

REGION H

Water Planning Group

MEETING MATERIALS

August 3, 2022

Common Region H Terms and Conversion Factors

List of Abbreviations

CRU	Collective Reporting Unit
DCP	Drought Contingency Plan
DFC	Desired Future Condition
DOR	Drought of Record
EA	Executive Administrator
EPA	Environmental Protection Agency
FWSD	Fresh Water Supply District
GAM	Groundwater Availability Model
GCD	Groundwater Conservation District
GMA	Groundwater Management Area
GPCD	Gallons Per Capita Per Day
GRP	Groundwater Reduction Plan
IFR	Infrastructure Finance Report
IPP	Initially Prepared Plan
MAG	Modeled Available Groundwater
MPC	Master Planned Community
MUD	Municipal Utility District
MWP	Major Water Provider
PDSI	Palmer Drought Severity Index
PWS	Public Water Supply
RFIG	Regional Flood Planning Group
RHWPG	Region H Water Planning Group
ROR	Run-of-River
RWP	Regional Water Plan
RWPA	Regional Water Planning Area
RWPG	Regional Water Planning Group
SWIFT	State Water Implementation Fund for Texas
SWP	State Water Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TPWD	Texas Parks and Wildlife Department
TWC	Texas Water Code
TWDB	Texas Water Development Board
UCM	Unified Costing Model
URS	Unique Reservoir Site
USS	Unique Stream Segment
WAM	Water Availability Model
WCID	Water Control and Improvement District
WCP	Water Conservation Plan
WMS	Water Management Strategy
WRAP	Water Rights Analysis Package
WUD	Water Utility Database
WUG	Water User Group
WWP	Wholesale Water Provider

Water Measurements

1 acre-foot (AF) = 43,560 cubic feet = 325,851 gallons

1 acre-foot per year (ac-ft/yr) = 325,851 gallons per year = 893 gallons per day

1 gallon per minute (gpm) = 1,440 gallons per day = 1.6 ac-ft/yr

1 million gallons per day (mgd) = 1,000,000 gallons per day = 1,120 ac-ft/yr

Region H Water Planning Group
10:00 AM Wednesday
August 3, 2022
San Jacinto River Authority Office
1577 Dam Site Rd, Conroe, Texas 77304
AGENDA

1. Call to order.
2. Introductions.
3. Review and approve minutes of May 4, 2022 meeting.
4. **Receive public comments on specific issues related to agenda items 5 through 8.** (Public comments limited to 3 minutes per speaker)
5. Planning Group Membership
 - a. Receive Nominating Committee report and consider taking action to approve members to fill vacancies on the Region H Water Planning Group (RHWPG).
6. Special Items and Informational Presentations
 - a. Receive presentation from the City of Houston regarding the City's water conservation and efficiency initiatives.
 - b. Receive presentation from Consultant Team regarding the proposed application by Brazosport Water Authority to amend the 2021 Region H Regional Water Plan (RWP) and consider approving the submittal of the application package to Texas Water Development Board (TWDB) for the determination of minor amendment status.
7. Plan Development and Administration
 - a. Receive update from Consultant Team regarding TWDB funding of the sixth round of regional water planning for Region H and take action authorizing the San Jacinto River Authority to execute amended contracts with subconsultants.
 - b. Receive update from Consultant Team and Non-Population Demands Committee regarding data and projections for the 2026 Region H RWP.
 - c. Receive update from Consultant Team and Population Demands Committee regarding data and projections for the 2026 Region H RWP.
 - d. 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.
8. General Updates and Outreach
 - a. Receive update regarding schedule and milestones for the development of the 2026 Region H RWP.
 - b. Receive update from liaisons to other groups.
 - c. Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the RHWPG.
 - d. Agency communications and general information.
9. **Receive public comments.** (Public comments limited to 3 minutes per speaker)
10. Next Meeting: November 2, 2022.
11. 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 3

Review and approve minutes of May 4, 2022 meeting.

**REGION H WATER PLANNING GROUP
MINUTES OF REGULAR MEETING
MAY 4, 2022**

MEMBERS PRESENT:

David Bailey, John Bartos, Brad Brunett, Jun Chang, James Comin, Mark Evans, Yvonne Forrest, Jace Houston, Ken Kramer, Ivan Langford, Marvin Marcell, Danny Pierce, Byron Ryder, Loyd Smith, and Michael Turco.

ALTERNATES:

Samantha Reiter for Gary Ashmore, Mike Uhl for Glenn Lord, Zach Holland for James Morrison, Tom Michel for William Teer, Jake Hollingsworth for Brandon Wade, and Jim Sims for Kevin Ward.

MEMBERS ABSENT:

W.R. Baker, Carl Burch, Caleb Cooper, Bob Hebert, and Robert Istre.

NON-VOTING MEMBERS:

Lann Bookout

CONSULTANT TEAM:

Philip Taucer and Jason Afinowicz

1. CALL TO ORDER

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

2. INTRODUCTIONS

There were no introductions

3. REVIEW AND APPROVE MINUTES OF FEBRUARY 2, 2022 MEETING

Mr. Brunett made a motion to approve the minutes of February 2, 2022. The motion was seconded by Mr. Turco and carried unanimously with one correction to amend the name Judge Pierce related to item 5.

4. RECEIVE PUBLIC COMMENTS ON SPECIFIC ISSUES RELATED TO AGENDA ITEMS 5 THROUGH 8

There were no public comments.

5. PLANNING GROUP MEMBERSHIP

a. Review Region H Committee Assignments for Development of the 2026 Region H Regional Water Plan (RWP)

Mr. Evans presented the slate of individuals assigned to serve on various Region H committees for development of the 2026 RWP and asked that members wishing to serve on a committee contact him for consideration. He stated that a chair will be named to the Water Management Strategies and Non-Population Demand Committees in the near future and reminded the group that committee meetings are open to the public and required to be posted. The committee assignments were presented as follows:

Executive Committee: John Bartos, Mark Evans (Chair), Yvonne Forrest, Jace Houston, and Marvin Marcell.

Nominating Committee: Gary Ashmore, David Bailey, Jun Change (Chair), Glenn Lord, and Mike Turco.

Non-Population Demand Committee: W.R. Baker, Carl Burch, James Comin, Robert Istre, and Glenn Lord.

Population Demand Committee: Robert Istre, Ivan Langford, Marvin Marcell (Chair), Byron Ryder, and Mike Turco.

Groundwater Supply Committee: Gary Ashmore, David Bailey, Yvonne Forrest, Ivan Langford, and Mike Turco (Chair).

Surface Water Supply Committee: Brad Brunett, Jun Chang, Yvonne Forrest, Jace Houston (Chair), Brandon Wade, and Kevin Ward.

Water Management Strategies Committee: John Bartos, Brad Brunett, Jun Chang, Yvonne Forrest, Bob Hebert, Jace Houston, Ken Kramer, Ivan Langford, Glenn Lord, Mike Turco, Brandon Wade, and Kevin Ward.

6. SPECIAL ITEMS AND INFORMATIONAL PRESENTATIONS

a. Receive presentation from Consultant Team regarding the proposed application by the City of Baytown to amend the 2021 Region H RWP and consider approving the submittal of the application package to TWDB for the determination of minor amendment status

Mr. Taucer provided a high-level overview of the amendment process for an adopted RWP. He explained that the City of Baytown requested a proposed amendment to the 2021 Region H RWP to better capture their current infrastructure capacity and to facilitate inclusion of anticipated infrastructure expansion for consistency with upcoming State funding considerations. Following discussion, Mr. Langford made a motion to approve the submittal of the application package to TWDB for the determination of minor amendment status to the State water plan. The motion was seconded by Mr. Chang and carried unanimously.

7. PLAN DEVELOPMENT AND ADMINISTRATION

a. Discuss and consider taking action to adopt proposed amendments to the Region H bylaws

Mr. Taucer provided an overview of proposed amendments to the Region H Bylaws to include minor revisions to statute references, the length of time in which meeting notifications must be given to the public, changes to the posting requirements for the Raw Water Plan, as well as changes to the language pertaining to members serving in alternate positions. A brief discussion ensued after which Mr. Houston suggested the document be reviewed for grammatical errors prior to being brought back before the group for consideration. Mr. Evans then stated the item would be tabled until the August 3, 2022, Region H Water Planning Group meeting.

b. Discuss and consider taking action to authorize the San Jacinto River Authority to negotiate and execute an amendment to the TWDB contract to incorporate the full scope of work and total project cost for the 2026 RWP

Mr. Taucer stated the initial phase of planning funding for the 2026 RWP has already been executed and that TWDB is currently working on contract amendments for the remainder of the planning cycle. He went on to explain that action needs to be taken to authorize SJRA as the local political subdivision to enter into and execute the contract and amendments on behalf of the planning group. Following discussion, Mr. Marcell motioned to authorize the San Jacinto River Authority to negotiate and execute an amendment to the TWDB contract to incorporate the full scope of work and total project cost for the 2026 RWP. The motion was seconded by Mr. Chang and carried unanimously.

c. Receive update from Consultant Team and Non-Population Demands Committee regarding draft non-municipal demand projections for the 2026 Region H RWP

Mr. Taucer explained that a new study examining water usage by the mining industry is under development by the Bureau of Economic Geology (BEG) for the Texas Water

Development Board. The study takes a fresh look at mining demands and is currently available in draft format, with the final report anticipated for release in June. Mr. Taucer provided a link for those interested in taking a more detailed look at the study. He provided a high-level overview comparing methodologies used in the last cycle and this cycle, to include historical use by mining type, demand locations and water sources, industry and agency data and projections by mining type. Mr. Taucer stated the projections from the BEG Study are much lower than the projections from the 2016-2021 Plan and continued by explaining the new projections are much more in line with the recent historical Texas Water Development Board numbers for Region H counties and the change in conditions over the last ten (10) years. He reminded the group that these are draft numbers and that there may be some refinement moving forward.

d. Receive report from Consultant Team and Population Demands Committee regarding preliminary water user group (WUG) data for the 2026 Region H RWP

Mr. Taucer announced that the Texas Water Development Board recently released its draft list of the Water User Groups along with the supporting data on historical water use, connection counts, and recent population per capita. He stated the Texas Water Development Board has asked the planning groups to follow up with any comments or revisions by June. Mr. Taucer provided a high-level overview of Municipal Water User Group. Following discussion, Mr. Taucer stated that after preliminary review by the RWPG consultant team and members, preliminary recommendations include rolling non-member districts out of RWAs, rolling member districts into RWAs, and additional name updates.

e. Consider taking action authorizing the Consultant Team and Population Demands Committee to develop and transmit recommendations to the Texas Water Development Board regarding WUG identification and data

Mr. Houston made a motion to authorize the Consultant Team and Population Demands Committee to develop and transmit recommendations to TWDB regarding WUG identification and data. Following a brief discussion, the motion was seconded by Mr. Bartos and carried unanimously.

8. GENERAL UPDATES AND OUTREACH

a. Receive update regarding the schedule and milestones for the development of the 2026 Region H RWP

Mr. Taucer provided an overview related to the schedule and milestones for the development of the 2026 Region H Regional Water Plan by providing dates of scheduled events/tasks.

b. Receive update from liaisons to other groups

There were no updates to report.

c. Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the RHWPG

Mr. Taucer reported on a recent meeting with the Harris-Galveston Subsidence District to discuss the overall planning process, Region H's background, local efforts, and a recap of the plan. He continued by stating the consultant team is willing to provide presentations to interests groups, etc., and reminded the group that the technical outreach portion of the plan will be starting soon.

d. Agency communications and general information

Mr. Bookout provided an update related to upcoming deadlines, future meetings, and other pertinent topics related to the Texas Water Development Board. Mr. Evans announced that Bob Hebert resigned his position effective immediately. Mr. Evans stated that Mike O'Connell has been recommended to fill the position representing Small Business and that the vacant position needed to be posted on the website. He continued by stating discussion related to filling the vacancy would be discussed and possibly considered at the August meeting. Mr. Houston announced the passing of former Harris-Galveston Subsidence District General Manager and Region H WPG member Ron Neighbors. Mr. Houston stated that a celebration of life is scheduled for May 21, 2022, in La Grange, Texas.

It was announced the agenda would be followed out of order to discuss and take possible action on Item 7a, which was tabled for further discussion earlier in the agenda.

7. PLAN DEVELOPMENT AND ADMINISTRATION

a. Discuss and consider taking action to adopt proposed amendments to the Region H bylaws

Mr. Evans requested that Item 7a, tabled previously in the meeting, be revisited for additional consideration. A brief discussion ensued after which Mr. Holland motioned to approve the proposed redline amendments to the Region H bylaws. The motion was seconded by Ms. Forrest and carried unanimously.

9. RECEIVE PUBLIC COMMENTS

There were no public comments.

10. NEXT MEETING

It was announced that the next meeting of the Region H Water Planning Group will take place on August 3, 2022.

11. ADJOURN

The meeting was adjourned at 11:10 a.m.

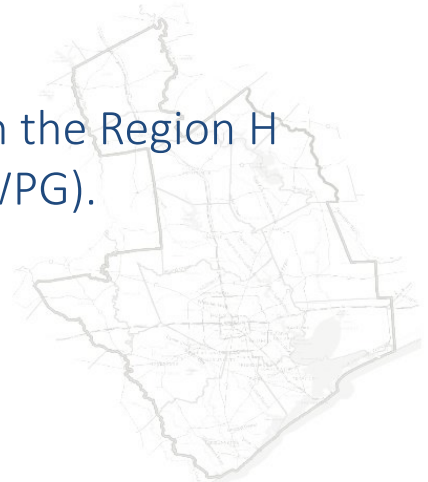
Agenda Item 5a

Receive Nominating Committee report and consider taking action to approve members to fill vacancies on the Region H Water Planning Group (RHWPG).

Agenda Item 5a Vacancies

Action:

Approve members to fill vacancies on the Region H
Water Planning Group (RHWPG).



Agenda Item 6a

Receive presentation from the City of Houston regarding the City's water conservation and efficiency initiatives.



HOUSTON WATER CONSERVATION EFFORTS

PAULA PACIOREK
WATER PROGRAMS DIVISION MANAGER
HOUSTON WATER



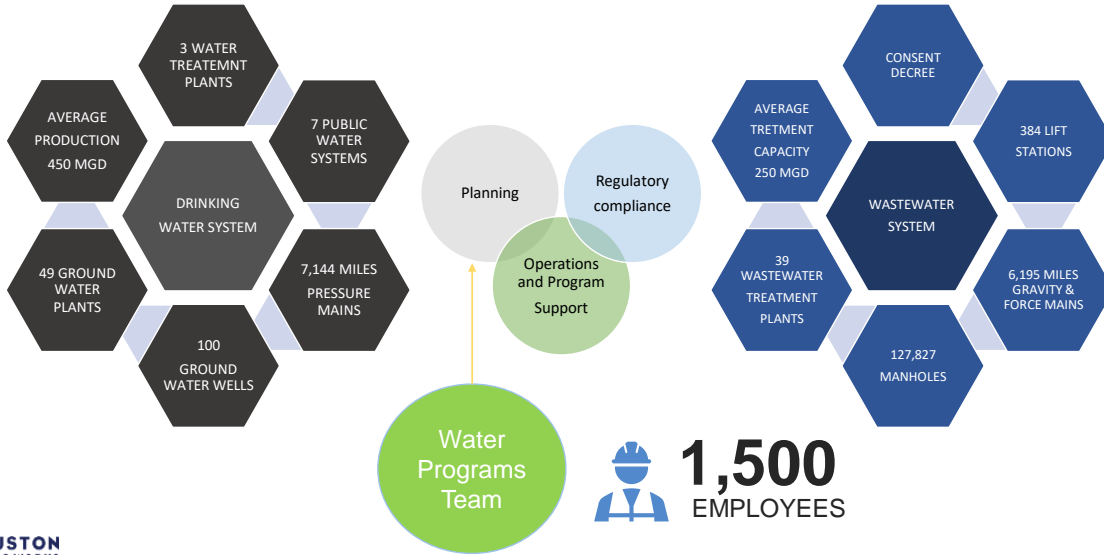
PURPOSE

5 TO THRIVE VALUES

integrity | teamwork | ownership | communication | respect



HOUSTON WATER



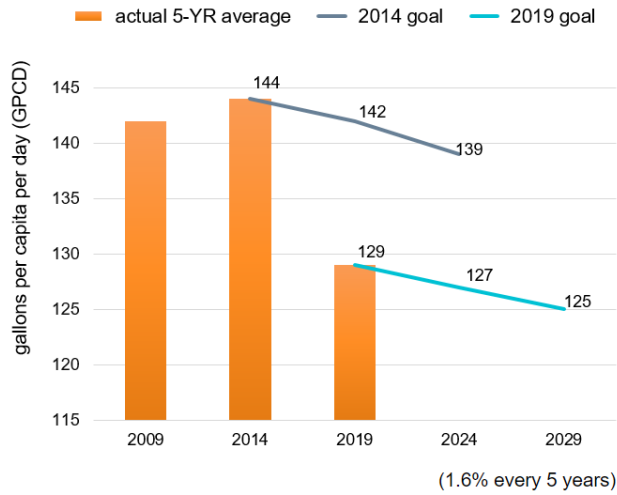
HOUSTON WATER CONSERVATION PLAN

PROACTIVE	DROUGHT MANAGEMENT
on-going	specific
<p>goals</p> <p>reduce water demand by 1.6% / 5 yrs reduce water loss 5 % / 5 yrs</p>	<p>goal</p> <p>reduce specific % of water demand in short-term period</p>
<p>strategies</p> <p>demand management water-efficiency increase water loss management</p>	<p>strategies</p> <p>Drought Contingency Plan Stages 1-4</p>

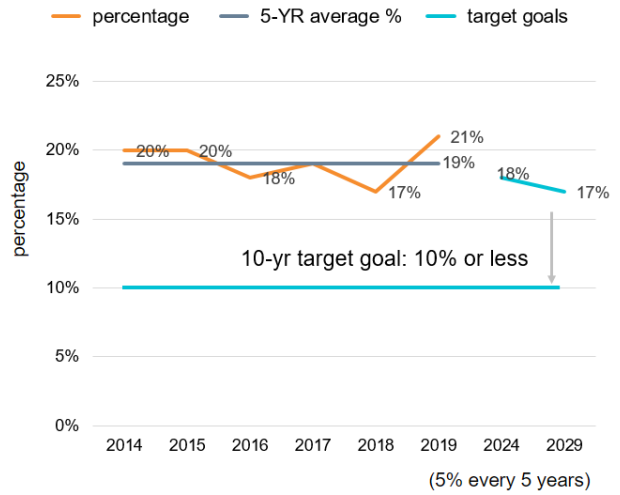


PROACTIVE TARGET GOALS

demand reduction target goals vs. historical & baseline



water loss reduction target goals vs. historical & baseline



EVOLUTION OF WATER CONSERVATION PROGRAMS



- Water Works Festival
- Water Works Education Center
- Project WET training
- community outreach



LAST THREE YEARS...



NEW RESIDENTIAL EDUCATION & PROGRAMS

<p>leak repair workshops</p> 	<p>Wyland Mayor's Challenge</p> 	<p>Spring Rain Barrel Sale</p> 	<p>Water Works Festival</p> 	<p>Fall Rain Barrel Sale</p> 	<p>Imagine a Day Without Water</p> 	<p>Winter Sprinkler Shutoff</p> 
March	April	May	May	October	October	Nov-Feb
						
year-round social media						



HOUSTON RUNS ON WATER CAMPAIGN

1 of 3 pilot market (Texas Runs on Water Campaign: TWF)

- paid social media ads
- Grocery TV ads
- Hobby airport
- Houston Botanic Garden



TSU WATER CONSERVATION STUDY (2021)

Utility Conservation Program NPV and B/C Ratio (2020 Dollars)			
Class	Activity Name	NPV (\$)	B/C Ratio
Single Family	Residential HE Toilets, SF	\$38,262,468	2.6
Multi Family	Residential HE Toilets, MF	\$77,697,934	5.5
Single Family	Residential LF Showerhead, SF	\$322,798	5.3
Multi Family	Residential LF Showerhead, MF	\$232,599	4.9
Single Family	Home Water Reports	\$13,163,814	5.0
Commercial	CII 1/2 Gallon Urinal	\$567,170	1.5
Commercial	CII Valve-Type HE Toilet	\$4,023,760	1.9
Commercial	CII Laundromat	\$586,211	1.5
Commercial	CII Dishwasher	\$328,537	1.7
Commercial	CII Spray Rinse Valve	\$947,087	2.9
Commercial	CII Food Steamer	\$1,311,892	2.6
Commercial	CII Cooling Tower	\$668,390	2.6
Commercial	CII Tank-Type HE Toilet	\$278,589	2.6
Institutional	CII 1/2 Gallon Urinal	\$63,390	1.5
Institutional	CII Valve-Type HE Toilet	\$445,876	1.9
Institutional	CII Laundromat	\$65,135	1.5
Institutional	CII Dishwasher	\$32,854	1.7



INCENTIVE PROGRAMS



Subsidized Rain Barrel Sale



Showerhead SWAP/ Free showerheads



HE toilet and showerhead rebate for Multi-Family



SMART UTILITY CHECK UP

- one year of FREE utility assessments**
 - includes water, electricity, and gas
- reduce commercial water usage**
 - energy-water nexus
- helps save money**
 - overhead costs, rebates, tax credits
- public-private partnership**
 - Imperial Utilities & Sustainability, Inc.

HOUSTON PUBLIC WORKS

Water Smart Utility Checkup

2021 IMPACT REPORT

<p>14 commercial buildings</p> <p>INCREASED KNOWLEDGE</p> <p>Provided 1 year of monthly assessments (water, electricity, gas).</p>	<p>\$56.5K in direct savings*</p> <p>SAVED MONEY</p> <p>*no capital or financial investment. Savings through rebates & credits</p>	<p>\$4.7M gallons*</p> <p>SAVED WATER & ENERGY</p> <p>*of water saved annually. Savings through rebates, credits, and capital investments</p>
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WHOLESALE WATER CONSERVATION PROGRAM



Goldwater Dashboard

- planning & reporting tool
- free to 64 wholesale customers
- demand/supply projections
- different conservation scenarios
- quantifies conservation activities
- provides an annual report
- Water My Yard: most cost-effective measure

WATER LOSS TASK FORCE



- to assess water loss efforts
- real, apparent WL and auditing
- identify areas of improvement
- provide a platform for collaboration
- MOU signed with Denmark (May 2021)
- non-revenue water

WHAT'S NEXT?

Water Programs

- Continue all the programs mentioned above
- HE toilet & showerhead rebate program for MF
- Home Water Reports (enhanced water bill/customer portal)
- Outsourcing Water Conservation Plan for 2024 (RFP FY23)
- Water Affordability & Conservation Assessment (AWE) - 9/30/22

Planning

- One Water Plan (Phase 1)



WALK FOR WATER!

When: October 29, 2022

Where: Allen's Landing

Distance: 3 miles

Fundraising event

Charity: Water Mission



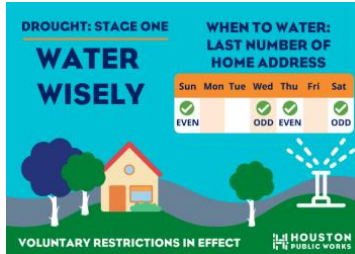
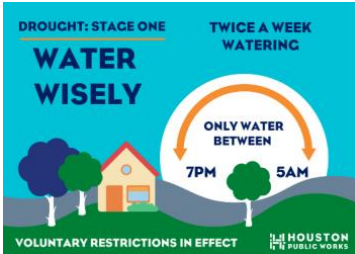
Register at: <https://watermission.org/get-involved/walk-for-water/>

Select: Houston



STAGE ONE (VOLUNTARY) EFFECTIVE 6/21/2022

- limit outdoor irrigation to twice per week from 7PM to 5AM
 - Sundays and Thursdays: Even-numbered street addresses
 - Saturdays and Wednesdays: Odd-numbered street addresses
 - Tuesdays and Fridays: All other costumers
- check & repair water leaks, including faucet and toilet leaks



Questions?

Thank You!



houstonpublicworks.org

  @houpublicworks

Email: paula.paciorek@houstontx.gov

Agenda Item 6b

Receive presentation from Consultant Team regarding the proposed application by Brazosport Water Authority to amend the 2021 Region H Regional Water Plan (RWP) and consider approving the submittal of the application package to Texas Water Development Board (TWDB) for the determination of minor amendment status.

Agenda Item 6b Proposed RWP Amendment



- Proposed by BWA and Invenergy
 - Reflect seawater desalination strategy
 - Consistency for potential funding
- Anticipated amendment approach:
 - Adjustment to Freeport Seawater Desalination

Freese and Nichols, Inc. | INTERA Inc.



2021 Region H Water Plan Amendment Request

Region H Planning Group Meeting

August 3, 2022

Conroe, Texas

Updates to Freeport Seawater Desalination Project

REQUESTED AMENDMENT

Project in 2021 Region H Water Plan: “inactive” concept capable of providing **11,200 AFY (10 MGD)** & scaling up to 100 MGD, beginning in the **2040s**



Sponsorship: Brazosport Water Authority (BWA)

Development Partner: Invenergy Clean Water

Size: 28,000-56,000 AFY (25-50 MGD)

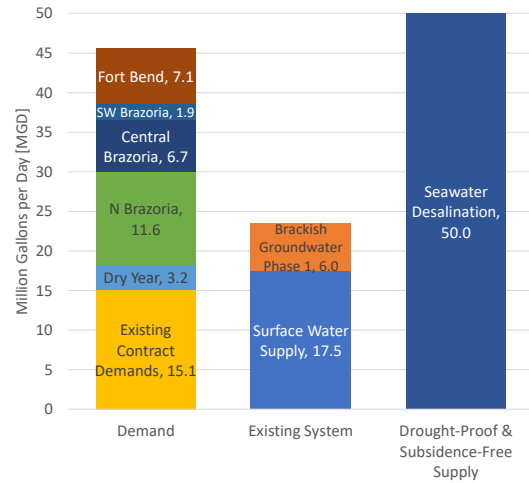
Enough water for 360,000-720,000 people (3-6 Pearland, 50% Dallas)

Decade: 2020s – population, economy, and drought threat growing quickly

Motivation:

- Greater needs (particularly municipal) in BWA service region
- Potential expansion of BWA system to serve new regions (Harris, Matagorda)
- Potential water exchange to increase flexibility beyond Region H¹ (water to be distributed by BWA)

NEED IDENTIFIED BY STUDY²



MGD: Million Gallons per Day

¹Conversations are underway with BRA to explore unconventional ways, such as water rights transfers, to meet needs outside Region H with this project.

²Based on Scenario 4 in the Brazoria County Desalination Water Supply Feasibility Study, CDM Smith, March 2021.

Freeport Seawater Desalination Project Details

Project Details:

- **Located** in Freeport’s industrial park
- **Intake:** Seawater
- **Discharge:** Blending in Lower Brazos River
- **Designed:** Option to build in 25MGD blocks

Project Status

- Land identified and secured
- Interagency permitting meeting on July 13, ‘22
- Permit applications to be filed 3Q22
- Design work & commercial offtake underway

Public-Private Partnership

Developer
Invenergy
\$48B+ transactions
180+ Projects

Technology
IDE
Technologies
500+ water projects
60+ years



Updates to BWA Transmission Expansion

REQUESTED AMENDMENT

Project in 2021 Region H Water Plan: **23.4MGD** of capacity in **2030s**



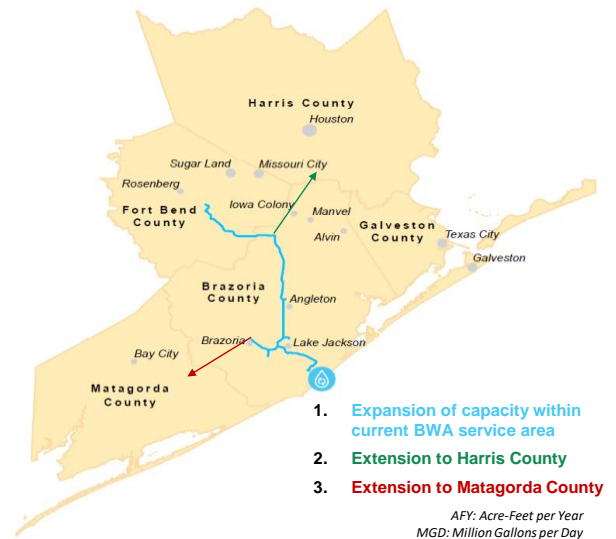
Size: Up to 56,000 AFY (50 MGD) of additional capacity

Decade: 2020s – same time as Freeport Seawater Desalination Project

Motivation: Deliver water from the Freeport Seawater Desalination Project to end users

- Transport water to its planned remineralization facility
- Distribute potable water to end users

LOCATION & SEGMENTS



Agenda Item 6b Proposed RWP Amendment

- Executive Summary
- Chapter 5 – Water Management Strategies
 - Revisions to text
 - Table 5-3: Region H Potentially Feasible WMS a Projects
 - Table 5-4: WMS and Key Project Relationships
 - Table 5-5: Key Project Overview
 - Figure 5-2: Region H Capital and Annual Costs
 - Appendix 5-A: Water Management Strategy Tak
 - Appendix 5-B: Project Technical Memoranda
 - Appendix DB



Agenda Item 6b Proposed RWP Amendment

- Chapter 6 – Impacts of the RWP
 - Revisions to text
 - Table 6-1: Key Recommended WMS and Projects
 - Appendix 6-B: Impacts to Resources
- Chapter 9 – Financing
 - Revisions to text
 - All tables and figures
 - Appendix 9-A: Tabulated Survey Results



Freese and Nichols, Inc. | INTERA Inc.

Agenda Item 6b Proposed RWP Amendment

- Chapter 11 – Implementation and Comparison
 - Revisions to text
 - WMS figures and tables
 - Appendix 11-A: Implementation Report
- DB22 data entry

A screenshot of the Texas Water Development Board's 'Regional Water Plan Data Entry' application. The interface includes a navigation menu with 'Home', 'User Access', 'Sources', 'Entities', 'WMS', 'Data Checks', 'Reports', and 'Help'. Below the menu, there is a 'Home Page for Regional Water Planning' section. The main content area contains a welcome message and instructions for using the application to update and maintain the Regional and State Water Planning data for the 2022 and subsequent planning cycles. It also mentions that the default planning cycle is 2022 and provides information on how to update user access and download data. At the bottom, there is a 'Planning Cycle' dropdown menu set to '2022'.

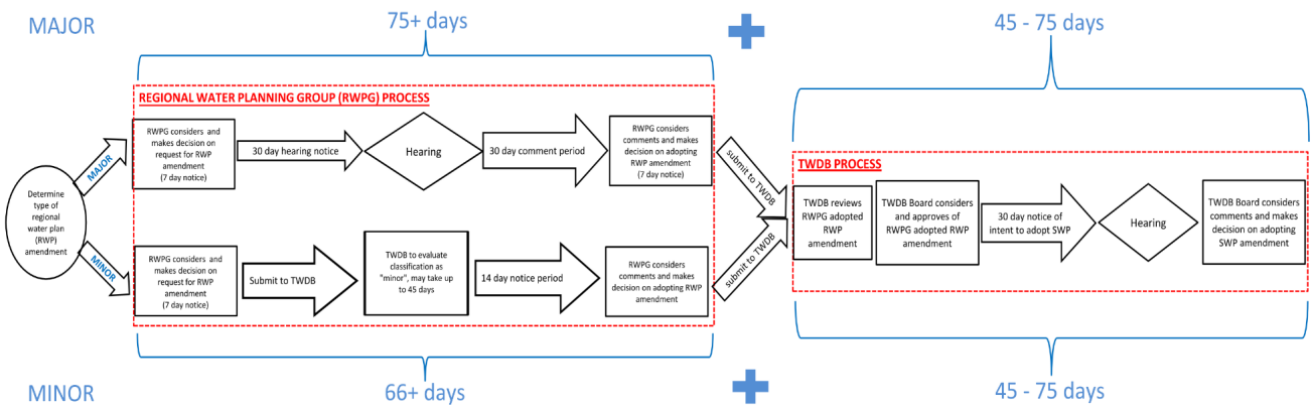
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Agenda Item 6b Proposed RWP Amendment

1. RWPG considers concept for referral to TWDB
2. TWDB determines minor or major amendment status
3. Public process
4. RWPG considers approval of amendment
5. TWDB considers approval of amendment

Agenda Item 6b Proposed RWP Amendment

Texas Water Development Board
State Water Plan (SWP) Amendment Process Timeline



Agenda Item 6b Proposed RWP Amendment

Action:

Approve the submittal of the application package to TWDB
for the determination of minor amendment status.





**Request to Amend the 2021 Region H Water Plan
Information for Region H Water Planning Group Meeting
August 3rd, 2022**

Amendment 1: Freeport Seawater Desalination Project

Overview

Brazosport Water Authority (BWA) seeks to amend both the 2021 Region H Water Plan and the 2022 State Water Plan to reflect the most updated project information and details to the Freeport Seawater Desalination Project (previously listed in both documents). While the project was listed as a dormant project, BWA and its partners have been actively advancing it, and BWA seeks to sponsor it.

BWA's has partnered with Invenergy Clean Water (Invenergy) and IDE Technologies. Invenergy is developing the desalination plant in Freeport's industrial park along the Gulf Coast and will also be the owner and operator of the desalination plant. Invenergy has 20 years of experience as a developer and has completed over \$48B in transactions. In Texas, Invenergy has over 21 projects, including operating and maintaining 2 solar plants in Brazoria County. IDE has designed and will provide the technology and operation support for the water treatment. IDE is a world leader in clean and safe water technologies, including desalination. IDE has around 6 decades of experience developing, financing, and operating water projects, with approximately 500 installations. BWA will remineralize the water from the desalination plant and distribute it to end users.

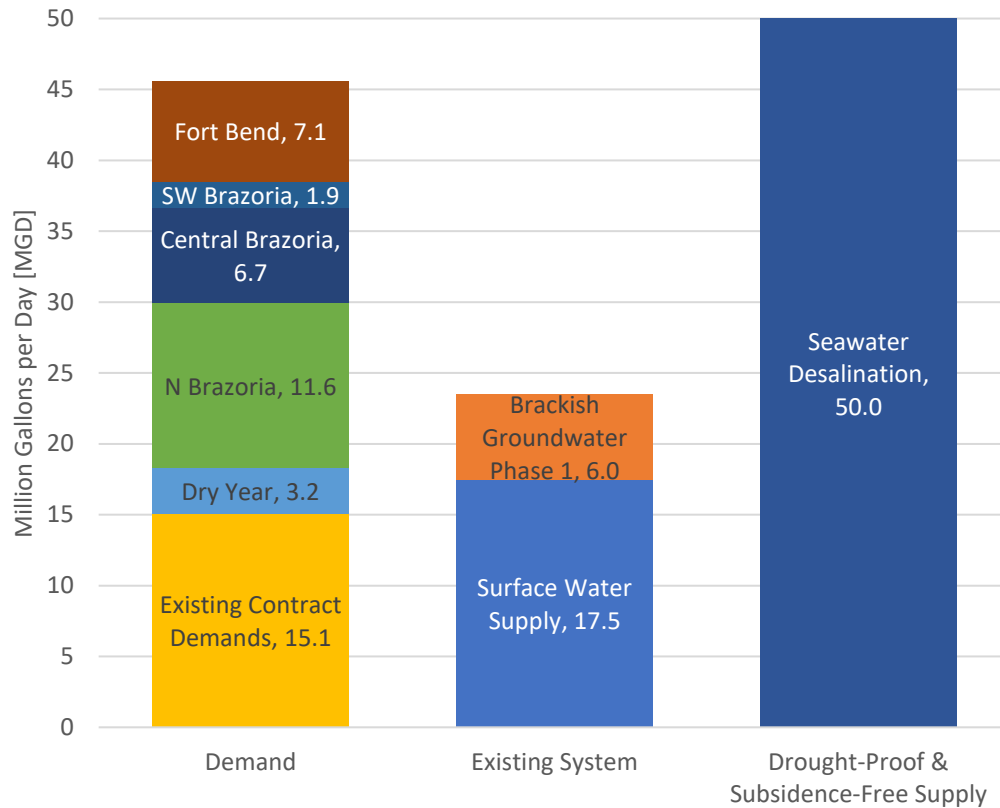
Project Size

The desalination capacity of the project as listed in the 2021 Region H Water Plan and the 2022 State Water Plan is 11,200 acre-feet per year (AFY) or 10 million gallons a day (MGD), with the potential to scale to 100 MGD. BWA would like to change this to 28,000-56,000 AFY or 25-50 MGD as a result of new information indicating considerably larger and more diverse water needs than previously expected due to growth in the region and expansion into other areas. Moreover, BWA is interested in the benefits of additional resilient capacity that can replace ground and surface water withdrawals and mitigate the drought and subsidence conditions in the State.

Desalination can help BWA meet growing water demands (particularly municipal) in its service region. A 2021 study¹ prepared by CDM Smith for BWA indicated that approximately 45 MGD of total water, including approximately 28 MGD of new water, would be required (mainly for municipal use) in the BWA's service region by 2040. Even with BWA's 6 MGD brackish groundwater project, a 22 MGD deficit would remain. The figure below shows that a capacity of 50 MGD could meet all of the demand projected in 2040, even in times of drought and without contributing to subsidence.

¹ CDM Smith, Brazoria County Desalination Water Supply Feasibility Study, March 2021, available at <https://brazosportwaterauthority.org/info/brazoria-county-desalination-water-supply-feasibility-study/>.

Water Needs Identified in CDM Smith Study and Amended Desalination Capacity



Additionally, BWA is evaluating extending its service into parts of Harris and Matagorda counties to meet growing residential and industrial needs there. While the projected needs in those regions is under evaluation, BWA plans to meet this need with water from the Freeport Seawater Desalination Project.

Moreover, there is a possibility of additional water needs beyond Region H that could be met by the new Freeport Seawater Desalination Project via innovative structures. One such structure being explored is a water rights exchange, where surface water use in Region H could be replaced by desalinated water to free surface water for use further upstream in the Brazos River. BWA would transport this water.

To enable it to better meet this growth, BWA has a Memorandum of Understanding with Invenergy that enables it to receive and deliver desalinated water to end users. As a result, the Freeport Seawater Desalination Project capacity has been adjusted to deliver up to 50 MGD of desalinated water.

Project Timeline

While the original project was projected to be operational by 2040, it is now clear that the water needs are more urgent than previously expected and that the project could be built much sooner than that. The Freeport Seawater Desalination Project could be operational around the middle of this decade, with the exact year depending mainly on the timing of offtake commitments (which will inform the final

design capacity), the permitting process, and supply chain constraints. The project developer, Invenergy Clean Water, has secured land and presented in an interagency permitting meeting on July 13, 2022. Permit applications will be filed in the third quarter of this year. Design work and commercial engagement are underway. The project timeline is summarized below.

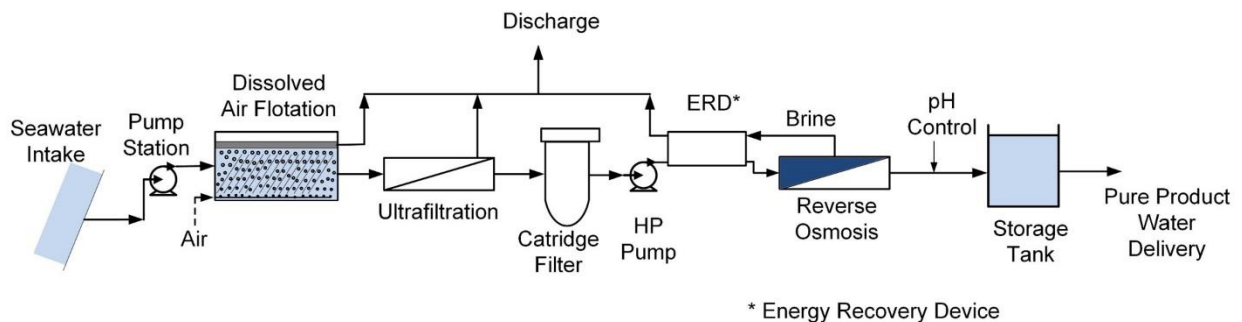


*Contingent upon offtake agreements, permitting and supply chain.

Process Description

The facility will intake seawater through a submerged intake. Intake pumps will transfer seawater to a dissolved air flotation (DAF) treatment system. The treated water effluent from the DAF will be directed to disc filters for removal of remaining suspended solid particles. Following the disc filters, the process stream will be treated by ultrafiltration (UF). The UF filtrate will be routed to UF Filtrate Tanks for storage and further treatment. Booster pumps will transfer UF filtrate from the filtrate tanks to the seawater reverse osmosis system (SWRO) by way of cartridge filters. A high-pressure pump will boost the pressure feeding the SWRO and will be assisted by an energy recovery device (ERD) that utilizes pressure in the SWRO brine stream to increase feedwater pressure, conserving energy required to operate the SWRO. The SWRO permeate will be routed to product water storage tanks and then pumped to end users.

The DAF will send the solids it removes (float) to a backwash pit for further dewatering by lamella clarifiers and centrifuges. Disc filter backwash waste and UF backwash waste will also be routed to the backwash pit. The solids from the centrifuges will be hauled by truck to a solid waste disposal facility, while the supernatant from the lamella clarifiers and centrate will be sent to the RO Brine Pit. Chemical waste from chemically enhanced backwash (CEB) (UF) and clean in place (CIP) (UF and RO) activities will be routed to a neutralization tank and on to the RO brine pit for discharge. Brine generated by the SWRO will be sent to the brine pit for blending in the Lower Brazos River. The process is presented graphically in the figure below (courtesy IDE Technologies)



BDC Simplified Process Flow Diagram

Summary

Cost estimates for this 50 MGD Freeport Seawater Desalination Project are underway, and final price to offtakers will depend heavily on government support. The table below summarizes the main changes requested.

Characteristic	Current	Change To
Potential Volume	11,200 AFY (10 MGD)	28-000-56,000 AFY (25-50 MGD)
Capital Cost	\$155,877,822	Estimate in progress
Start of Operations	By 2040	Mid-2020s
Unit Cost in Start Decade	\$2,273/AF (\$6.98/kgal)	Estimate in progress
Unit Cost in 2070	\$1,293/AF (\$3.97/kgal)	N/A

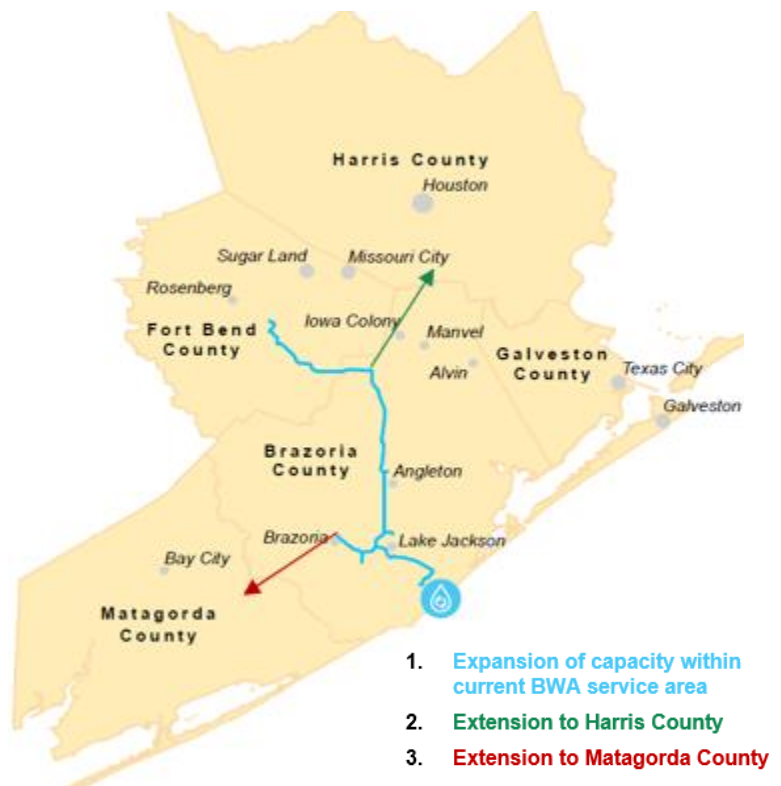
Amendment to Existing BWA Transmission Expansion

BWA plans to build a remineralization plant, pipelines, and associated equipment to distribute the potable desalinated water from the Freeport Seawater Desalination Project to end users. Therefore, BWA requests that to the BWA Transmission Expansion in the 2021 Region H Regional Water Plan and the 2022 State Water Plan be amended to specify the distribution of water from the Freeport Seawater Desalination Project as the objective. Specifically, this project would enable the transmission of desalinated water from the Freeport Seawater Desalination Project to the planned remineralization facility, and from that facility to end users.

The BWA Transmission Expansion will be owned and operated by BWA and would be operational at the same time as the Freeport Seawater Desalination Project around the middle of the 2020 decade, rather than by 2030 as indicated in the current plan. The project would add 56,000 AFY or 50 MGD of transmission capacity, to accommodate the final volume of offtake commitments for potable-grade water from the Freeport Seawater Desalination Project. This is in contrast to the 23.4 MGD estimated in the original project.

The following three pipeline sub-projects are being evaluated, and the final BWA Transmission Expansion may include one, two, or all three of these sub-projects:

1. Pipeline expansion outlined in Alternative 4 in *Brazoria County Desalination Water Supply Feasibility Study* published by CDM Smith in 2021. This involves approximately 63 miles of pipelines in Brazoria and Fort Bend counties to serve increasing municipal needs arising from population growth and subsidence regulations. A preliminary map of this sub-project is shown in the figure to the right.
2. Additional pipeline to Harris County to meet growing water needs within the Houston Metropolitan Region.
3. Additional pipeline to Matagorda County to serve new industrial needs, such as the HIF USA facility that will produce eFuel.





Summary

The table below summarizes the main characteristics of the BWA Distribution Project.

Characteristic	Current	Change To
Potential Volume	26,211 AFY (23.4 MGD)	56,000 AFY (50 MGD)
Capital Cost	\$77,755,692	Estimate in progress
Start of Operations	By 2030	Mid-2020s
Unit Cost in Start Decade	\$248/AF (\$0.76/kgal)	Estimate in progress
Unit Cost in 2070	\$39/AF (\$0.12/kgal)	N/A

Contact Information



Ronnie Woodruff
General Manager
(979) 297-2715
rwoodruff@bwawater.org



Matthew Nicholls
Vice President, Origination
(312) 582-1576
mnicholls@invenergy.com

Agenda Item 7a

Receive update from Consultant Team regarding TWDB funding of the sixth round of regional water planning for Region H and take action authorizing the San Jacinto River Authority to execute amended contracts with subconsultants.

Agenda Item 7a Contract Amendment

Task No.	Task Description	Original Budget	Addl. Funding	Revised Budget
1	Planning Area Description	\$19,973.00	\$0.00	\$19,973.00
2A	Non-Municipal Projections	\$27,318.00	\$0.00	\$27,318.00
2B	Population Demand Projections	\$92,769.00	\$0.00	\$92,769.00
3	Water Supply	\$0.00	\$129,742.00	\$129,742.00
4A	Water Needs	\$0.00	\$33,409.00	\$33,409.00
4B	Infeasible WMS	\$0.00	\$50,034.00	\$50,034.00
4C	Technical Memorandum	\$0.00	\$37,420.00	\$37,420.00
5A	Potentially Feasible WMS	\$0.00	\$57,632.00	\$57,632.00
5B	Evaluation of WMS	\$0.00	\$889,807.00	\$889,807.00
5C	Conservation	\$0.00	\$87,568.00	\$87,568.00
6	Impacts and Consistency	\$0.00	\$91,101.00	\$91,101.00
7	Drought Response	\$0.00	\$98,615.00	\$98,615.00
8	USS, URS, and Recommendations	\$13,082.00	\$0.00	\$13,082.00
9	Implementation	\$0.00	\$50,151.00	\$50,151.00
10	Public Participation	\$134,515.00	\$191,836.00	\$326,351.00
TOTAL		\$287,657.00	\$2,004,972.00	\$1,717,315.00

- TWDB-SJRA amended contract
- Already authorized by RWPG
- Adds remainder of scope and funding
- Allotment for member travel

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Agenda Item 7a Contract Amendment



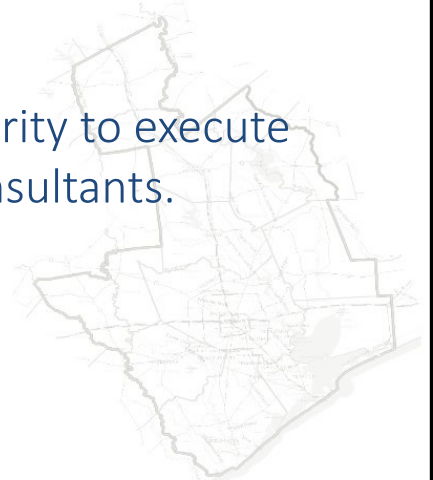
- Additional steps after TWDB contract
- Amended contracts with subconsultants
- Submit WMS evaluation scope(s) for Task 5

Freese and Nichols, Inc. | INTERA Inc.

Agenda Item 7a Contract Amendment

Action:

Authorize the San Jacinto River Authority to execute amended contracts with subconsultants.

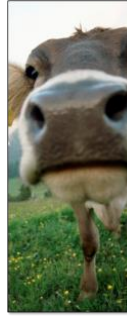


Agenda Item 7b

Receive update from Consultant Team and Non-Population Demands Committee regarding data and projections for the 2026 Region H RWP.

Agenda Item 7b Non-Municipal Water Demand

- Draft industrial projections in review
- Agriculture and Mining released this month
- Major Committee and Group Activities
 - Review of historical data and demand basis
 - Recommendation of proposed changes to projections
- Related Efforts
 - 2026 RWP WUG Survey
 - Major Water Provider list evaluation

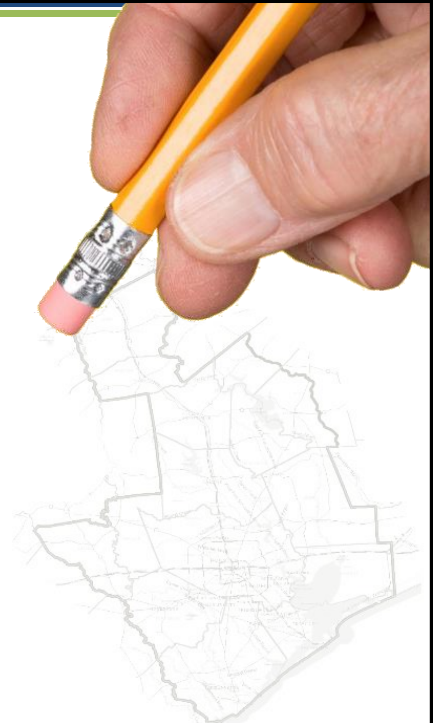


Agenda Item 7c

Receive update from Consultant Team and Population Demands Committee regarding data and projections for the 2026 Region H RWP.

Agenda Item 7c Population Water Demand

- Recap – Preliminary WUG List
- Preliminary review by RWPG consultant team and members
- Additional review by Population Demands Committee
- Only minor items



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Agenda Item 7c Population Water Demand

RWPG member technical review comments

Confirm retention of 2021 RWP WUGs

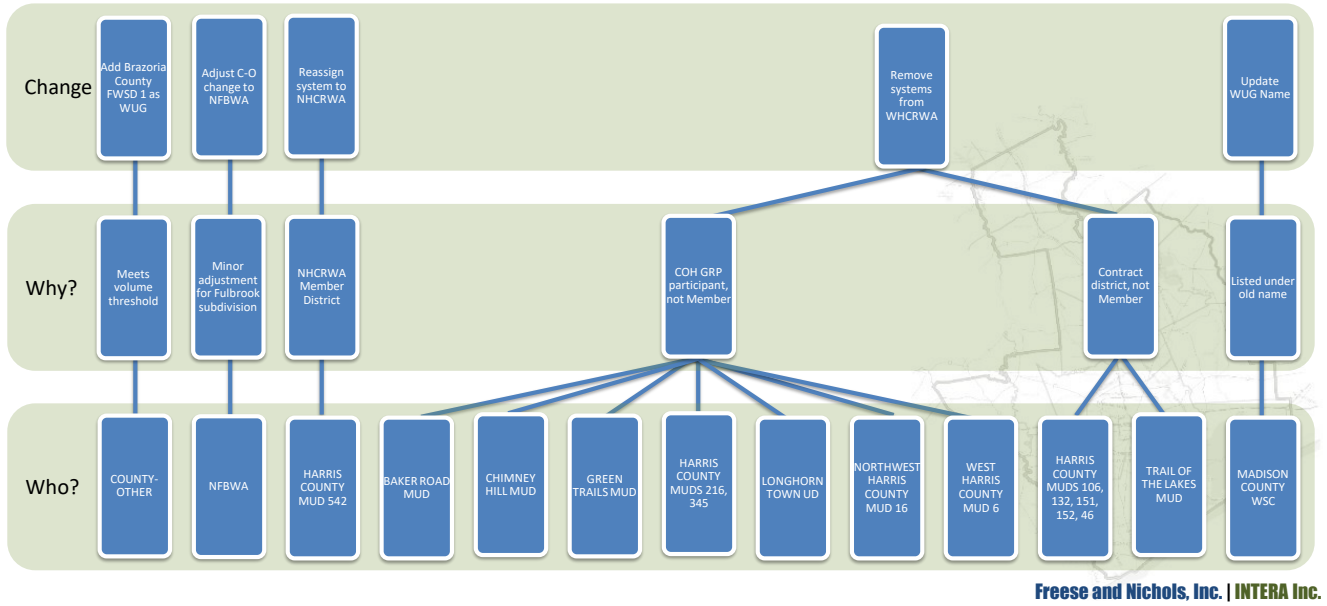
Examine historical usage for new WUGs

Review County-Other data to identify potential missed systems

Compare relationships against CRU and GRP lists

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Agenda Item 7c Population Water Demand



Agenda Item 7c Population Water Demand



- Major Committee and Group Activities
 - Coordination with Subsidence Districts, TWDB, and RWPG
 - Review of historical data and demand basis
 - Recommendation of proposed changes to projections
- Related Efforts
 - 2026 RWP WUG Survey
 - Sub-WUG planning option evaluation
 - Major Water Provider list evaluation

Agenda Item 7d

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.

Agenda Item 7d Sub-WUG Option

- Requested by a few RWPGs
- Primarily for rural areas
 - Small entities
 - Buried in County-Other
- Regions develop the data and track
- Information support from TWDB
- No longer included in database



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Agenda Item 7d Sub-WUG Option

- Should Region H utilize?
 - Increased detail
 - Reflected in document but not database
- Potential applications
 - Rural – H generally less issue than others
 - CRUs – Counter to purpose
 - GRP in CO – Planned for by sponsor
 - Annexations / Longer-term development

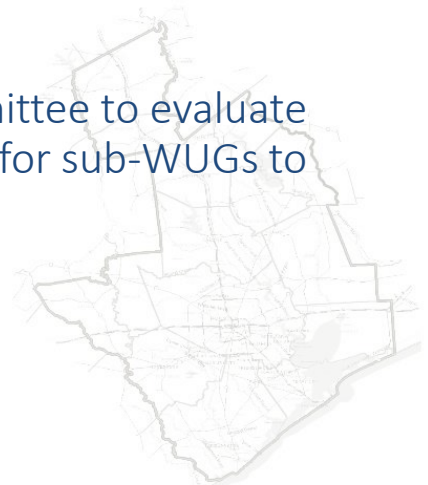


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Agenda Item 7d Sub-WUG Option

Action:

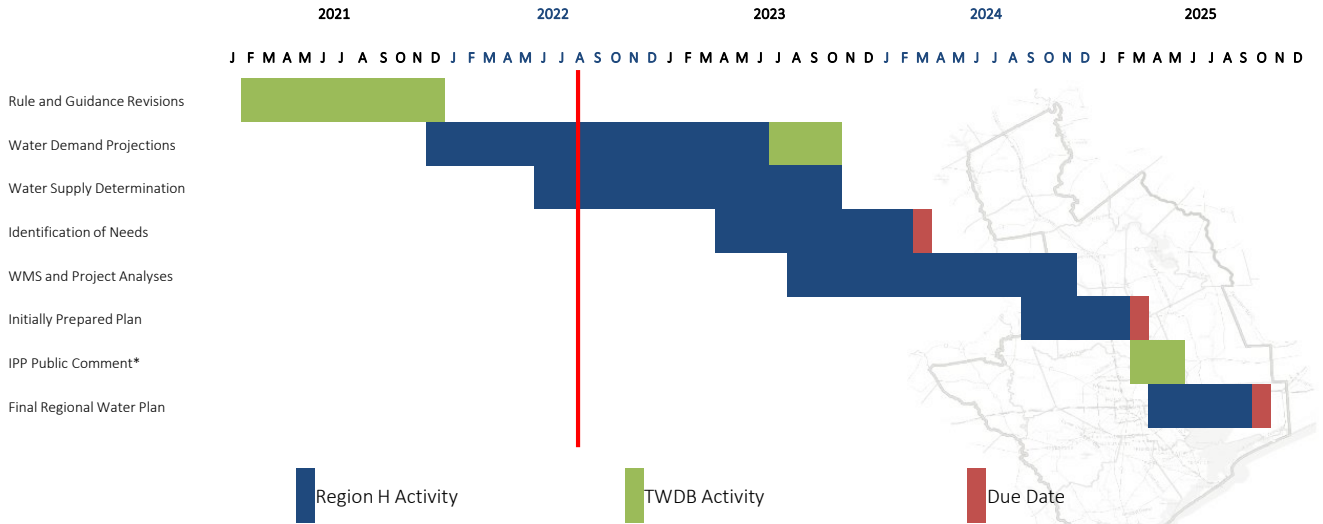
Authorize the Population Demands Committee to evaluate potential sub-WUGs and submit requests for sub-WUGs to TWDB.



Agenda Item 8a

Receive update regarding the schedule and milestones for the development of the 2026 Region H RWP.

Agenda Item 8a 2026 RWP Schedule



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

Agenda Item 8a 2026 RWP Schedule

Date	Scheduled Events/Tasks
08/2022	RWPG Meeting
08/2022	Draft Irrigation and Mining projections released
02/2023	Draft Population and Municipal demand projections released
08/2023	RWPG projection review concludes / requests due to TWDB
10/2023	TWDB adoption of projections

Agenda Item 8b

Receive update from liaisons to other groups.

Agenda Item 8b Liaison Updates

Region C	Brazos G	Region 6	Region 8
Kevin Ward	Zach Holland	Brandon Wade	Glenn Lord
IPC / Chairs	GMA 12	GMA 14	Other
Mark Evans	David Bailey	Gary Ashmore	RWPG Members

Agenda Item 8c

Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the RHWPG.

Agenda Item 8c Community Outreach



Advocacy and
Technical Groups



Water Providers



Public Meetings



Industry Events



Parties



Birthdays

Agenda Item 8d

Agency communications and general information.

2026 Regional Water Plans Projections Methodology Overview

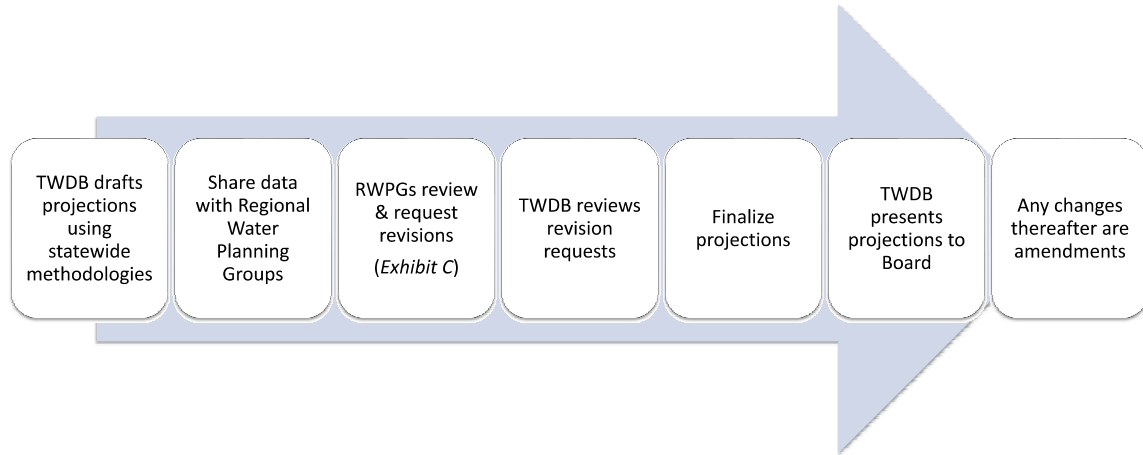
Katie Dahlberg
Manager, Projections & Socioeconomic Analysis
Water Supply Planning

August 3, 2022
Region H Planning Group Meeting

Agenda

- Overview projections process
- Projections data release schedule
- Projections methodologies
 - Non-municipal water demands
 - Population
 - Municipal water demand

Projections Process



Projections Release Schedule

Draft Water Demand Projections	Timeline
Livestock, Manufacturing, Steam-Electric Projections + Supporting Data	January 20, 2022
Water User Group List + Historical Population, Connections, Net Use, GPCD	March 16, 2022
DUE: RWPGs review WUG list + historical WUG data	July 29, 2022
Irrigation Projections + Supporting Data	August 2022
Mining Projections + Supporting Data	August 2022
Population Projections + Plumbing Code Savings + Municipal Demand	February 2023
DUE: RWPGs request revisions for non-municipal demand projections	July 2023
DUE: RWPGs request revisions for population and municipal demand projections	August 2023

Non-Municipal Water Demand Projections Methodologies

Historical: 2015 - 2019

Projections: 2030 - 2080

Irrigation

Same methodology as 2021 RWP

Baseline = 5-year average (2015-2019)

Water sources: groundwater, surface water, reuse

- Most-recent Modeled Available Groundwater

Irrigation

2030 – 2080 held constant

- Except counties where groundwater availability (MAG) is less than the groundwater-portion of the demand projections
- Decline commensurate with groundwater availability

Draft projections will be released in August 2022

Livestock

Same methodology as 2021 RWP

Baseline = 5-year average (2015-2019)

- County water use estimates, based on USDA inventory * water use coefficients
- Water Use Survey facilities

Follows same projection trend as 2021 RWP

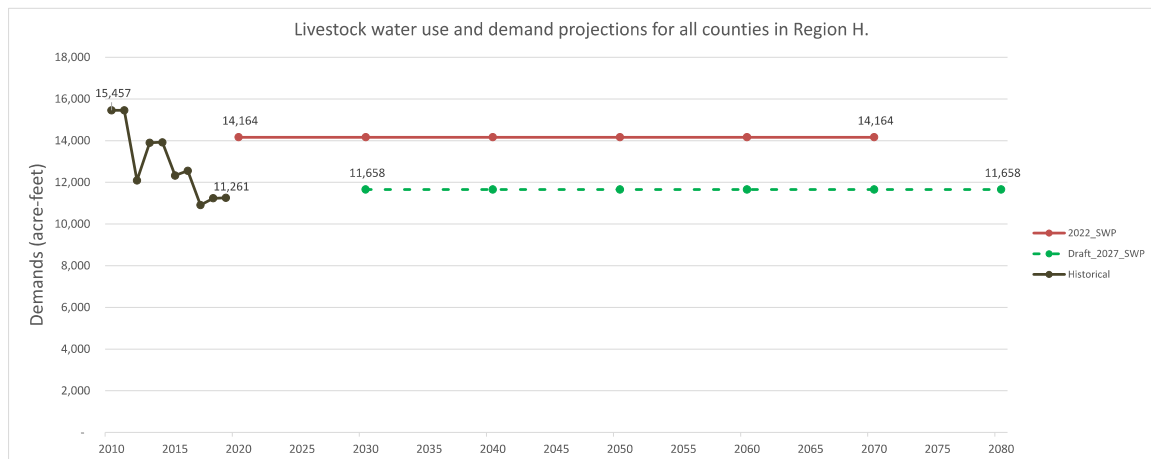
- 2070 – 2080 held constant

Draft projections released in January 2022

Livestock Water Use Coefficients

TWDB Category	USDA Data Type	2026 RWP Water Use (gallons/head/day)	2021 RWP Water Use (gallons/head/day)
Cattle	Milk	55	75
	Fed & Other Cattle	15	15
Chickens	Layers	0.09	0.086
	Pullets, Replacement		
	Roosters		
	Broilers	0.09	0.077
Equine	Horses & Ponies	12	12
	Mules, Burros, & Donkeys		
Hogs	Hogs	5	11
Sheep	Sheep	2	2
Goats	Milk	2	0.5
	Meat & Other		
	Angora		
Turkeys	Turkeys	0.2	0.2

Livestock Projections: Compare 2021 RWP to Draft 2026 RWP



Manufacturing

Baseline = highest county water use (2015-2019) + unaccounted water use estimates

- Historical water use survey
- U.S. Census Bureau County Business Patterns (CBP) historical number of establishments

Water Sources: fresh and brackish groundwater, fresh surface water, reuse

- Total intake

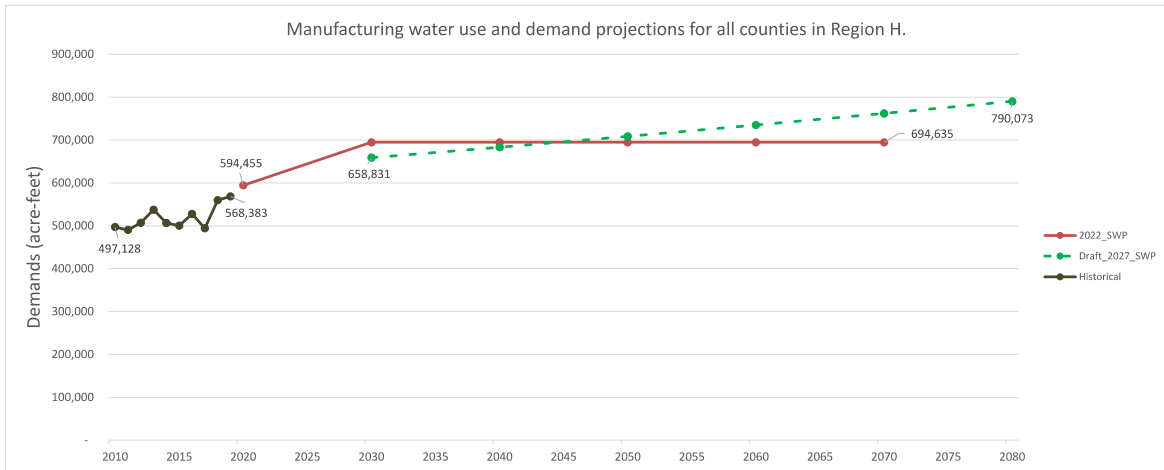
Draft projections released in January 2022

Manufacturing

Baseline * 2010-2019 historical water use survey rate of change = 2030

CBP 2010-2019 historical number of establishments rate of change used to project each decade 2040-2080

Manufacturing Projections: Compare 2021 RWP to Draft 2026 RWP



Mining

Study funded by USGS

Contracted UT Bureau of Economic Geology

Update to the 2011 study

Comprehensive and quantitative assessment of mining water use in Texas

- Oil and gas, aggregates, and coal and lignite
- Historical estimates
- Projections for the 2026 Regional Water Plans

August 2022

<https://www.twdb.texas.gov/waterplanning/data/projections/MiningStudy/index.asp>

Steam-Electric Power

Baseline = highest county water use (2015-2019) + estimated water use for non-responses and proposed facilities

- Historical water use survey
- U.S. Energy Information Administration 860 form – NAICS: 22

If a facility retires before 2020, then the water use is removed from the projections

If RWPGs requested to remove a facility in the previous plan, then facility was removed in the new draft projections

Steam-Electric Power

Water sources: fresh and brackish groundwater, fresh surface water, reuse

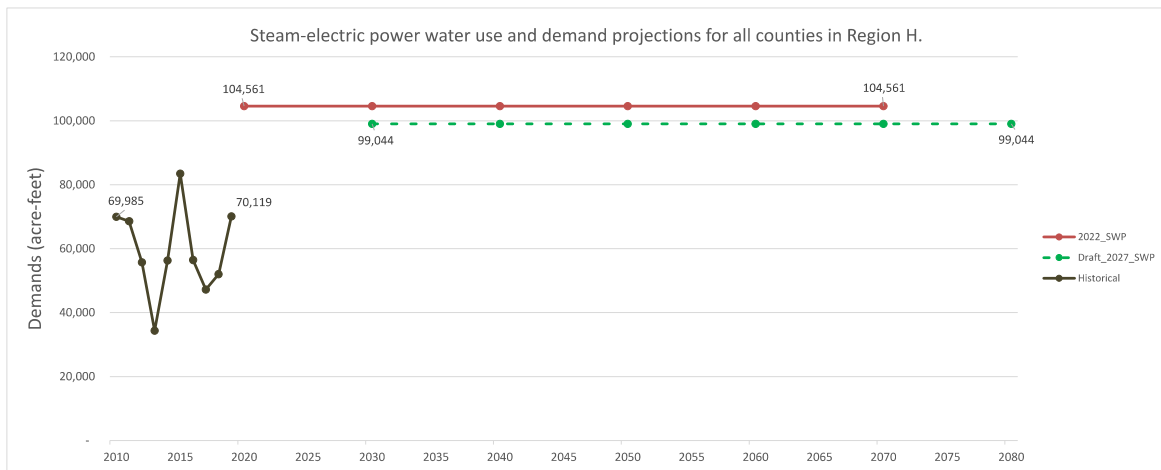
- Consumptive use

2030 – 2080 held constant

Same methodology as the 2021 RWPs

Draft projections released in January 2022

Steam-Electric Power Projections: Compare 2021 RWP to Draft 2026 RWP



2026 RWP Draft Projections

<https://www.twdb.texas.gov/waterplanning/data/projections/2027/projections.asp>

The screenshot shows the Texas Water Development Board website with the 'Water Planning' menu item selected. The 'Population & Water Demand Projections' link is highlighted in yellow in the 'PLANNING DATA' column.

STATE WATER PLAN	REGIONAL WATER PLANNING	PLANNING DATA	WATER USE SURVEY
Interactive State Water Plan	Planning Group Meeting Schedule	Regional Water Planning Database	Online Water Use Survey
2022 State Water Plan	Planning Group Information	Planning Data Dashboard	Printable Water Use Survey
2017 State Water Plan	6th Planning Cycle Information (2026 RWPs)	Population & Water Demand Projections	Historical Water Use Estimates
2012 State Water Plan	2021 Regional Water Plans & Previous Plans	Socio-Economic Impact Analysis	Data Dashboard
2007 State Water Plan	Educational Information	Other Data Resources	Historical Groundwater Pumpage
2002 State Water Plan	Frequently Asked Questions		Service Boundary Editor
1997 State Water Plan			

Municipal Projections Methodology

Historical: 2010 - 2020

Projections: 2030 - 2080



Water User Groups

- Municipal WUGs: utility water use of 100 acre-feet or more
 - 31 TAC § 357.10(43)
- WUGs in the 2021 RWPs will be carried over, as long as they have active public water systems
- All new utilities will be evaluated based on water use from 2015-2019



Population Projections

- Based on Texas Demographic Center's projections for counties in Texas
- Distributed to WUGs
 - Historical 2010-2020 share of growth or share of population
- Difference this planning cycle: if a county's population is projected by TDC to decline, then the TWDB's county population projections will also decline
- 2030 – 2080

Municipal Demand Projections: GPCD

- Gallons per Capita Daily
- Dry-year
- Baseline GPCD = historical
 - Draft: 2021 RWP WUG GPCD
 - New WUGs draft: 2018
- Baseline GPCD minus plumbing code savings already implemented
 - Account for passive savings between historical and projected (2030)
- Water sources: groundwater + surface water
 - Water Use Survey

Municipal Demand Projections: PC Savings

- Plumbing Code Savings
- Update this planning cycle
- Residential:
 - Toilets
 - Showerheads
 - Dishwashers
 - Clothes washers
- Will include commercial toilet and urinal water efficiency savings
- 2030 – 2080

Municipal Demand Projections

$$\text{Projected Demand} = (\text{Population} * (\text{GPCD} - \text{PC Savings}) * 365) / 325,851$$

Water Sources

Source	Groundwater		Surface Water				Reuse
	Fresh	Brackish	Fresh	Saline	Consumptive Use Percentage	Seawater	Reuse
Irrigation	x	x	x	x			x
Livestock	x	x	x	x			
Manufacturing	x	x	x				x
Mining	x	x	x	x			x
Steam-electric	x	x	x		x		x
Municipal	x	x	x	x			

Questions?

Contact:

Katie Dahlberg

katie.dahlberg@twdb.texas.gov

512-463-2449

Stay connected:



AGENDA ITEM MEMO

BOARD MEETING DATE: July 7, 2022

TO: Board Members

THROUGH: Jeff Walker, Executive Administrator
Ashley Harden, General Counsel
Matt Nelson, Deputy Executive Administrator, Office of Planning

FROM: Sarah Backhouse, Manager, Regional Water Planning

SUBJECT: Appointments to the Interregional Planning Council

ACTION REQUESTED

Consider appointing members and alternates to the Interregional Planning Council.

BACKGROUND

The Texas Water Development Board (TWDB) is required by Texas Water Code Section 16.052 to appoint an Interregional Planning Council (Council) made up of one regional water planning group (RWPG) member from each RWPG.

Council membership is to be appointed by the Board each five-year cycle prior to the adoption of a new state water plan and appointments expire once a new state water plan is adopted. In accordance with statute, the inaugural Council dissolved upon adoption of the 2022 State Water Plan in July 2021. Appointments under current consideration are for the second Council, with terms to expire upon adoption of the 2027 State Water Plan.

The purposes of the Council are to:

- improve coordination among the RWPGs, and between the RWPGs and the TWDB in meeting goals of the state water planning process;
- facilitate dialogue regarding regional water management strategies; and
- share operational best practices of the regional water planning process.

KEY ISSUES

In June 2020, the TWDB adopted amendments to 31 Texas Administrative Code (TAC) Section 357.11(k) that require RWPGs to submit a designated alternate for each Council

Our Mission

Leading the state's efforts in ensuring a secure water future for Texas and its citizens

Board Members

Brooke T. Paup, Chairwoman | Kathleen Jackson, Board Member

Jeff Walker, Executive Administrator

member nomination. Designated alternates may assume all responsibilities of the appointed Council member, should the Council member not be able to serve during their term, without additional Board action.

In September 2021, a letter was issued from the TWDB Executive Administrator to all RWPGs requesting the submittal of nominations of at least one member to serve on the Council and one alternate for each member nominated. All RWPGs have taken action to select their nominee and alternate and have submitted nomination information. A summary of RWPG nominations is included as an attachment.

In accordance with 31 TAC §357.11(k)(5), the Council's report is due to the TWDB one year prior to the Initially Prepared Plan deliverable deadline. For this planning cycle, the Council's report will be due March 3, 2024.

RECOMMENDATION

Based on all RWPG nominations, the Executive Administrator recommends appointment of the following members and alternates to the Council, with terms to expire upon adoption of the 2027 State Water Plan.

RWPG	Member	Alternate
A	Ben Weinheimer	Janet Guthrie
B	Randy Whiteman	Russell Schreiber
C	Jenna Covington	Drew Satterwhite
D	Jim Thompson	Fred Milton
E	Scott Reinert	David Etzold
F	Allison Strube	Scott McWilliams
G	Gail Peek	Luci Dunn
H	Mark Evans	Jace Houston
I	John Martin	David Alders
J	Jonathan Letz	Ray Buck
K	David Van Dresar	Ann McElroy
L	Tim Andruss	Jonathan Stinson
M	Jim Darling	Tomas Rodriguez
N	Carl Crull	Teresa Carrillo
O	Melanie Barnes	Ken Rainwater
P	Patrick Brzozowski	Richard Ottis

Attachment:Detailed Summary of Nominations

Summary of Nominations

Region	Nomination	Name	Title	Entity	Interest Category	Beginning Year of RWPG Membership	Committee Membership
A	Member	Ben Weinheimer (Chair)	President and CEO	Texas Cattle Feeders Association	Agriculture	2004	Executive and Agriculture Committees
A	Alternate	Janet Guthrie (Treasurer)	General Manager	Hemphill County Underground Water Conservation District	Water Districts	2005	Executive Committee
B	Member	Randy Whiteman (Chair)	General Manager	Red River Authority of Texas	River Authorities	2018	Executive, Groundwater Technical, and Technical Advisory Committees
B	Alternate	Russell Schreiber	Director of Public Works	City of Wichita Falls	Municipalities	2008	Executive, Groundwater Technical, and Technical Advisory Committees
C	Member	Jenna Covington (Secretary)	Executive Director	North Texas Municipal Water District	Water Districts	2021	Executive Committee
C	Alternate	Drew Satterwhite	General Manager	Greater Texoma Utility Authority	Water Districts	2014	NA
D	Member	Jim Thompson (Chair)	Chief Financial Officer	Ward Timber	Public	2003	Executive Committee

Summary of Nominations

Region	Nomination	Name	Title	Entity	Interest Category	Beginning Year of RWPG Membership	Committee Membership
D	Alternate	Fred Milton	Board Member	Riverbend Water Resources District	Water Districts	2017	NA
E	Member	Scott Reinert (Vice-Chair)	Water Resources Manager	El Paso Water Utilities	Municipalities	2009	Executive Committee
E	Alternate	David Etzold	Owner and Principal Broker	ETZOLD & CO	Real Estate	2003	NA
F	Member	Allison Strube	Director of Water Utilities	City of San Angelo	Municipalities	2018	NA
F	Alternate	Scott McWilliams (Vice-Chair)	General Manager	Upper Colorado River Authority	River Authorities	2020	Executive Committee
G	Member	Gail Peek (Vice-Chair)	Of Counsel	Beard, Kultgen, Brophy, Bostwick & Dickson, PLLC	Small Business	2007	Executive, Scope of Work, and Water Policy Committees
G	Alternate	Luci Dunn	Senior Project Manager	Enprotec/Hibbs & Todd Inc.	Environmental	2017	Nominating & Bylaws and Scope of Work Committees
H	Member	Mark Evans (Chair)	Planning and Governmental Affairs Director	North Harris County Regional Water Authority	Counties	1999	Executive Committee

Summary of Nominations

Region	Nomination	Name	Title	Entity	Interest Category	Beginning Year of RWPG Membership	Committee Membership
H	Alternate	Jace Houston (Secretary)	General Manager	San Jacinto River Authority	River Authorities	2013	Executive, Scope of Work, Surface Water Supply, and Water Management Strategy Committees
I	Member	John Martin (Secretary)	General Manager	Southeast Texas Groundwater Conservation District	Groundwater Management Areas	2012	Executive Committee
I	Alternate	David Alders	Rancher	Carrizo Creek Corporation	Agriculture	1999	NA
J	Member	Jonathan Letz (Chair)	County Commissioner	Kerr County Commissioners Court	Small Business	1998	Executive Committee
J	Alternate	Ray Buck	General Manager	Upper Guadalupe River Authority	River Authorities	2005	NA
K	Member	David Van Dresar (Chair)	General Manager	Fayette County Groundwater Conservation District	Water Districts	2009	Executive, Legislation & Policy, Population & Water Demand, and Water Management Strategy Committees

Summary of Nominations

Region	Nomination	Name	Title	Entity	Interest Category	Beginning Year of RWPG Membership	Committee Membership
K	Alternate	Ann McElroy	Grant Writer/ Environmental Advocate		Environmental	2017	Nominations, Water Management Strategy, and Water Modeling Committees
L	Member	Tim Andruss (Chair)	General Manager	Victoria County Groundwater Conservation District	Water Districts	2013	Executive and Population & Water Demands Committees
L	Alternate	Jonathan Stinson	Deputy General Manager	Guadalupe Blanco River Authority	River Authorities	2021	Population & Water Demands Committee
M	Member	Jim Darling (Chair)	Chair	Rio Grande Regional Water Authority	River Authorities	2004	Executive, Chapter 7 Drought Management Strategy, Municipal Demand, and Rio Grande Groundwater Exportation Committees

Summary of Nominations

Region	Nomination	Name	Title	Entity	Interest Category	Beginning Year of RWPG Membership	Committee Membership
M	Alternate	Tomas Rodriguez	Retired, Engineer	Previously with the City of Laredo	Public	2008	Environmental, Groundwater, Municipal Demand, Rio Grande Groundwater Exportation, and Water Management Strategy Committees
N	Member	Carl Crull	Owner	Crull Engineering, LLC	Other	2016	NA
N	Alternate	Teresa Carrillo	Research Scientist	Texas A&M University Corpus Christi, Center for Coastal Studies	Environmental	2002	NA
O	Member	Melanie Barnes	Dr.	Texas Tech University	Public	2005	NA
O	Alternate	Ken Rainwater	Dr.	Texas Tech University	Public	2002	Nominating and Technical Committees
P	Member	Patrick Brzozowski (Secretary)	General Manager	Lavaca-Navidad River Authority	River Authorities	2003	Executive Committee
P	Alternate	Richard Ottis		Rice Belt Warehouse	Industries	1998	NA

NA = Not applicable.

