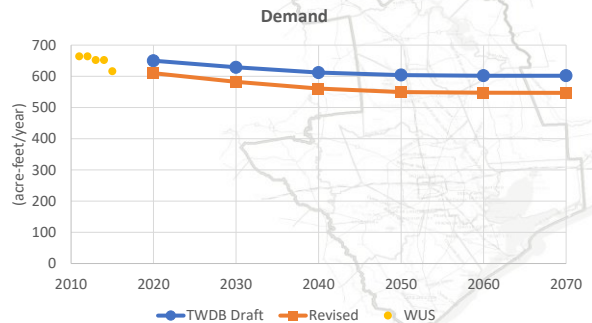
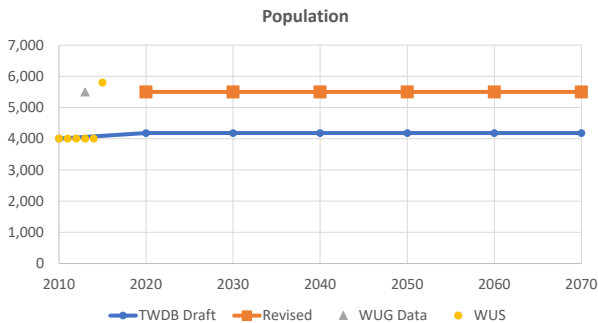
- WUS and WUG data exceed projection
- Shift curve upward



Agenda Item 10 Population Demands

Harris County WCID 74

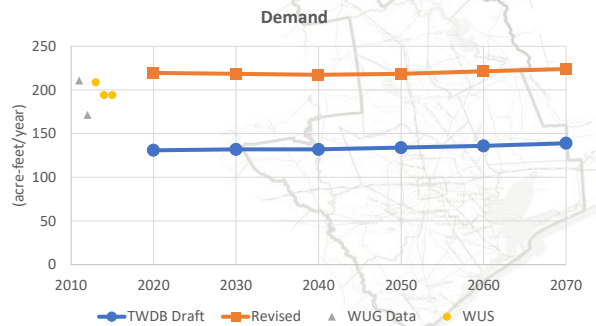
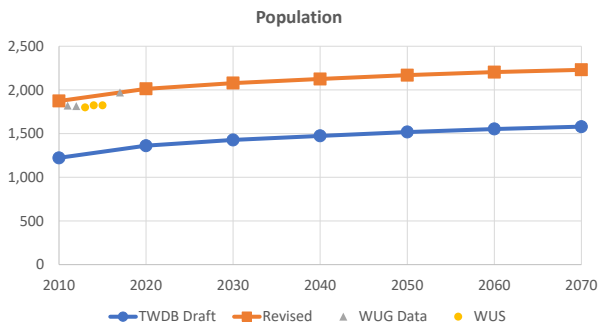
- Adjusting based on WUG data – differs from WUS
- Nearly built out
- Adjusted 2011 pop to determine per-capita demand



Agenda Item 10 Population Demands

Phelps SUD

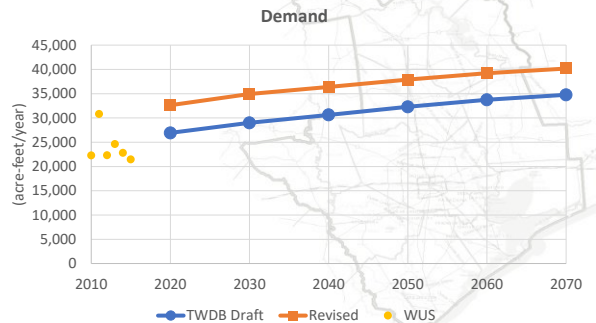
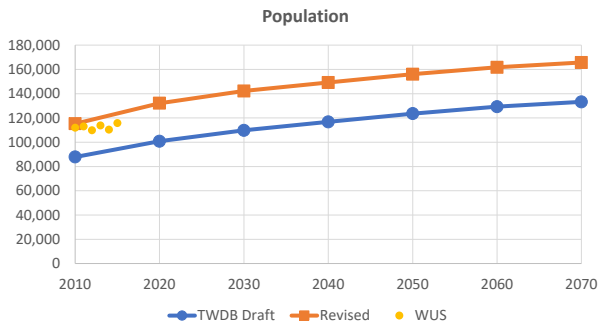
- Adjusting based on WUS and WUG data
- Adjusted WUG 2011 pop to determine per-capita demand



Agenda Item 10 Population Demands

Sugar Land

- Incorporating Greatwood CRU and New Territory WUGs
- Minor adjustment to Greatwood population
- Composite baseline per-capita demand



Agenda Item 10 Population Demands

- Next Steps
 - Continued TWDB coordination
 - Population-Demands Committee
 - Public input at Dec. RWPG meeting
 - Comment period – early notice
- Due to TWDB by January 12th



Agenda Item 11

Receive update from Consultant Team regarding identification of Major Water Providers for Region H and consider taking action directing the Consultant Team to submit a list of recommended Major Water Providers to the Texas Water Development Board.

Agenda Item 11 Major Water Providers



- Largely replaces WWP role
- Key significance to supplies
 - Not limited to first level suppliers
 - Critical links in supply chain
- Determined by RWPG
- Briefly discussed with RWPG
- Considered by Population and Non-Population Committees

Agenda Item 11 Major Water Providers



- Supply volume best metric
- Not just one year or just current
- For legacy WWPs & municipal WUGs
 - 2016 RWP data
 - Post-WMS self-supply and transfers
- For new municipal WUGs
 - Draft TWDB projections
 - Maximum demand
- Look for break points

Agenda Item 11 Major Water Providers



Agenda Item 11 Major Water Providers

Action:

Direct the Consultant Team to submit a list of recommended Major Water Providers to the Texas Water Development Board.



Agenda Item 12

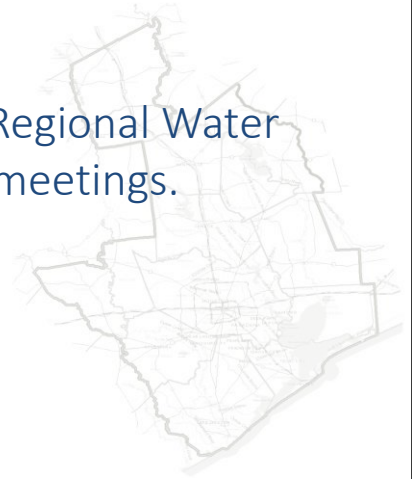
Discuss meeting sites and consider taking action to designate a list of approved sites for Regional Water Planning Group and committee meetings.

Agenda Item 12

Designated Meeting Sites

Action:

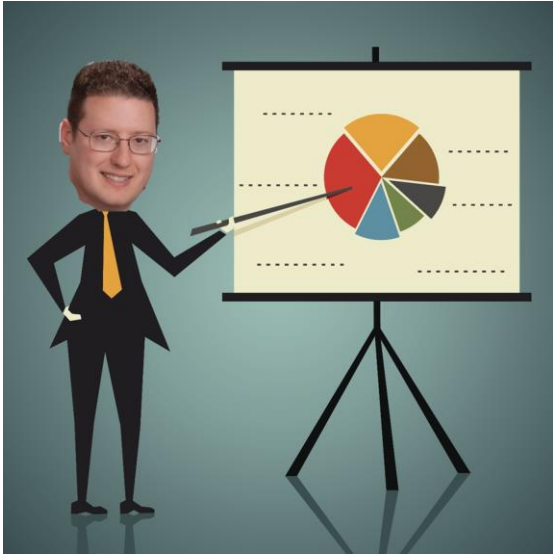
Designate a list of approved sites for Regional Water Planning Group and committee meetings.



Agenda Item 13

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

Agenda Item 13
Community Outreach



***ACCEPTING
YOUR
HOLIDAY
PARTY
BOOKINGS!***



Agenda Item 14

Agency communications and general information.

Loss of 350 miles of Great Plains streams causing changes in aquatic food web

Date: August 2, 2017

Source: Kansas State University

Summary: The food web in Great Plains streams could be unraveling. A decrease in Great Plains streams, fed by decreasing ground water, is changing the aquatic food web.

FULL STORY



A comparison of a section of the Arikaree River in northwest Kansas in 2006 on the left and in 1996 on the right shows the decreased water flow.

Credit: Photos courtesy of Ryan Waters, Kansas Department of Wildlife, Parks and Tourism.

The food web in Great Plains streams could be unraveling, according to a Kansas State University ecologist.

Keith Gido, professor of biology, and Josh Perkin, a Kansas State University alumnus, recently published "Groundwater declines are linked to changes in Great Plains stream fish assemblages" in the *Proceedings of the National Academy of Sciences*. The research maps the loss of stream habitat for many small fish in the Great Plains region and attributes it to declining groundwater sources.

"This is one of the first examples that links groundwater depletion to changes in the biotic communities of the river," Gido said. "We've lost more than 350 miles of stream in the last 65 years because of a reduction in the groundwater, and we expect we will lose another 180 miles of stream by 2060."

According to the research, the reduction of the region's streams is changing the fish community. Several species of fish that were once plentiful in the Great Plains and serve an important role in the food web are no longer found in the area.

"One of our main findings is a transformation of the fish community," Gido said. "We are seeing fish communities change from species that are adapted to large, free-flowing rivers to species that occupy small streams with isolated habitats."

The fish that have already been lost or are most at risk in Kansas streams include the plains minnow and the shoal chub. Even several species such as the red shiner and sand shiner, which were thought to be plentiful, are declining as a result of reduced stream habitat, according to Perkin, who was the lead researcher for the study and is now an assistant professor at Texas A&M University.

"Not only have today's rare fish -- once common in Kansas -- continued to decline, but we also found evidence that the fish that are common today may become rare fish in the future if this problem isn't addressed," Perkin said.

Gido said that even though the fish documented as declining in the study may not have sport fish status like walleye and bass, these smaller fish still have great importance in the diversity and food web of Kansas streams.

"Many of the species that we documented in this paper are not used for recreational purposes but are still an important part of the ecosystem," Gido said. "The larger predators that more humans enjoy for recreational fishing might have some dependency on those smaller species and the consequences of losing those species are very uncertain."

All species of at-risk fish prefer larger, fast-flowing waters and reproduce by spawning above the riverbed so the eggs float downstream. The 2011 and 2012 droughts combined with decreasing groundwater that feeds the streams and many dams have changed the fish habitat and prevent fish from swimming back upstream to start the reproductive cycle over again, Gido said.

Gido, Perkin and their colleagues at the U.S. Geological Survey, Colorado State University, Colorado Parks and Wildlife, Westar Energy and The Nature Conservancy used groundwater well data from the 1950s to 2010 to track the rate of change in the water table of the High Plains Aquifer. They compared it to the historic record of how the fish community has changed at the same time. From there, they were able to calculate predictions for the next 50 years.

Other biologists in the region have documented similar patterns of change. Ryan Waters, stream ecologist with Kansas Department of Wildlife, Parks and Tourism, has pictures taken several decades apart of a northwest Kansas section of the Arikaree River, which was included in the study. Waters' photos compared to a photo before 1990 from Suzanne Collins, professional wildlife photographer, show a wide river before 1990, a narrower river in 1996 and no water in 2006. According to Gido, the decreased flow in the streams like the Arikaree is attributed to a depleted aquifer, or water table, in the Great Plains.

"When the elevation of the water table is higher than the elevation of the stream, water flows from the water table into the stream and it maintains water in that stream," Gido said. "When the elevation of that water table drops below the elevation of the stream, then the water moves from the stream into the ground. During droughts it's much more likely that streams will dry up completely if the water table also is low."

Gido and his students are trying to help the species overcome difficulties. They have worked with the Kansas Department of Wildlife, Parks and Tourism and the city of Wichita to evaluate the use of fish ladders at dams that allow fish to swim upstream. Gido also has consulted with the Kansas Aquatic Biodiversity Center at the Farlington Fish Hatchery near Girard as the hatchery begins breeding some of the most threatened species to stock Kansas streams and rivers, much like agencies already do for sport fish.

"My career has shifted to where I'm really trying to use our research to facilitate these conservation actions on the ground," Gido said. "We still do our research but at the end of the day, to sleep well at night, it really helps me feel like I've done something important if I'm helping with conservation, too."

Story Source:

Materials provided by **Kansas State University**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Joshua S. Perkin, Keith B. Gido, Jeffrey A. Falke, Kurt D. Fausch, Harry Crockett, Eric R. Johnson, John Sanderson. **Groundwater declines are linked to changes in Great Plains stream fish assemblages.** *Proceedings of the National Academy of Sciences*, 2017; 114 (28): 7373 DOI: 10.1073/pnas.1618936114

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Kansas State University. "Loss of 350 miles of Great Plains streams causing changes in aquatic food web." ScienceDaily. ScienceDaily, 2 August 2017. <www.sciencedaily.com/releases/2017/08/170802102803.htm>.

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