

# UPPER GULF COAST AQUIFER PLANNING AREA (GMA 14)

## Joint Planning Group Meeting

Wednesday, January 30, 2019  
10:00 AM

### MEETING MINUTES

A regular meeting of GMA 14 was held Wednesday, January 30, 2019, at 10:03 AM, in the board room of the Lone Star Groundwater Conservation District located at 655 Conroe Park North Drive, Conroe, Texas.

The meeting was called to order by John Martin (Southeast Texas GCD) at 10:03 AM with a roll call of District representatives and Interlocal Agreement Participants. Districts represented included: Sherry Plentl, Brazoria County GCD, Zach Holland, Bluebonnet GCD, Kathy Turner Jones, Lone Star GCD, Gary Ashmore, Lower Trinity GCD and John Martin, Southeast Texas GCD. Interlocal Agreement Participants included: Commissioner Kirk Hanath, Washington County Commissioner; Robert Thompson, Fort Bend Subsidence District. Also, in attendance at the meeting were Larry French, Texas Water Development Board (TWDB); Mr. Wade Oliver, Intera, Inc.; a quorum of the Lone Star GCD Board of Directors; and members of the public. (*see Attachment "A" for a list of attendees*).

Mr. Martin called for and opened the floor to public comment. With no public comment registered or offered, Mr. Martin proceeded with requests for and receipt of posted notices from District Representatives. Mr. Martin then asked for consideration of the approval of the minutes from the GMA 14 meeting on September 26, 2018. After discussion and upon a motion by Ms. Jones, seconded by Ms. Plentl, the minutes for the September 26, 2018 meeting were approved unanimously.

Mr. Martin called for the presentation of information from the Texas Water Development Board and discussions of items of interest to the GMA. Mr. French provided general information from TWDB, including announcements of the Region H MAG peak factor request update and a PGMA Report completed by TCEQ and assisted by TWDB.

Mr. Martin called for a presentation and discussion by districts of recent activities of interest or accomplishments impacting the GMA 14 planning group. Mr. Martin noted water level measurements being conducted in his district. Ms. Jones requested the floor be given to Lone Star GCD Vice President Harry Hardman to provide a statement and address the group. (*see Attachment "B" for Lone Star Letter – Statement to GMA 14*).

*Meeting convened as a meeting of the GMA 14 Joint Planning Interlocal Agreement Participants.*

The GMA 14 Joint Planning Interlocal Agreement Participants meeting was called to order at 10:21 AM.

Mr. Martin recognized Mr. Turco who provided the GMA 14 Interlocal Agreement Financial Report which included an update and status reports from participants on interlocal participation. Mr. Turco noted executed agreements had been received from all but Chambers County and all had paid, partially paid, or provided a schedule for payment of contributions. Mr. Hanath asked whether the request by Mr. Hardman on behalf of Lone Star GCD would increase or impact costs and the proposed budgeted items. Mr. Oliver stated that the proposal included three scenarios which would be directed by the GMA. If there were additional scenarios requested or needed, that would be when an impact to the existing proposal and budget would exist.

Mr. Martin called for a discussion and consideration of aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another (as required by Texas Water Code 36.108(d)(1)). Mr. Oliver was given the floor to provide a presentation (*see Attachment "C" for aquifer uses and conditions materials*). There was considerable discussion between Lone Star GCD consultants and Board Members and GMA 14 participants noting the need to understand the proposal from Lone Star GCD including delineating boundaries of the common aquifer, the metrics for evaluation, what are we asking the model to tell us and what level of averaging of cells for DFCs are proposed to be considered in the framework of the GMA.

Mr. Martin called for discussion and possible action regarding path forward for GMA 14 to accomplish statutory mandates for Round 3 Joint Planning. Mr. Oliver referenced the general timeline of meeting every other month and criteria proposed to be covered for the next meeting.

With no further comments from the participants, Mr. Martin adjourned the meeting of the GMA 14 Interlocal Agreement Participants and reconvening the Joint Planning Group meeting at 11:30 AM.

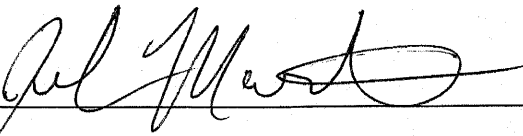
*Meeting of the GMA 14 Joint Planning Interlocal Agreement Participants adjourned.*

Mr. Martin reconvened the GMA 14 meeting and called for other business before GMA 14. Mr. Turco introduced a new addition to the subsidence districts, Dr. Tina Petersen, who has extensive experience in water planning and will also serve as Mr. Turco's alternate in his absence.


Mr. Martin called for discussion of next meeting date, location, and agenda items. It was noted that Lone Star GCD would propose an agenda item for the next meeting for clarification and presentation of their request following work and a meeting of their Board and various consultants involved with GMA 14. The next meeting was set for March 27, 2019 at 9:00 AM to be held at the offices of the Lone Star Groundwater Conservation District, located at 655 Conroe Park North, Conroe, Texas 77303.

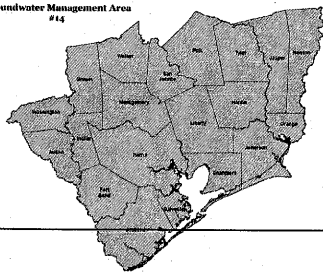
Without further discussion or comment and there being no further business, the meeting was adjourned at 11:36 AM.

PASSED, APPROVED, AND ADOPTED THIS 27 day of March, 2019

  
\_\_\_\_\_  
Chairman

ATTEST:

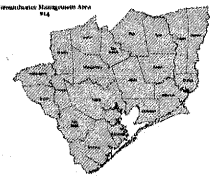
  
\_\_\_\_\_  
Secretary



# GROUNDWATER MANAGEMENT AREA (GMA 14) JOINT PLANNING MEETING SIGN IN SHEET

January 30, 2019  
10:00 am

Member District	District Representative	Date	Signature
Bluebonnet GCD	Zach Holland	1/30/19	<i>Zach Holland</i>
Brazoria County GCD	Sherry Plentl	1/30/19	<i>Sherry Plentl</i>
Lone Star GCD	Kathy T. Jones	1/30/19	<i>Kathy T. Jones</i>
Lower Trinity GCD	Gary Ashmore	1/30/19	<i>Gary Ashmore</i>
Southeast Texas GCD	John Martin	1/30/19	<i>John Martin</i>
Interlocal Participant	Representative	Date	Signature
Harris Galveston Subsidence District	Mike Turco	1/30/19	<i>Mike Turco</i>
Fort Bend Subsidence District	Robert Thompson	1/30/19	<i>Robert Thompson</i>
Washington County	Judge John <del>Brieden</del> <b>DURRENBERGER</b>	<i>KICK HANATH</i> 1/30/19	<i>Kick Hanath</i>
Chambers County	Pudge Willcox		



# GMA 14 SIGN IN SHEET

January 30, 2019  
10:00 AM

Request to Speak? (Yes or No)	NAME	AFFILIATION	CITY, STATE, ZIP	E-Mail
NO	Tom michel	SJRA		tmichel@sjra.net
No	Larry French	TWDB		larry.french@twdb.texas.gov
No	Robert Thompson	FBSD	Richmond	
No	Bill Hutchison	Consultant	Jamaica Beach, TX	billhutch@texas.gov
No	Mike Keester	LRE Water		mike.keester@LREWater.com
NO	Mike Thomhill	TGI <del>SB</del>	Round Rock, TX	—
No	TINA FELKAI	SJRA	CONROE, TX	ON FILE
No	BOB HARDEN	HHE	AUSTIN, TX	on file
	Wade Oliver	INTERA	Sugar Land, TX	woliver@intera.com
No	Deborah Piemonti	INTERA	Begon Bend, TX	dpiemonti@intera.com
NO	Tina Petersen	H&SD	Houston TX	tpetersen@subsidence.org
No	STUART TRAYLOR	LSGCD	COOLIDGE 77304	
No	Amy Muttoni	BRA	Waco, TX	amy.muttoni@bra705.org
No	Claude Humbert	SCUD	Spurg, TX	Claude_humbert@Sbcglobal.net





January 30, 2019

Kathy Turner Jones  
*General Manager*

Board of  
Directors

Webb Melder  
*President*

Harry Hardman  
*Vice-President*

Stuart Traylor  
*Secretary*

Jim Spigener  
*Treasurer*

Jon Paul Bouché

Jonathan Prykryl

Larry A. Rogers

Good morning and welcome back to our facility! My name is Harry Hardman and I am Vice President of the LSGCD, which I will refer to as “Lone Star.”

I am here today to share with you the concerns and desires of the newly elected Lone Star Board. I am not sure of everyone’s familiarity with the challenges in our District, and I am also new on the job, so I’ll provide a brief synopsis of the circumstances we find ourselves in today. The District’s **prior** method of regulation was the subject of multi-year litigation that began in 2015. Several permittees sued the District challenging the validity of Lone Star’s regulations. After three years of litigation, the Montgomery County District Judge found the regulations to be invalid and exceeding the District’s authority granted by the Legislature. The past District Board filed an appeal of that decision, and fortunately, the litigation was settled last week. The settlement will result in a final judgment declaring the regulations void and unenforceable, and it will keep the parties out of the courthouse for years to come. Now that the District is out of the courthouse, we can now focus on the important job of rebuilding our regulatory program in accordance with the authority granted by the Legislature.

As each of you are likely aware, the DFCs adopted by Lone Star were also subject to two different petitions—both claiming the DFCs were unreasonable. The DFC contested case ended with a Final Order declaring the District’s DFCs no longer reasonable. The order was also based on the District’s new management policy – one that allows measured water level declines over time.

As you are aware, last March, GMA 14 voted to NOT adopt amended DFCs applicable to Lone Star for the second round of joint planning, but instead to consider these in conjunction with the third round of planning. In studying this issue, I share that the new Board understands your thinking and agrees it would have been problematic to adopt new DFCs based on an arbitrary and prescribed increase in pumping, and also that it is difficult to adopt new DFCs just for Lone Star without affecting the aquifer conditions in nearby counties. I’ll bring this up more in a minute, but now, the new Board finds itself without a set of reasonable DFCs at this time.

To add to our challenge, the new Board now also has a past due management plan, and we must adopt a new one as soon as we can. But, a management plan requires listing the DFCs that are applicable to the District, and we do not have reasonable ones! We have an unprecedented situation here.

So, let’s see—the District has to get a new management plan approved, adopt new rules consistent with the plan and Chapter 36 authority, and adopt reasonable DFCs. Just to get back to square. Quite a task for a newly elected Board!

In looking at some of the causes and characteristics of our situation, the new Board has taken time to review what has happened. The Board believes it was partly the nature of the DFCs formed in the 2<sup>nd</sup> Round of Planning that contributed to our current challenges. The past DFCs were adopted by assuming pumping in each county, then running the model with the assumed pumping to calculate the DFCs by county. In other words, the pumping amount was decided first and then used to back-calculate the corresponding DFC. Because our aquifers do not stop at the county boundaries, it is obvious that if pumping is changed in one county, it changes drawdown in that county AND can change the DFCs in other counties in GMA 14, as well.

Our Board would like to propose a different approach for the 3<sup>rd</sup> Round of joint planning. A method that hopefully provides more robustness to our efforts. In this way, we may avoid the mistakes of Round 2.

In the Texas Supreme Court's 2012 ruling in the *Day Case*, the Court prophetically stated, "One purpose of groundwater regulation is to afford every owner *of a common, subsurface reservoir* a fair share." Further, the Senate Committee on Agriculture, Water and Rural Affairs in its Dec. 2018 interim report recognized the need for similar DFCs for GCDs over the same aquifer by specifically stating "*two GCDs over the same aquifer with similar science-based hydrological formations should not have dissimilar DFCs.*"

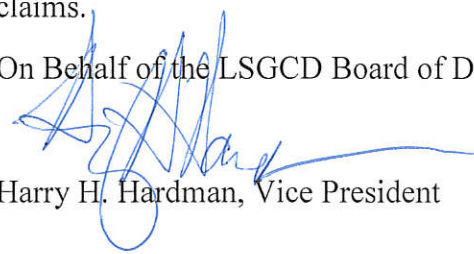
We look at this, the problems we have had, the lessons we have learned as a result of those problems, and we would like GMA 14 to first identify the boundaries of each common, subsurface reservoir in GMA 14 for the purpose of adopting DFCs. I understand there are commonly accepted methods to do this. Methods the State of Texas has followed for 70 years.

With the boundaries of the common reservoirs in hand, we can then set appropriate DFCs for each delineated common reservoir.

I hope we can agree that we do not know which future owners will choose to use their property, or which ones may choose to just hold their property, or who might want to sell their property. Fortunately, if we look at the common reservoir as a unit of management, we begin the process of managing in a way that makes these decisions much less critical. Managing to a standard as opposed to specific users ensures fair and impartial treatment for all owners regardless of what happens in the future.

Thank you for the opportunity to address you today. The new board looks forward to working with GMA 14 in a manner that recognizes groundwater is private property, and in so doing regulate in a legal manner to avoid future litigation, including taking claims.

On Behalf of the LSGCD Board of Directors



Harry H. Hardman, Vice President



# Discussion and Consideration of Aquifer Uses and Conditions

A Presentation to GMA 14 Joint  
Planning Interlocal Agreement  
Participants

January 30, 2019



Presented By:

 **INTERA**  
GEO SCIENCE & ENGINEERING SOLUTIONS

# Objectives

- **Joint Planning Overview**
- **Review Proposed Schedule**
- **Review Aquifer Uses and Conditions**
- **Next Meeting**

# Groundwater Acronyms and Definitions

**GCD - Groundwater Conservation District:** any district or authority created under Section 52, Article III, or Section 59, Article XVI, Texas Constitution, that has the authority to regulate the spacing of water wells, the production from water wells, or both. (TWC Ch. 36)

**GMA - Groundwater Management Area:** an area designated and delineated by the Texas Water Development Board under Chapter 35 as an area suitable for management of groundwater resources. (TWC Ch. 36)

**DFC - Desired Future Condition:** a quantitative description, adopted in accordance with Section 36.108, of the desired condition of the groundwater resources in a management area at one or more specified future times. (TWC Ch. 36)

**MAG - Modeled Available Groundwater:** the amount of water that the executive administrator [of TWDB] determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108. (TWC Ch. 36)

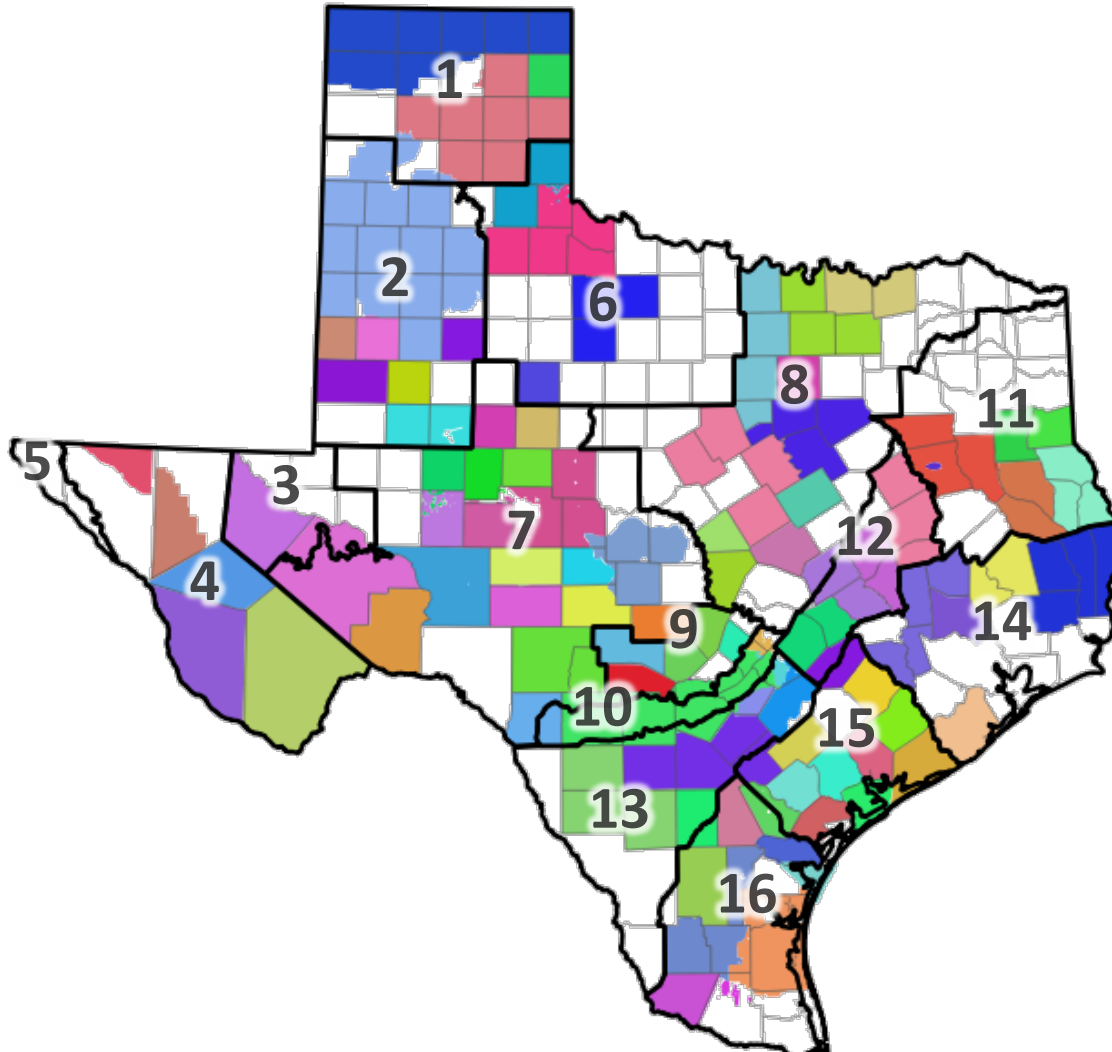
**Aquifer:** A rock unit that can yield economically usable quantities of water to a well.

**Water Level (Head):** The level to which water rises in a well. A measure of the pressure in an aquifer.

**Drawdown:** A water level change (usually drop) at a well or on a regional basis.

**Recharge:** The amount of water that infiltrates to the water table of an aquifer.

# GMA and GCDs in Texas



## Balancing Test

- DFCs must provide “*a balance between the highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater and control of subsidence in the management area*”

# Consideration of Factors

- Aquifer uses or conditions
- Water supply needs and management strategies
- Hydrological conditions
- Other environmental impacts
- Impact on subsidence
- Socioeconomic impacts
- Impact on private property rights
- Feasibility of achieving the DFC
- Any other relevant information

# Balancing Test

**Conservation,  
Preservation, Prevention  
of Subsidence, etc.**

**Highest Practicable  
Level of Groundwater  
Production**

Aquifer uses or  
conditions

Aquifer uses or  
conditions

Environmental  
Impacts

Water supply needs and  
management strategies

Water supply needs and  
management strategies

Socioeconomic  
Impacts

Socioeconomic  
Impacts

Subsidence  
Impacts

Feasibility of  
achievement

Feasibility of  
achievement

Hydrological  
Conditions

Private Property  
Rights

Private Property  
Rights

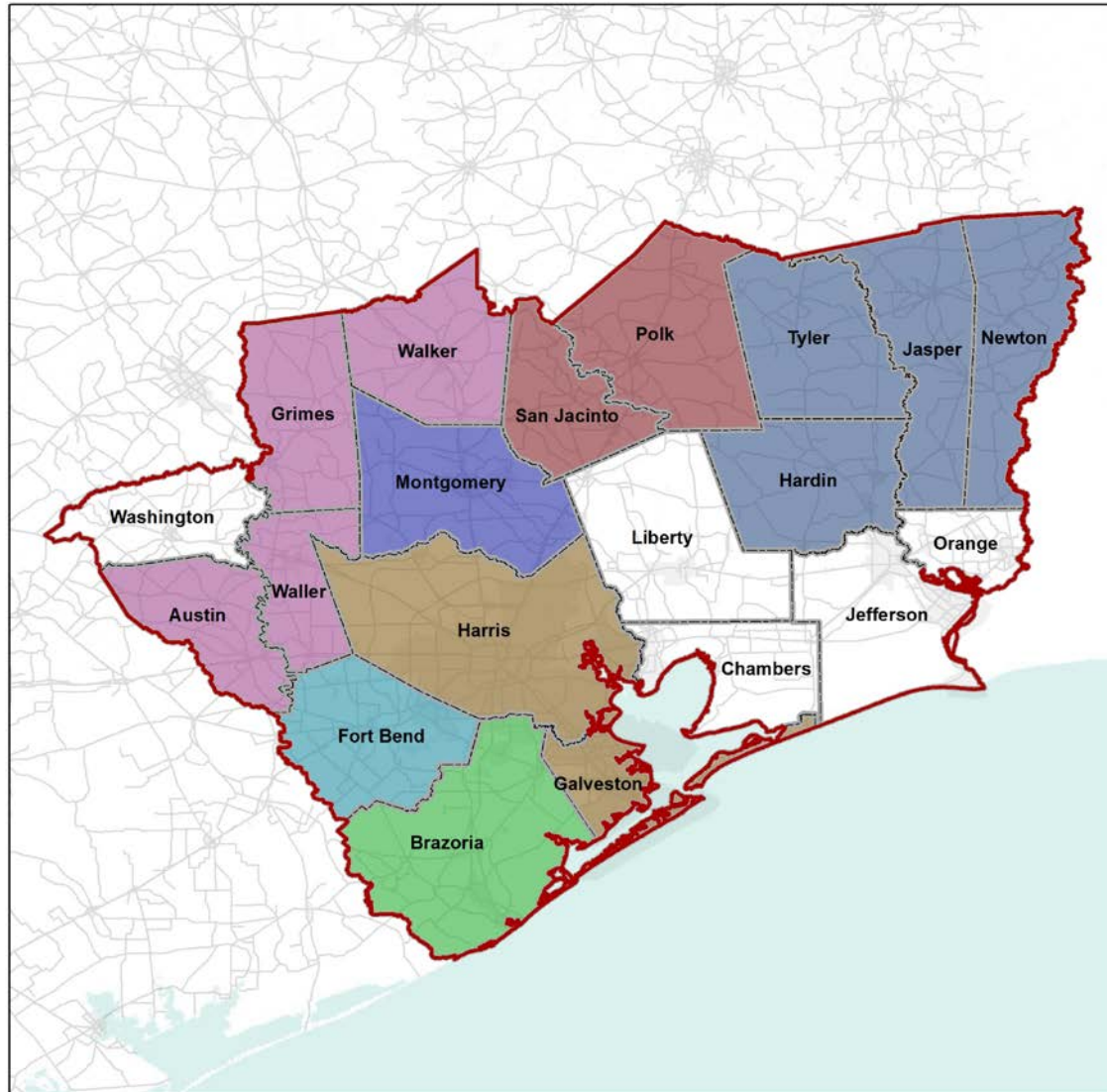
Hydrological  
Conditions

# Proposed Schedule

Main Joint Planning Topics for Meetings	2019												2020												2021				
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May
Factor 1: Aquifer Uses and Conditions	█																												
Factor 2: Water Supply Needs and Management Strategies		█	█																										
Factor 3: Hydrological Conditions				█	█																								
Factor 4: Environmental Impacts												█	█																
Factor 5: Impact on Subsidence														█	█														
Factor 6: Socioeconomic Impacts																█	█												
Factor 7: Private Property Interests and Rights																		█	█										
Factor 8: Feasibility of Achieving the DFCs																				█	█								
Factor 9: Other Relevant Information																						█	█						
Balancing Test Model Runs						█	█																						
Selection of Model Runs and Metrics for Evaluation								█	█																				
Review of Model Run Results										█	█																		
Draft Explanatory Report Development													█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Propose DFC(s) for Adoption (Deadline May 1, 2021)																									█				
<b>Proposed Meeting Dates</b>	*		*		*		*		*		*		*		*		*		*		*		*		*				

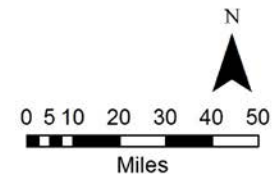


# GCDs and Subsidence Districts in GMA 14



## Groundwater Conservation Districts

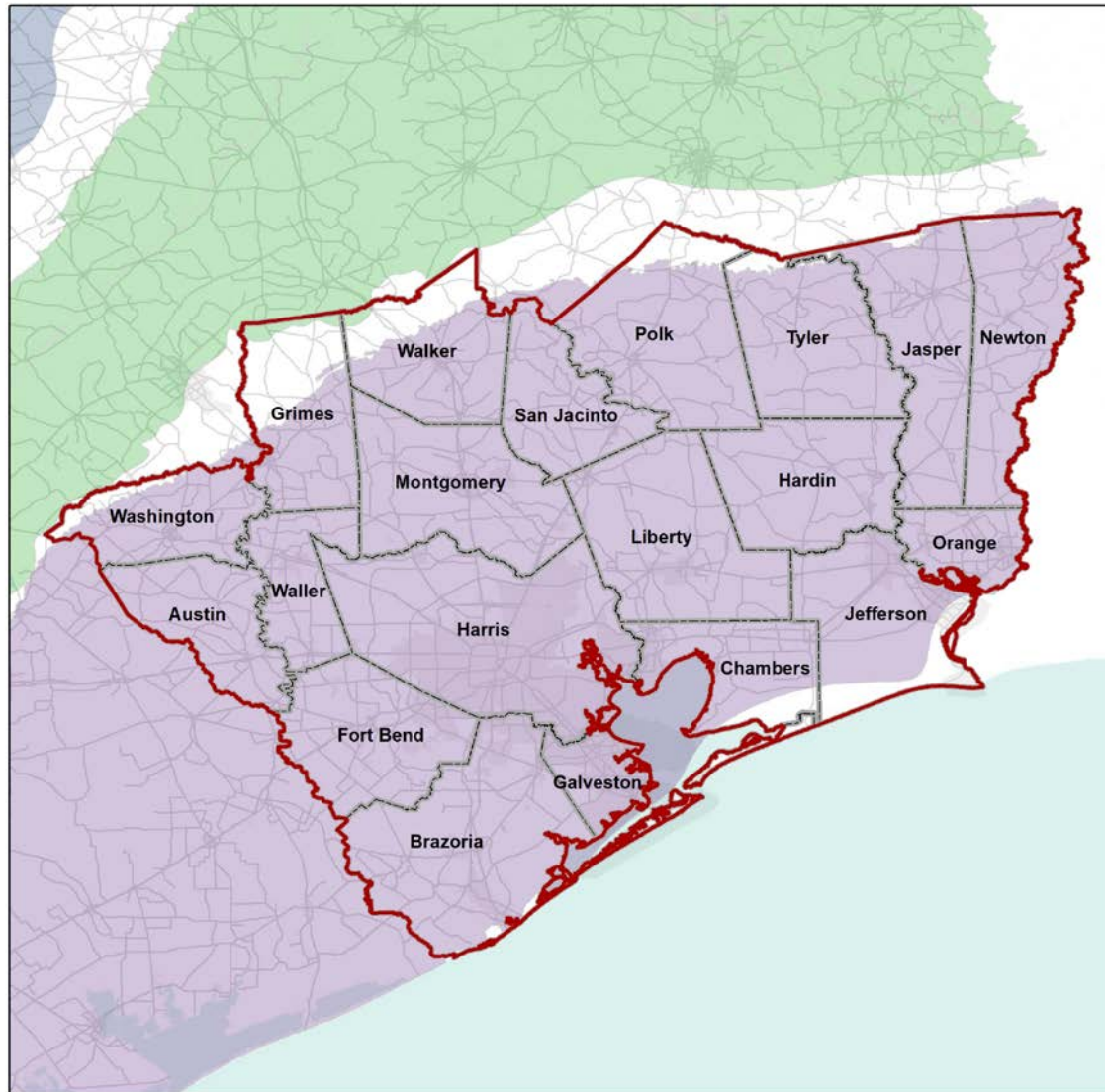
- Highways
- ▭ GMA 14
- ▭ Counties
- ▭ Cities
- ▭ Bluebonnet GCD
- ▭ Brazoria County GCD
- ▭ Fort Bend SD
- ▭ Harris-Galveston Coastal SD
- ▭ Lone Star GCD
- ▭ Lower Trinity GCD
- ▭ Southeast Texas GCD



Prepared by:

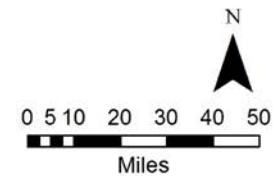


# Major Aquifers



Major Aquifers

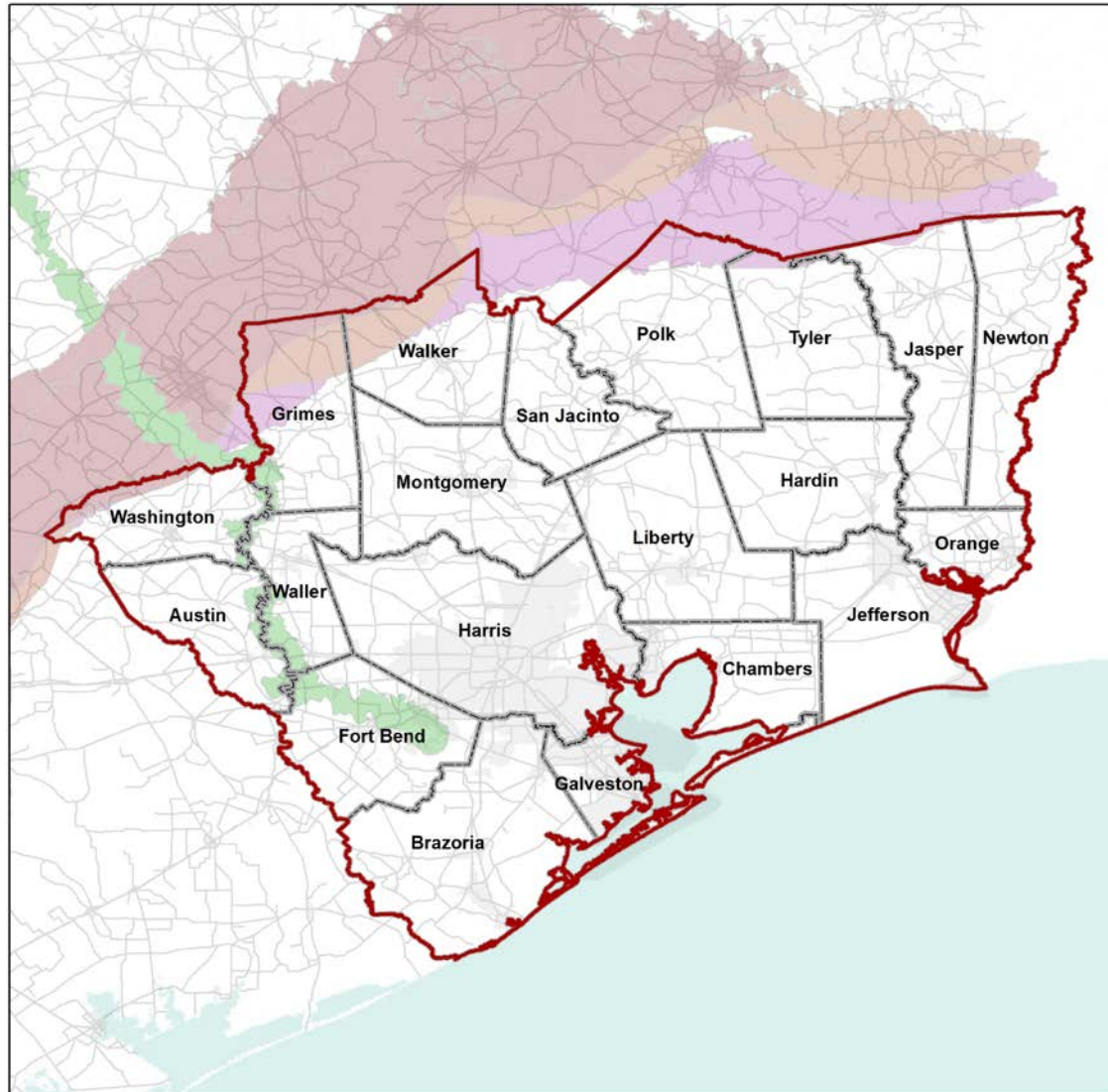
- GMA 14
- Counties
- Highways
- Cities
- Carrizo Aquifer
- Gulf Coast Aquifer
- Trinity Aquifer



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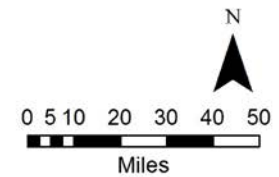


# Minor Aquifers



Minor Aquifers

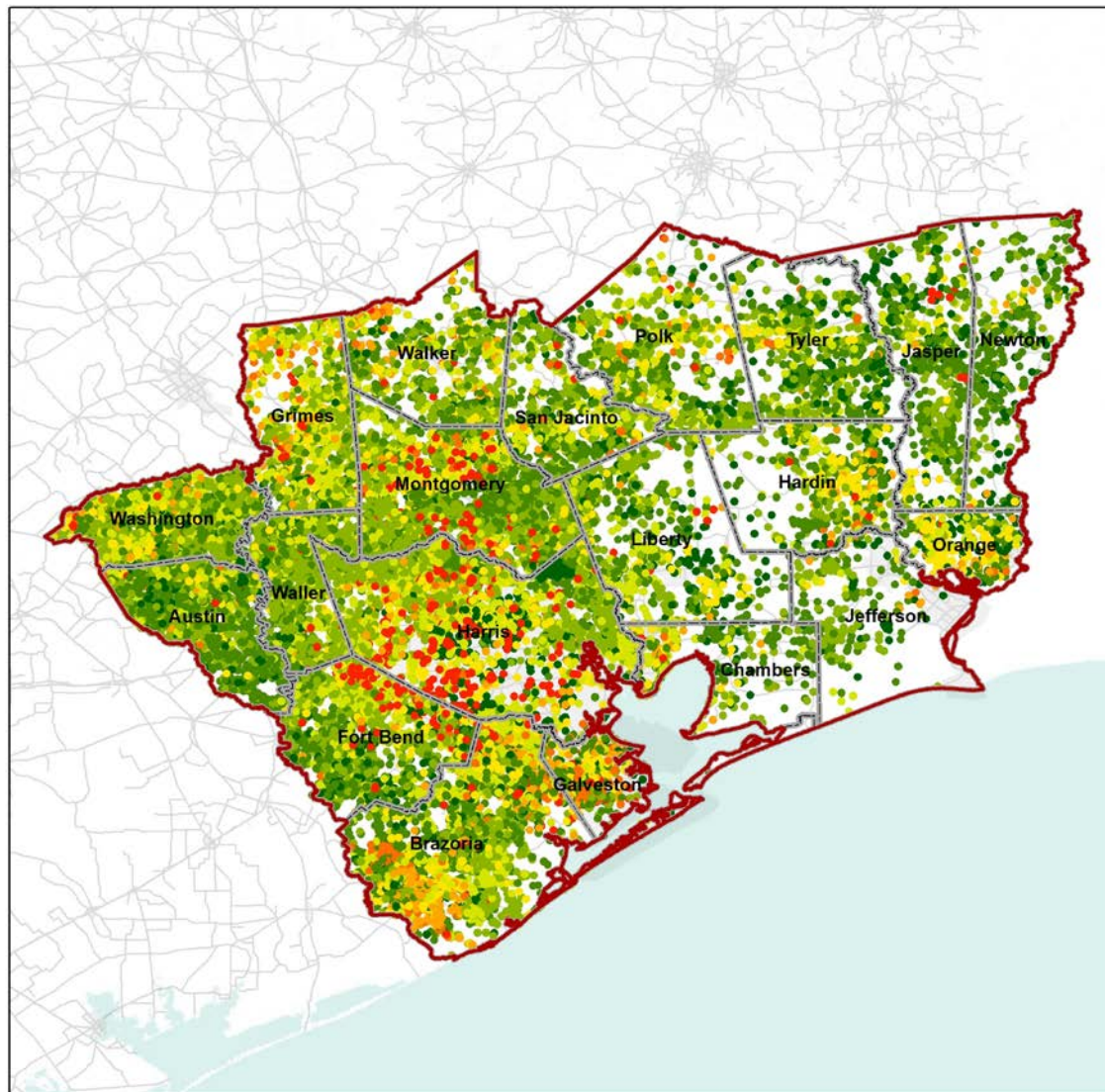
- GMA 14
- Counties
- Highways
- Cities
- Brazos River Alluvium Aquifer
- Queen City Aquifer
- Sparta Aquifer
- Yegua-Jackson Aquifer



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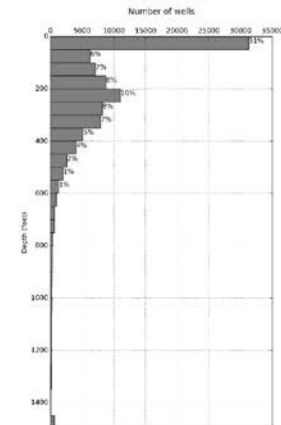


# Well Depths



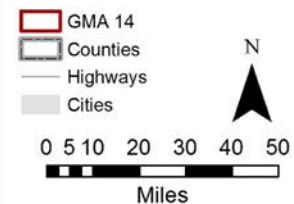
## Well Depths GMA 14

Average depth (feet): 226  
Total number of wells: 100866



### Well Depths (feet)

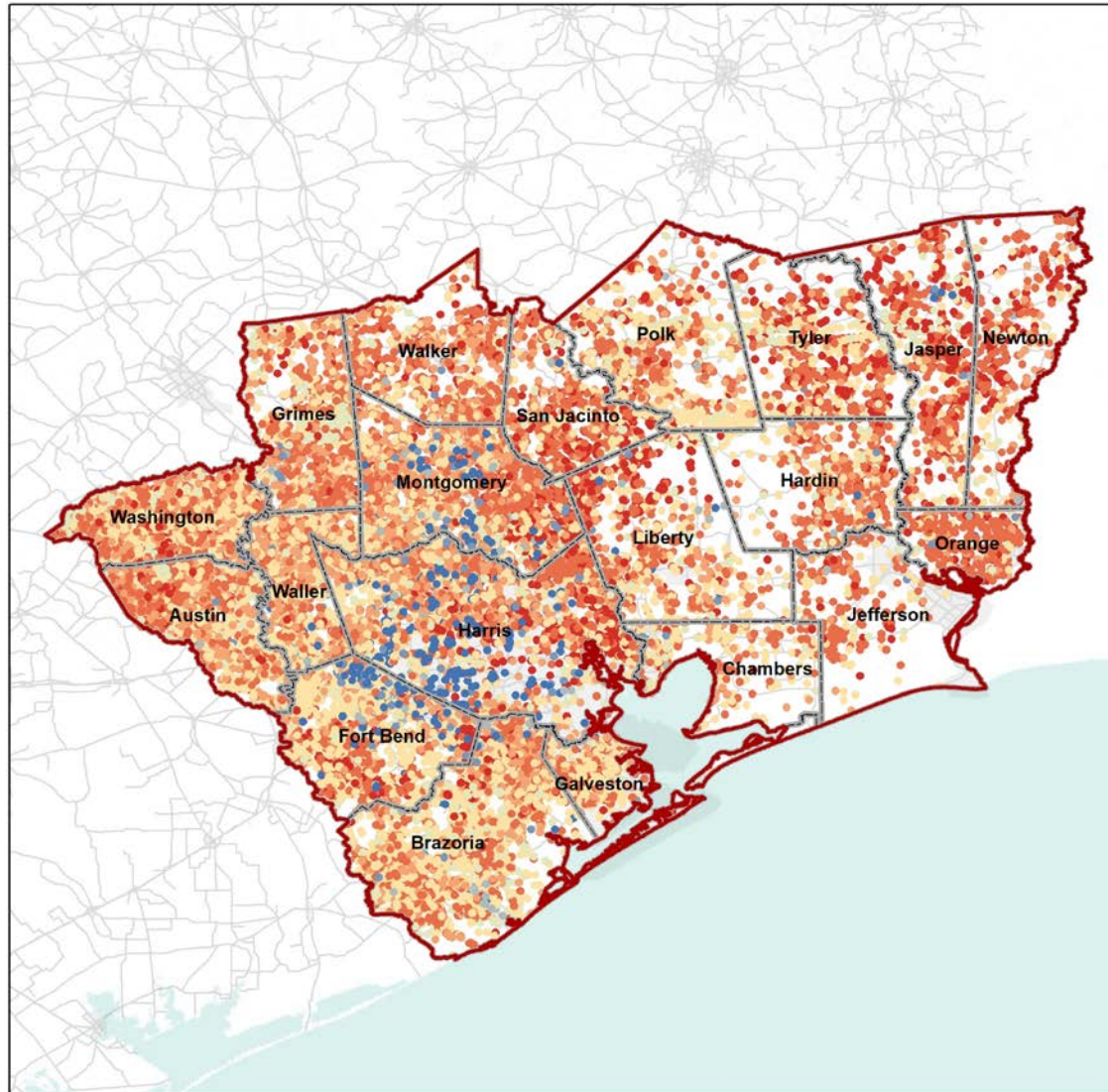
- < 100
- 101 - 200
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 600
- 601 - 700
- > 700



Prepared by:

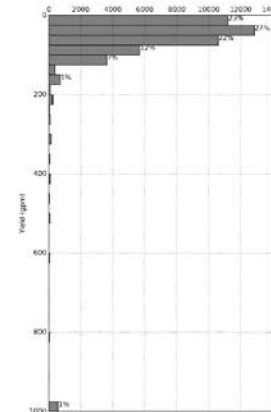


# Well Yields



## Well Yields GMA 14

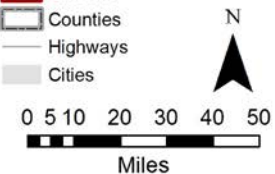
Average yield (gpm): 75  
Total number of wells: 46699



### Well Yields (gallons per minute)

- < 10
- 11 - 30
- 31 - 50
- 51 - 100
- 101 - 300
- 301 - 500
- 501 - 1000
- > 1000

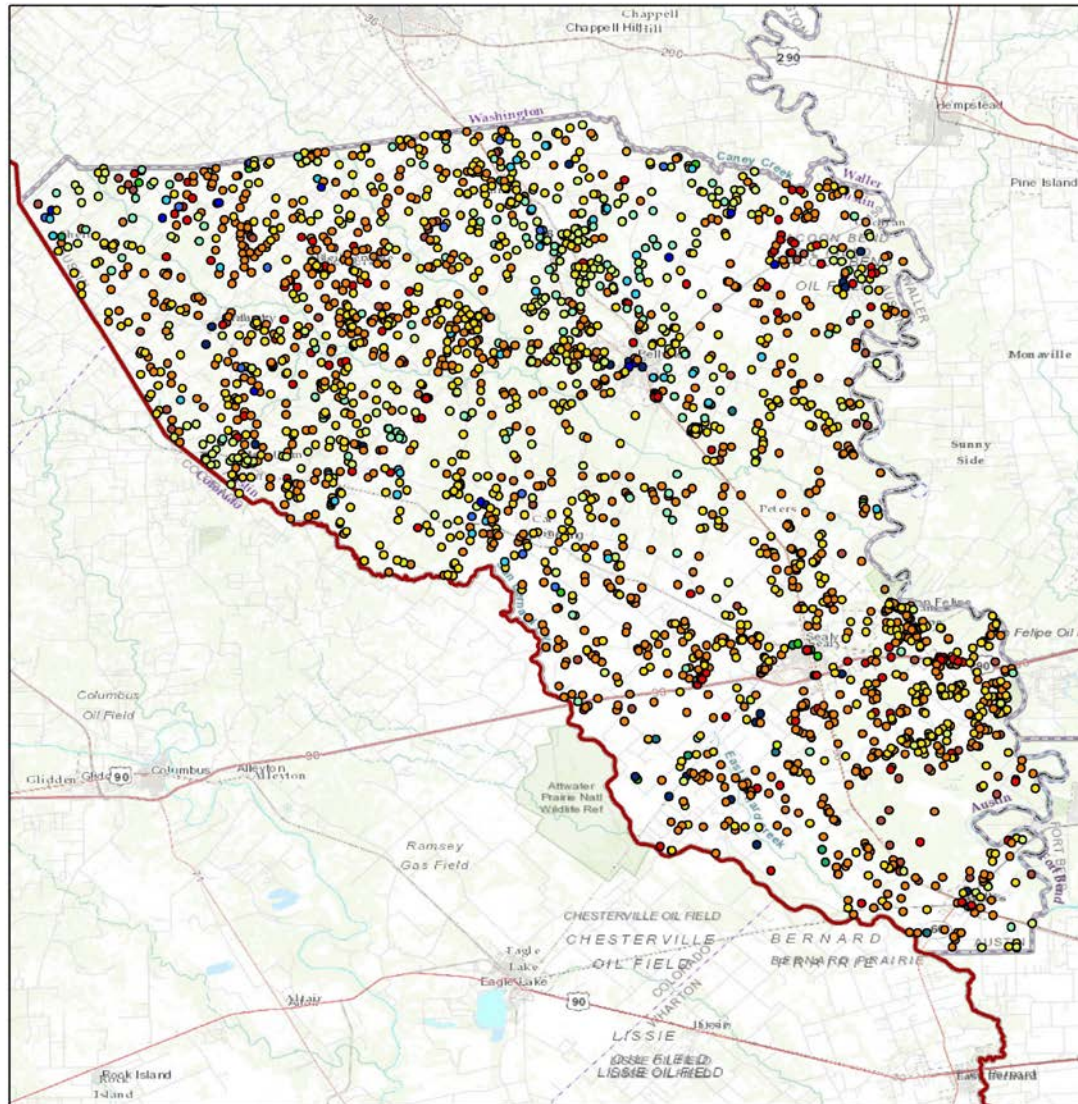
- GMA 14
- Counties
- Highways
- Cities



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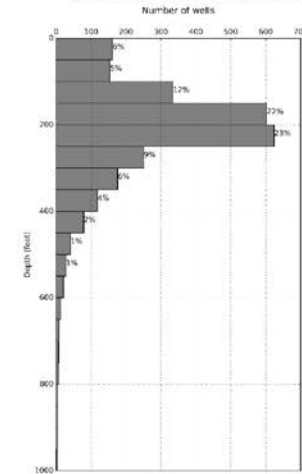


# Information Available for Each County



## Well Depths Austin

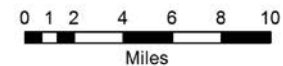
Average Depth (feet): 232  
Total number of wells: 2656



## Well Depth (feet)

- < 100
- 101 - 200
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 600
- 601 - 700
- > 700

- ▭ GMA 14
- ▭ Counties



Prepared by:

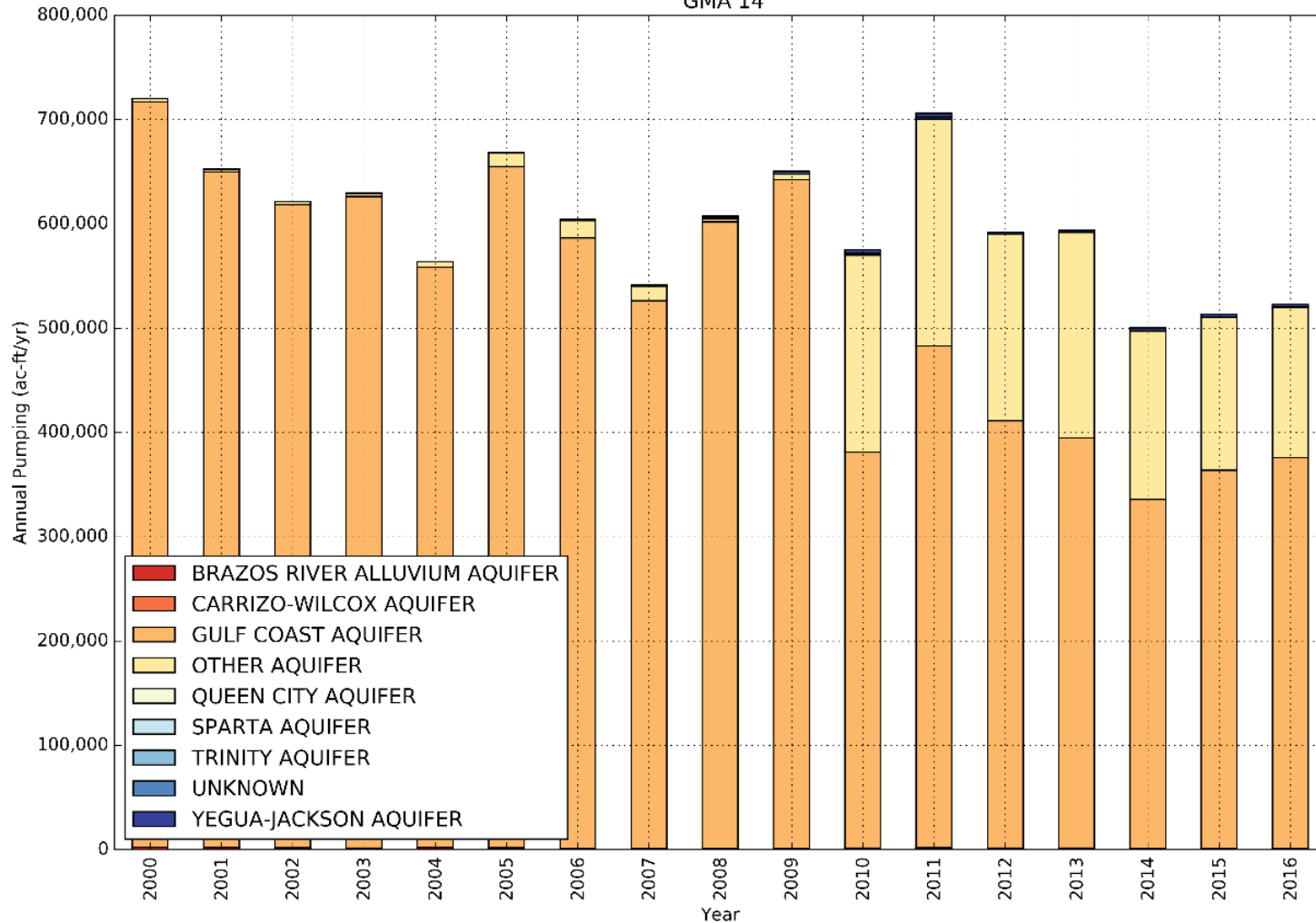


Source: Submitted Drillers Reports and Groundwater Database - Texas Water Development Board 2018



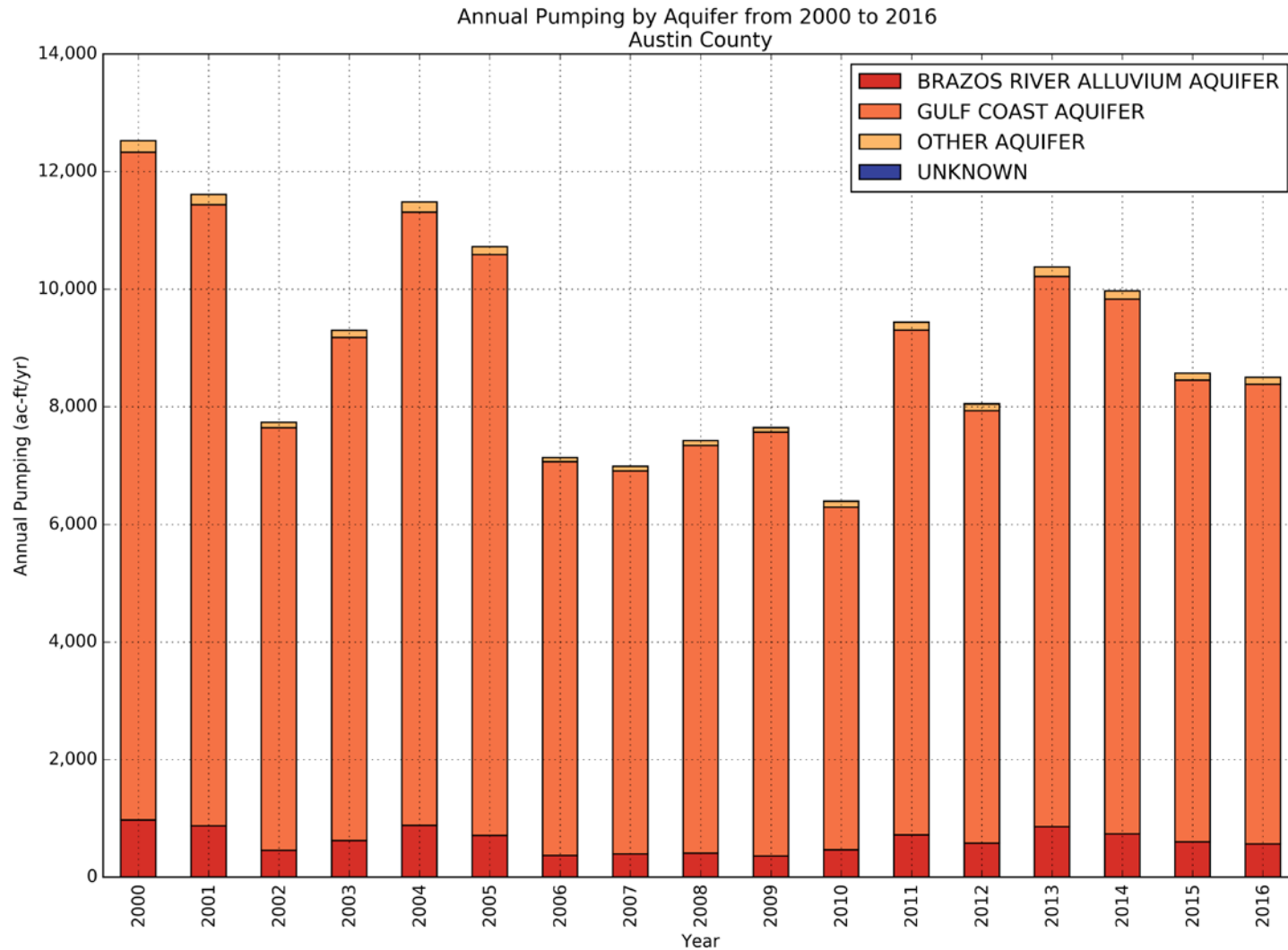
# Annual Pumping by Aquifer

Annual Pumping by Aquifer from 2000 to 2016  
GMA 14





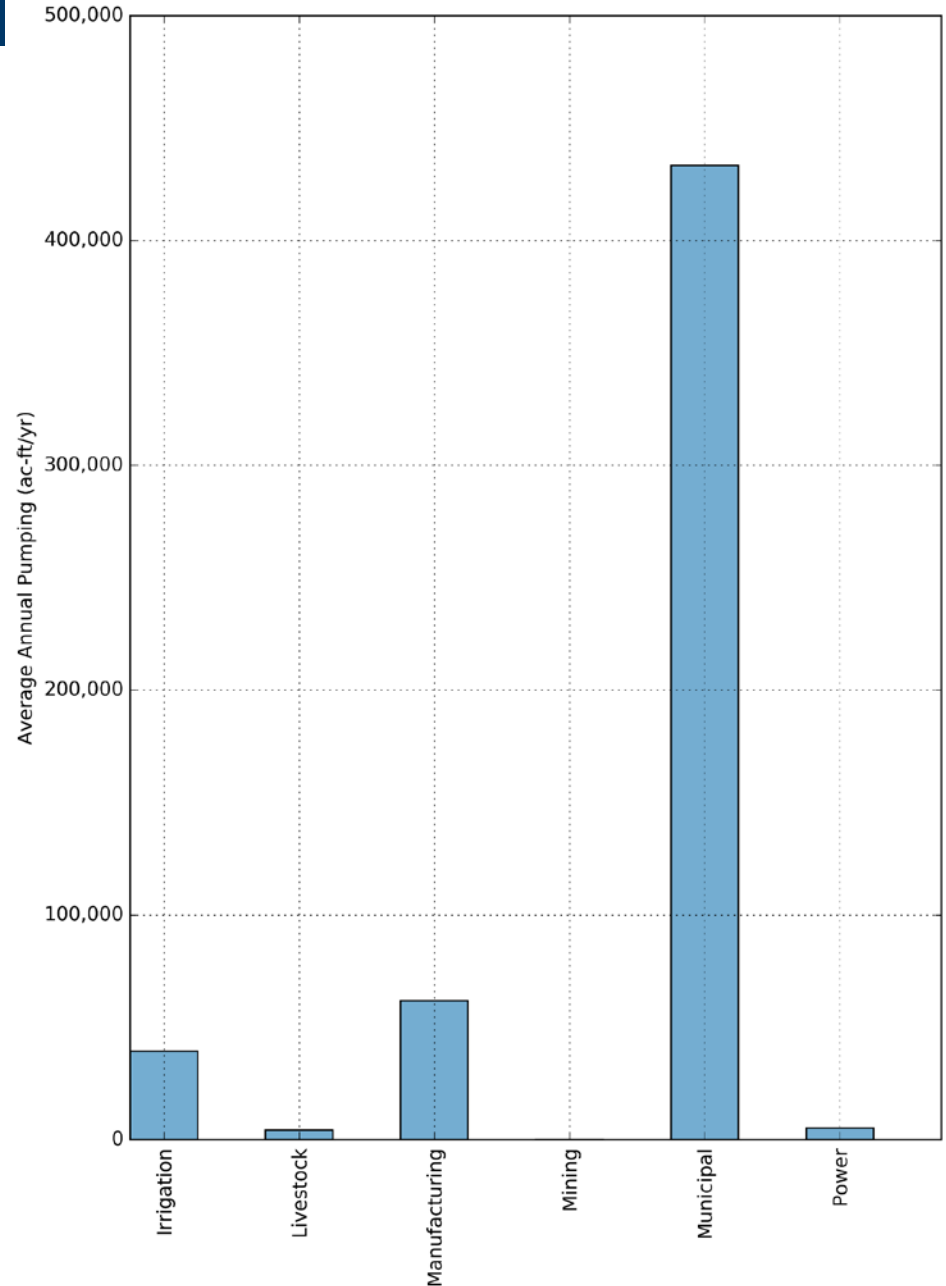
# Annual Pumping by Aquifer



# Annual Pumping by Type

- Also available for each county

Average Annual Pumping from 2012 to 2016 by Use Type  
GMA 14



## Next Meeting

- **Water Supply Needs and Water Management Strategies in the State Water Plan**



 **INTERA**  
GEOSCIENCE & ENGINEERING SOLUTIONS