



May 13, 2020

Workshop & Board Meeting



Board Meeting
&
Workshop

Clearwater Underground Water Conservation District
700 Kennedy Court
Belton, Texas

Wednesday
May 13, 2020
1:30 p.m.

**Clearwater Underground Water Conservation District
Board Members**

**Leland Gersbach, Director Pct. 1
President**

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Vice President**

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Revised Dec. 26, 2018

**NOTICE OF THE MEETING OF THE
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT
TO BE HELD BY TELECONFERENCE AND VIDEOCONFERENCE
May 13, 2020 AT 1:30 P.M.**

In accordance with Governor Abbott's declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD's Board of Directors will hold its regular Board meeting and Public Hearing by telephonic conference call and, for redundancy, videoconference. The public may access this meeting and make public comment by phone, pc, tablet and/or notebook using the contact information and instructions on pages 2 & 3 of this notice.

Notice is hereby given that the above-named Board will hold a Workshop and Board meeting on Wednesday, May 13, 2020 beginning at 1:30 p.m. The public will not be able to attend in person. The following items of business will be discussed:¹

Workshop:

1. Receive updated information related to the current round of joint planning for GMA8.
2. Receive update of the USFWS settlement to designate the Critical Habitat of the Threatened Salado Salamander.
3. Review items of interest concerning the FY2021 budget development process.
4. Review items of interest concerning the District milestone efforts for the remainder of calendar year 2020
5. Review and discuss the required cybersecurity training of all district directors and staff members.

Board Meeting:

1. Invocation and Pledge of Allegiance.
2. Public comment².
3. Approve minutes of the April 8, 2020 board meeting.
4. Discuss, consider, and take appropriate action if necessary, to accept the monthly financial report for April 2020 (FY20) as presented.
5. Discuss, consider, and take appropriate action if necessary, to accept the monthly investment fund account report for April 2020 (FY20) and quarterly update TexPool 449 and TexPool Prime 590 accounts as presented.
6. Discuss, consider, and take appropriate action if necessary, to approve the FY20 line item budget amendments as requested.
7. Discuss, consider and take appropriate action if necessary, to accept the quarterly deferred compensation employee retirement program account report as presented.
8. Discuss, consider and take appropriate action necessary to set Board meeting calendar dates for June, July, and August 2020, related to FY21 budget development process.
9. Hold Public Hearing on the following permit applications:
 - a) Discuss, consider, and take appropriate action if necessary, on the proposed operating permit of 4.14 ac-ft/year for Hines Texas, LLC authorizing a combination drilling/operating permit from a proposed well (N2-20-002P) completed in the Hosston Layer of the Trinity Aquifer to produce groundwater for domestic use in a shared well agreement serving a maximum seven homes or maximum 24 persons located at Latitude 30.93011° Longitude -97.73762° off of Brooking Road, Florence, TX,

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- b) Discuss, consider, and take appropriate action if necessary, on the proposed operating permit of 4.14 ac-ft/year for Hines Texas, LLC authorizing a combination drilling/operating permit from a proposed well (N2-20-003P) completed in the Hosston Layer of the Trinity Aquifer to produce groundwater for domestic use in a shared well agreement serving a maximum seven homes or maximum 24 persons located at Latitude 30.92810°/ Longitude -97.74383° off of Brooking Road, Florence, TX,
 - c) Discuss, consider, and take appropriate action if necessary, on the proposed operating permit of 4.14 ac-ft/year for Hines Texas, LLC authorizing a combination drilling/operating permit from a proposed well (N2-20-004P) completed in the Hosston Layer of the Trinity Aquifer to produce groundwater for domestic use in a shared well agreement serving a maximum seven homes or maximum 24 persons located at Latitude 30.92169°/ Longitude -97.74103° off of Stillman Valley Road, Florence, TX,
 - d) Discuss, consider, and take appropriate action if necessary, on the proposed operating permit of 4.14 ac-ft/year for Hines Texas, LLC authorizing a combination drilling/operating permit from a proposed well (N2-20-005P) completed in the Hosston Layer of the Trinity Aquifer to produce groundwater for domestic use in a shared well agreement serving a maximum seven homes or maximum 24 persons located at Latitude 30.92325°/ Longitude -97.73594° off of Stillman Valley Road, Florence, TX,
10. Discuss, consider and take appropriate action if necessary, to bring forward the tabled agenda item, to approve construction of a Lower Trinity Monitor Well located at Peaceable Kingdom Road and Stillman Valley Road on property owned by A.W. Hines.
 11. General Manager's Report concerning office management and staffing related to District Management Plan³.
 12. Receive monthly report and possible consideration and Board action on the following:³
 - a) Drought Status Reports, b) Education Outreach Update, c) Monitoring Wells Reports, d) Rainfall Reports, e) Well Registration Update, f) Aquifer Status Report & Non-Exempt Monthly Well Production Reports
 13. Director comments and reports³.
 14. Discuss agenda items for next meeting.
 15. Set time and place for next meeting combination
 16. Adjourn.

Dated the 8th day of May 2020.

Leland Gersbach, Board President

By: Dirk Aaron
Dirk Aaron, Asst. Secretary

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 CLERK, BELL CO. TX

GUIDELINES FOR PUBLIC PARTICIPATION IN CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT BOARD MEETING, WORKSHOP AND HEARINGS

Clearwater UWCD, in order to maintain governmental transparency and continued government operation while reducing face-to-face contact for government open meetings, is implementing measures according to guidelines set forth by the Office of the Texas Governor, Greg Abbott. In accordance with section 418.016 of the Texas Government Code, Governor Abbott has suspended various open-meetings provisions that require government officials and members of the public to be physically present at a specified meeting location. CUWCD's adherence to the Governor's guidance temporary suspension procedure ensures public accessibility and opportunity to participate in CUWCD's open meeting, workshop and hearings.

Members of the public wishing to make public comment during the meeting must register by emailing schapman@cuwcd.org prior to 11:30 a.m. on April 8, 2020. This meeting will be recorded and the audio will be available by requesting a copy by requesting such to daaron@cuwcd.org . A copy of the agenda packet will be available on the CUWCD's website at the time of the meeting.

You may join CUWCD's Board meeting as follows:

- ✓ Clearwater UWCD Workshop, Board Meeting & Public Hearing
Wed, May 13, 2020 1:30 PM - 6:30 PM (CDT)
- ✓ Please join our meeting from your computer, tablet or smartphone.
<https://global.gotomeeting.com/join/637332285>
- ✓ You can also dial in using your phone.
United States: +1 (646) 749-3122 Access Code: 637-332-285
- ✓ New to GoToMeeting? Get the app now and be ready when your first meeting starts:
<https://global.gotomeeting.com/install/637332285>

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Agenda items may be considered, deliberated and/or acted upon in a different order than set forth above.

CUWCD is committed to compliance with the Americans with Disabilities Act (ADA). Reasonable accommodations and equal opportunity for effective communications will be provided upon request. Please contact CUWCD's office at 254-933-0120 at least 24 hours in advance if accommodation is needed.

¹ During the meeting, the Board reserves the right to go into executive session for any of the purposes authorized under Chapter 551 of the Texas Government Code, for any item on the above agenda or as otherwise authorized by law.

² Please limit comments to 3 minutes. The Board is not allowed to take action on any subject presented that is not on the agenda, nor is the Board required to provide a response; any substantive consideration and action by the Board will be conducted under a specific item on a future agenda.

³ No formal action will be taken by the Board on these agenda items. These items are on the agenda to provide CUWCD's staff, Stakeholder Committees, and Directors with an opportunity to bring to the public's and each other's attention important activities and issues pertinent to the management of groundwater within the District, including, but not limited to, current events in the District involving groundwater, wells, or CUWCD permittees, state or regional developments related to water management, and activities of the staff, Public Advisory Committee, and Directors. Substantive deliberation and formal action on any of these issues will be conducted pursuant to a specific item on a future agenda.

**NOTICE OF PERMIT HEARING OF THE
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT**

In accordance with Governor Abbott’s declaration of the COVID-19 public health threat, action to temporarily suspend certain provisions of the Texas Open Meetings Act, and Executive Order, a quorum of CUWCD’s Board of Directors will hold this scheduled Public Hearing by telephonic conference call and, for redundancy, videoconference.

Clearwater Underground Water Conservation District will conduct the hearing on the Applications for Permits as described below at 1:30 p.m. on Wednesday May 13, 2020 as prescribed above. The public may access this meeting and make public comment by phone, pc, tablet and/or notebook by going to the District Website <http://www.cuwcd.org/> for the contact information and instructions on May 8, 2020.

The hearing will be conducted on the following applications:

Applicant’s File Number/Name	Permit Applicant/Holder and Landowner	Location of Well/Wells	Proposed Annual Groundwater Withdrawal Amount & Purpose of Use
<p style="text-align: center;">Combination Drilling/Operating Permits</p> <p>Well #1 N2-20-002P Well #2 N2-20-003P Well #3 N2-20-004P Well #4 N2-20-005P</p>	<p>Hines Texas, LLC, Mr. A.W. Hines 601 Lake Air Drive, Waco, TX 76710,</p> <p>254-776-7000</p>	<p>The four proposed wells in the Lower Trinity Aquifer with a 1¼ inch column pipe each on a <u>285.475- acre tract</u> located off Stillman Valley Rd. and Brooking Rd, approximately 2.6 miles to the west of the intersection of FM 2484 and Stillman Valley Rd., Florence, TX,</p> <p>Well #1: Well is to be equipped with a 1¼-inch column pipe at 20gpm to serve 7 homes and no more than 24 persons in a shared well system. Latitude 30.93011°/ Longitude -97.73762°</p> <p>Well #2: Well is to be equipped with 1¼-inch column pipe at 20gpm to serve 7 homes and no more than 24 persons in a shared well system. Latitude 30.92810°/ Longitude -97.74383°</p> <p>Well #3: Well is to be equipped with 1¼-inch column pipe at 20gpm to serve 7 homes and no more than 24 persons in a shared well system. Latitude 30.92169°/ Longitude -97.74103°</p> <p>Well #4: Well is to be equipped with 1¼-inch column pipe at 20gpm to serve 7 homes and no more than 24 persons in a shared well system. Latitude 30.92325°/ Longitude -97.73594°</p>	<p>Request for Combination Drilling/Operating Permits on four wells, each well serving maximum 7 homes (or max 24 people) for domestic use under separate shared well agreements:</p> <p>Well #1 (N2-20-002P) for withdrawal of 4.41 acre-ft/year or 1,349,040 gallons per year, from the Hosston (Lower) layer of the Trinity Aquifer with a 1¼-inch column pipe to produce groundwater for domestic use.</p> <p>Well #2 (N2-20-003P) for withdrawal of 4.41 acre-ft/year or 1,349,040 gallons per year, from the Hosston (Lower) layer of the Trinity Aquifer with a 1¼-inch column pipe to produce groundwater for domestic use.</p> <p>Well #3 (N2-20-004P) for withdrawal of 4.41 acre-ft/year or 1,349,040 gallons per year, from the Hosston (Lower) layer of the Trinity Aquifer with a 1¼-inch column pipe to produce groundwater for domestic use.</p> <p>Well #4 (N2-20-005P) for withdrawal of 4.41 acre-ft/year or 1,349,040 gallons per year, from the Hosston (Lower) layer of the Trinity Aquifer with a 1¼-inch column pipe to produce groundwater for domestic use.</p>

The Applications for Permit and Permit Amendments, if granted, would authorize the permit holders to operate wells within the Clearwater Underground Water Conservation District according to the terms and conditions set forth in the permit.

**GUIDELINES FOR PUBLIC PARTICIPATION IN CLEARWATER UNDERGROUND
WATER CONSERVATION DISTRICT BOARD MEETING, WORKSHOP AND HEARINGS**

Clearwater UWCD, in order to maintain governmental transparency and continued government operation while reducing face-to-face contact for government open meetings, is implementing measures according to guidelines set forth by the Office of the Texas Governor, Greg Abbott. In accordance with section 418.016 of the Texas Government Code, Governor Abbott has suspended various open-meetings provisions that require government officials and members of the public to be physically present at a specified meeting location. CUWCD's adherence to the Governor's guidance temporary suspension procedure ensures public accessibility and opportunity to participate in CUWCD's open meeting, workshop and hearings.

Members of the public wishing to make public comment during the meeting must register by emailing schapman@cuwcd.org prior to 11:30 a.m. on April 8, 2020. This meeting will be recorded, and the audio recording will be available by contacting the CUWCD's staff after the meeting. A copy of the agenda packet will be available on the CUWCD's website at the time of the meeting.

If you would like to support, protest, or provide comments on this application, you must comply with District Rule 6.10 and either appear by phone or video conference during the hearing or submit a written Contested Case Hearing Request that complies with District Rule 6.10 and that must be received by the District prior 11:30 a.m. on the date of the hearing by assessing the from at:
<http://www.cuwcd.org/wp-content/uploads/2020/03/Hearing-Registration-eForm-19MAR20.pdf>

Public Comment forms can be assessed at: <http://www.cuwcd.org/wp-content/uploads/2020/03/Public-Comment-eForm-19MAR20.pdf> .

A person wishing to submit a Contested Case Hearing Request who is unable to appear at the hearing on the date and time set forth above must also file a motion for continuance with CUWCD demonstrating good cause for the inability to not appear by phone and/or video. For additional information about this application or the permitting process, or to request information on the legal requirements on what MUST be included in a Contested Case Hearing Request to be valid, please contact the CUWCD at 700 Kennedy Court (PO Box 1989) Belton, Texas, 76513, 254-933-0120.

ISSUED this 1st day of **May 2020** in Belton, Texas, on the recommendation of the General Manager.
I, the undersigned authority, do hereby certify that the above NOTICE OF PERMIT HEARING of the Board of Directors of the Clearwater Underground Water Conservation District is a true and correct copy of said Notice. I have posted a true and correct copy of said Notice at the District office located in Belton, Texas, and said Notice was posted on **May 1, 2020**, and remained posted continuously for at least 10 (ten) days immediately preceding the day of said hearing; a true and correct copy of said Notice was furnished to the Bell County Clerk, in which the above named political subdivision is located.

Dated **05/01/2020**

Clearwater Underground Water Conservation District

By: 
Dirk Aaron, General Manager

Workshop Item #1



Need for Changes to Bell, Burnet, Williamson and Travis County GAM Information

- Northern Trinity / Woodbine Groundwater Availability Model (NTWGAM) used by GMA 8, needs updating and improvements in the southern part of the GAM.
- Local data/measured water levels indicate the NTWGAM is not reasonably simulating projected water levels and declines in the southern portion of the Trinity Aquifer within GMA 8.
- Bell, Williamson and Travis Counties are high growth areas as current trends and population projections continue to show significant increase in population coupled with limited water strategies in the Region G State Water Plan.
- Aquifer conditions and groundwater use in Bell, Burnet, Williamson and Travis Counties impacts multiple counties and GCDs in GMA 8.
- CUWCD invested district funds to develop hydrogeologic data to better understand the NTWGAM confirming the need for necessary re-calibration of the current model.
- CUWCD has observed a steady increase in the number of wells and believes the NTWGAM should reflect both current aquifer conditions and groundwater use and projected needs and future aquifer conditions.
- CUWCD encourages Williamson and Travis County groundwater users to depend less on the Glen Rose (Upper) and Hensel (Middle) Layers of the Trinity Aquifer and shift their efforts to the deeper, more sustainable formation known as the Hosston (Lower) Layer of the Trinity.
- The first two cycles of the GMA 8 joint planning process used legacy estimates and distribution of pumping in the Trinity Aquifer by Bell, Burnet, Williamson and Travis Counties that did not reflect current groundwater production and adjustments are needed due to inaccuracy of the vertical distribution of pumping in the three layers of the Trinity Aquifer.
- CUWCD has developed baseline pumping estimates for 2010 that more accurately reflect the current conditions in the vertical distribution of demands in the different layers of the Trinity Aquifer.
- CUWCD believes a new understanding of the deeper formation of the Trinity Aquifer does afford additional groundwater production to meet the future needs in Williamson and Travis Counties.
- CUWCD encourages that sensitivity analysis runs can give GMA8 the ability to look at “cause & effect simulations” based on different levels of future pumping from the Trinity Aquifer.



Clearwater Underground Water Conservation District

P.O. Box 1989, Belton, Texas 76513
 Phone: 254/933-0120 Fax: 254/933-8396
www.cuwcd.org

Leland Gersbach, President
R. David Cole, Vice President
C. Gary Young, Secretary
Jody Williams, Director
Scott A. Brooks, Director

Memo

To: James Beach James.Beach@wsp.com

VIA EMAIL

From: Dirk Aaron daaron@cuwcd.org

CC: Mike Keester mike.keester@lrewater.com Mitchell Sodek sodek@centraltexasgcd.org
 Brant Konetchy Brant.Konetchy@wsp.com Leland Gresbach lgersbach@cuwcd.org
 Joe Cooper mtgcd1@centurylink.net Drew Satterwhite drews@gtua.org
 Ty Embrey tembrey@lglawfirm.com Troupe Brewer tbrewer@lglawfirm.com

Date: 4/17/2020

Re: Simulated pumping in Bell, Burnet, Travis and Williamson Counties for GMA8 Run 11

Clearwater UWCD (CUWCD), in concurrence with Central Texas GCD (CTGCD), offer the following guidance for changes to the proposed GMA8 run 11. In additions, we also ask that Cause & Effect Runs of 25% and 50% (as prescribed) be incorporated for CUWCD and CTGCD to evaluate the sensitivity of the model with regard to increases in pumping and the correlating impact.

Proposed Plan for simulated pumping in Bell, Burnet, Travis, and Williamson Counties for GMA 8 Run 11

- **2019 Estimated Actual Pumping**

Table 1. Estimated actual pumping in Bell, Burnet, Travis, and Williamson counties (acre-ft).

Aquifer	Travis*	Williamson*	Bell**	Burnet***
Upper Trinity	93	120	272	—
Middle Trinity	2,281	1,547	579	1,176
Lower Trinity	2,502	981	1,062	283
Total Trinity	4,876	2,648	1,912	1,459

*Travis and Williamson estimates based on the TWDB databases showing the increase in the number of wells in each county

**Bell County estimated from reported non-exempt and estimated exempt pumping

***Burnet County estimates are for 2018 as provided by Central Texas GCD

1 | Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

Table 2. Estimated actual pumping distribution between Trinity layers

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	2%	5%	14%	—
Middle Trinity	47%	58%	30%	81%
Lower Trinity	51%	37%	56%	19%

- **Current MAG (Year 2020)**

Table 3. MAG for the Trinity Aquifer and the layers of the Trinity Aquifer from 2016 planning

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	974	690	974	424
Middle Trinity	1,145	753	1,099	1,894
Lower Trinity	2,791	1,938	7,193	1,382
Total Trinity	4,910	3,381	9,266	3,700

Table 4. Trinity MAG pumping distribution between Trinity layers

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	20%	20%	11%	11%
Middle Trinity	23%	22%	12%	51%
Lower Trinity	57%	57%	78%	37%

- **Recommend pumping between Trinity layers for GMA 8 simulations**

For the revisions shown in Table 5, we do not expect a change in the current areal distribution of MAG pumping in each county. Rather, the cell-by-cell values in each county from the current MAG pumping file could be increased/decreased to meet the total pumping volumes for the county and layer.

Table 5. Recommended revised distribution of simulated pumping for baseline simulation.

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	100	150	275	148
Middle Trinity	2,300	1,600	1,100	2,664
Lower Trinity	2,600	1,750	7,900	888
Total Trinity	5,000	3,500	9,275	3,700

For Travis and Williamson counties, values are approximately the current estimate of pumping for the Upper and Middle Trinity; the remainder of the current Trinity MAG pumping is assigned to the Lower Trinity. For Bell County, values represent a small redistribution of simulated pumping from the Upper Trinity to the Lower Trinity. Burnet County values provided by Central Texas GCD.

2| Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

Table 6. Revised MAG distribution per Trinity layer as a percent of the total proposed Trinity Aquifer simulated pumping shown in Table 5.

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	2.0%	4.3%	3.0%	4.0%
Middle Trinity	46.0%	45.7%	11.9%	72.0%
Lower Trinity	52.0%	50.0%	85.2%	24.0%

In addition to the recommended redistribution of pumping in Table 5, add existing 2017 SWP water management strategies (assume Lower Trinity). While the water management strategies (WMS) do not start until future decades, include the value in initial amounts being simulated as possible MAGs. The State Well Number (SWN) in Table 7 indicate the approximate location to add the simulated pumping.

Table 7. Water Management Strategies to add to simulated Lower Trinity pumping in Travis County.

Entity	WMS ID	Acre-Feet	Approximate Location	County
Manor	3293	600	SWN 58-44-202	Travis
Manville WSC*	3293	1,000	SWN 58-44-204	Travis

*Manville WSC in Travis and Williamson counties, but WMS states Travis as location

Adding the WMS pumping in Table 7 would increase the Travis County simulated pumping for the Lower Trinity (Table 5) from 2,600 to 4,200 acre-feet per year and the total Trinity Aquifer from 5,000 to 6,600 acre-feet per year.

- **In addition to the revised distribution, prepare pumping files with additional pumping**
For Travis, Williamson, and Bell counties, increase the total Trinity Aquifer simulated pumping (see Table 5) by 25% and add the increase to the Lower Trinity. For Travis County, the 25% increase is not applied to the WMS amounts listed in Table 7. For Burnet County, per Central Texas GCD guidance, increase all layers by 25%.

Table 8. Proposed simulated pumping amounts for the 25% increase simulation. Lower Trinity increased simulated pumping in Travis County includes 1,600 acre-feet per year at specific locations associated with WMS (see Table 7).

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	100	150	275	185
Middle Trinity	2,300	1,600	1,100	3,330
Lower Trinity	5,450	2,625	10,219	1,110
Total Trinity	7,850	4,375	11,594	4,625

3| Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

For Travis, Williamson, and Bell counties, increase the total Trinity Aquifer simulated pumping (see Table 5) by 50% and add the increase to the Lower Trinity. For Travis County, the 50% increase is not applied to the WMS amounts listed in Table 7. For Burnet County, per Central Texas GCD guidance, increase all layers by 50%.

Table 9. Proposed simulated pumping amounts for the 50% increase simulation. Lower Trinity increased simulated pumping in Travis County includes 1,600 acre-feet per year at specific locations associated with WMS (see Table 7).

Aquifer	Travis	Williamson	Bell	Burnet
Upper Trinity	100	150	275	222
Middle Trinity	2,300	1,600	1,100	3,996
Lower Trinity	6,700	3,500	12,538	1,332
Total Trinity	9,100	5,250	13,913	5,550

Anticipated outputs for the simulations

- Average drawdown for each layer of the Trinity Aquifer
- Remaining available drawdown (that is, water level above the top of the aquifer layer) for each layer of the Trinity Aquifer

4 | *Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.*

From: [Mitchell Sodek](#)
To: [Dirk Aaron](#)
Subject: GMA8 Run 11
Date: Friday, April 17, 2020 9:39:26 AM
Attachments: [FINALV1_20200416_GMA8_simulation_guidance.pdf](#)

Dirk,

I approve of the input values of pumping into GAM run 11, specifically tables 5,6,7 of the attached proposed plan. In particular I believe the numbers used for Williamson and Travis Counties are much more accurate when accounting for the estimated pumping occurring today for all water uses. Burnet County pumping is redistributed with more emphasis put into the Middle Trinity and less from the Lower Trinity. Bell County numbers remain flat for the Middle Trinity while increasing for the Lower Trinity, especially deep down dip.

I look forward to seeing the results.

Mitchell Sodek

General Manager
Central Texas GCD
Phone: 512-756-4900
Cell: 361-877-2570



Technical Memorandum

To: Dirk Aaron, General Manager – Clearwater Underground Water Conservation District
From: Michael Keester, PG
Date: May 5, 2020
Subject: Evaluation of Groundwater Pumping in Travis and Williamson Counties

Over the last few years, the Texas Water Development Board (“TWDB”) estimates of groundwater production (TWDB, 2020b) in Travis and Williamson counties have remained relatively stable or generally decreased. These estimates of groundwater pumping are based on Water Use Survey data along with TWDB staff research and professional opinions (<http://www.twdb.texas.gov/waterplanning/waterusesurvey/faq.asp>). The Texas Water Code and Texas Administrative Code requires any entity that receives a Water Use Survey to complete it within 60 days.

Municipal and industrial are two types of surveys sent out each year. The municipal surveys are primarily for community public water systems. The industrial surveys are for manufacturing and mining users that use more than 10,000,000 gallons per year, “or use a significant volume of water for the industrial sector for a particular area of the state.” Electric power generation plants are also included under the industrial surveys.

While the TWDB estimates of groundwater production show a general decrease in recent years, using readily available well databases (TWDB, 2020a; TWDB, 2020c; TCEQ, 2020) we observe a steady increase in the number of wells in each county. Figure 1 and Figure 2 illustrate the reported estimated groundwater pumping and the number of wells from the databases for Travis and Williamson counties, respectively. Figure 3 illustrates the combined values for both counties.

The consistent increase in the number of production wells raises questions about the corresponding decrease in the estimated groundwater pumping. While it is likely groundwater pumping did decrease in the Edwards (BFZ) Aquifer due to a greater utilization of surface water supplies by municipalities, there remain questions regarding the decrease in Trinity Aquifer groundwater pumping. In particular, a decrease in estimated groundwater pumping in the Trinity Aquifer would suggest a corresponding rise in water levels, however, water levels in the Middle and Lower Trinity aquifers in northwest Williamson County have generally declined over the last several years (Keester, 2018a). Also, associated with the growth in wells is significant rural population growth and growth in the number and surface area of quarries (Keester, 2018b). In addition, there remain questions regarding the estimated amount of irrigation groundwater pumping as there are at least eight irrigation wells associated with three golf courses in Sun City in Williamson County (Keester, 2019). These factors suggest there would be some growth in the amount of groundwater pumping along with the growth in the number of wells.

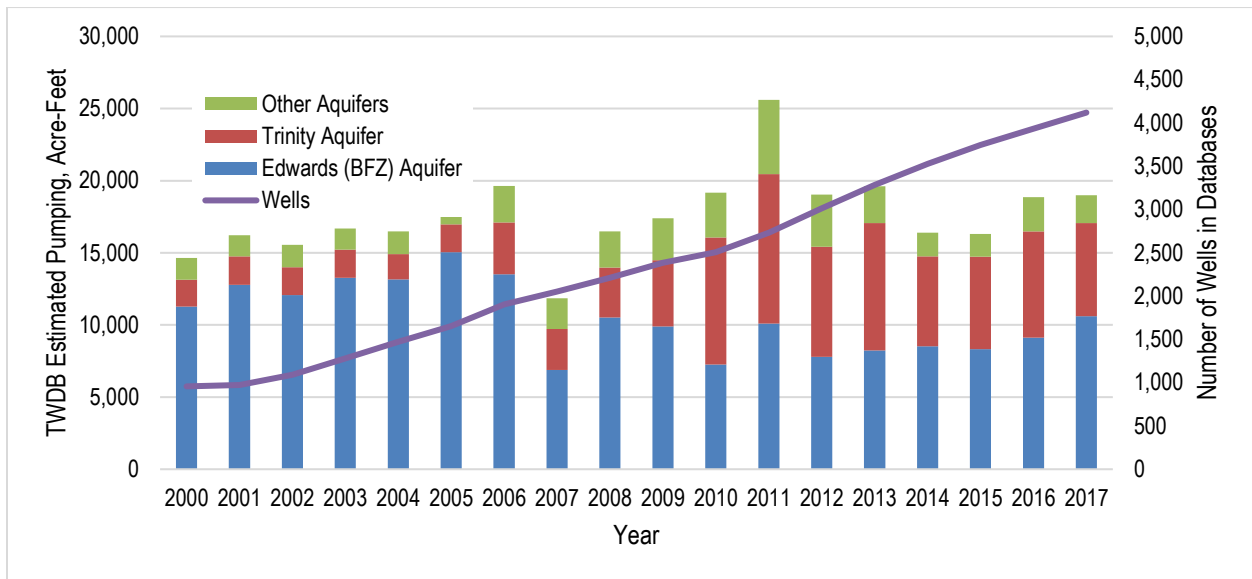


Figure 1. Travis County TWDB reported groundwater pumping estimate and the number of wells in public databases.

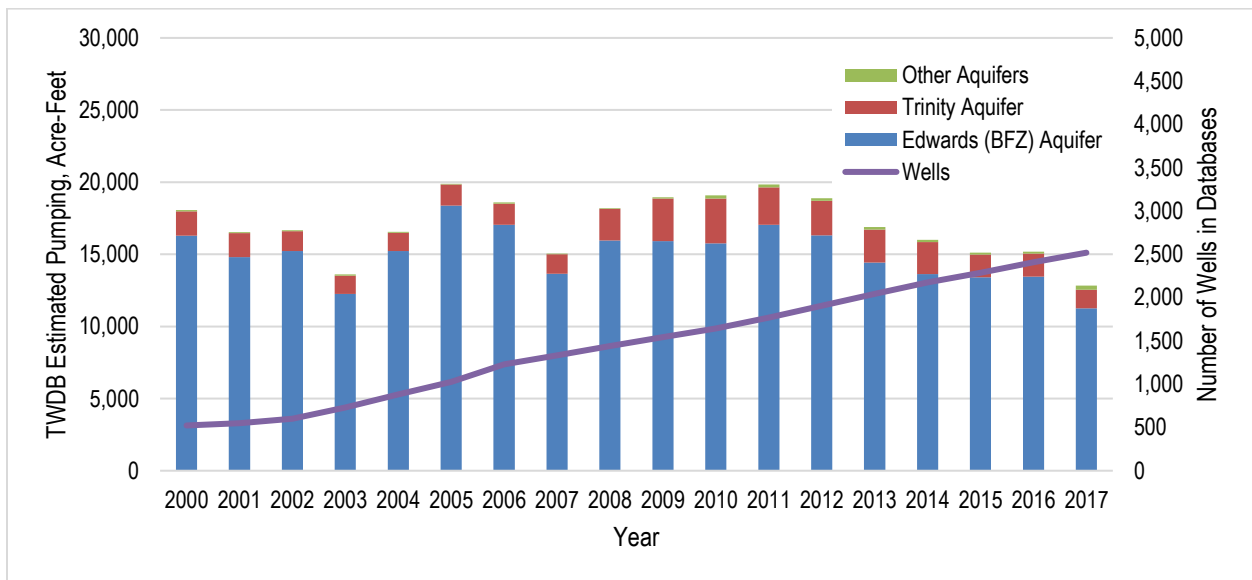


Figure 2. Williamson County TWDB reported groundwater pumping estimate and the number of wells in public databases.

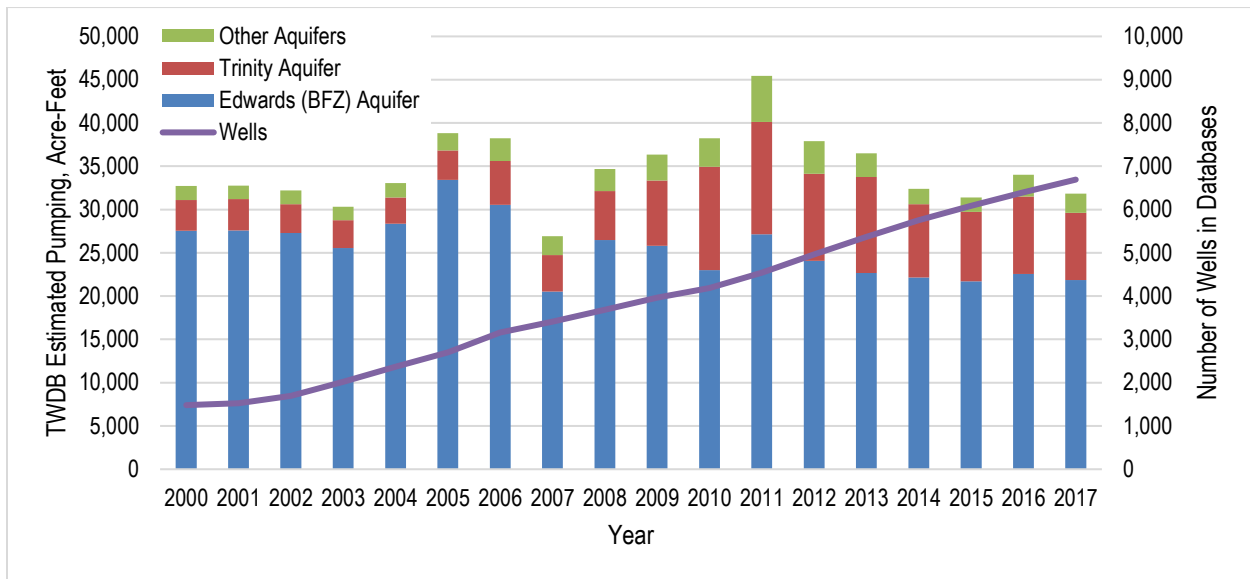


Figure 3. Travis and Williamson counties TWDB reported groundwater pumping estimate and the number of wells in public databases.

Methodology

To assess how groundwater pumping may have changed with the number of wells completed, we began by obtaining all of the wells in Travis and Williamson counties from the TWDB Groundwater Database (TWDB, 2020a), the Submitted Drillers Report Database (TWDB, 2020c), and the Texas Commission on Environmental Quality (“TCEQ”) public water supply wells (TCEQ, 2020). From these wells, we excluded wells that would not contribute to groundwater production such as geothermal wells, environmental soil borings, test wells, monitoring wells, injection wells, unused wells, or wells with an associated plugging report. We then cross-referenced the three databases to remove duplicate entries. The result was a total of 7,448 wells within the two counties which is only a portion of the total number of wells as many are not included in the three databases. The Submitted Drillers Report Database was started in 2001 and began collecting all reports in 2003 (TWDB, 2020c). Wells drilled prior to 2003 may not be in one of the databases and would not be reflected in the total number of wells used in our analysis.

As a comparison, the Clearwater Underground Water Conservation District database contained nearly 5,700 wells at the end of 2019. At the end of 2002 which was the first year with well registrations, there were 3,633 wells. Review of the TWDB and TCEQ databases shows about 1,100 existing wells in 2019 or 20 percent of the registered wells within the District. As this comparison suggests, there are many more wells within Travis and Williamson counties than reflected in the public databases. However, it is likely the wells from the three databases provide a reasonably representative sample of the wells within each county and aquifer for assessing potential changes in production. For purposes of our evaluation, we will focus on the number of wells and potential changes in production since 2000.

For wells that were not already associated with an aquifer in one of the databases or from the investigation of subsidence risk due to groundwater pumping (Furnans and others, 2018), we assigned an aquifer to the well based on the depth of the well, the producing interval of the well, the elevation of the aquifer layers as defined in the groundwater availability model for the northern Trinity and Woodbine aquifers (Kelley and others, 2014), or information from other nearby wells. For purposes of this evaluation, we assigned each well to the Edwards (BFZ), Upper Trinity, Middle Trinity, Lower Trinity, Lower Wilcox, or Other (typically alluvial) aquifer. Figure 4 and Figure 5 illustrate the number of wells in each aquifer in Travis and Williamson counties, respectively. Figure 6 shows the combined number of wells from the public databases for the two counties.

We used the databases to determine or estimate the casing size for each of the wells and assigned a maximum potential production amount to each casing size (see Table 1). While there are many well construction factors that control the actual groundwater pumping rate obtainable from a well (for example, depth to water, friction losses, and uphole velocity), the maximum potential production amounts associated with the casing size provide a way for us to develop the relative distribution of groundwater pumping across the study area. The values presented in Table 1 are based on general assumptions regarding potential production and capacity of submersible pumps with diameters that would fit inside the casing.

For wells where the casing size was not available, we used the average casing size associated with the assigned use. We also simplified the use categories associated with each well to match the categories from the TWDB groundwater pumping estimates (TWDB, 2020b). Table 2 provides the use categories from the well databases and associated category from the TWDB groundwater pumping estimates assigned as the well use. The TWDB groundwater pumping estimates do not include domestic groundwater pumping, but Table 2 also shows which wells we included in our domestic use estimates.

For domestic wells, we simply assumed groundwater production of 140 gallon per person per day with three persons per well (0.47 acre-feet per year). For other uses, as a baseline for the groundwater pumping estimates based on the number of wells, we began with the 2003 TWDB groundwater pumping estimate (TWDB, 2020b). For each year from 2000 through 2019, we determined the number of wells within the casing size interval (Table 1) for each type of use (Table 2). We then determined the maximum assigned groundwater pumping associated with the casing size for 2003. Using the maximum assigned pumping, we determined the percentage of the total maximum assigned pumping associated with each casing size in that use category. Next, we multiplied that percentage by the total TWDB estimated 2003 groundwater pumping for that use from the aquifer. We then established the equivalent amount per well for 2003 and used that value for each additional well constructed in future years. Table 3 illustrates the method for calculating the 2003 per well pumping estimate associated with each casing size for irrigation pumping from the Edwards (BFZ) Aquifer.

For subsequent years, we then used the 2003 total estimate associated with each casing size and added the amount per well multiplied by the number of new wells. For example, in 2004 the databases listed 33 irrigation

wells with casing more than 4 inches and up to 6 inches in diameter completed in the Edwards (BFZ) Aquifer which is an increase of 17 new wells from the 16 wells reportedly in the aquifer in 2003. Using the 2003 total groundwater pumping estimated for the “>4 to 6” inch casing of 14.42 acre-feet (see Table 3) we add 15.32 acre-feet of additional groundwater pumping (17 wells multiplied by 0.90 acre-feet per well) to determine the estimated 2004 irrigation pumping from the Edwards (BFZ) Aquifer for irrigation use from wells with casing more than 4 inches and up to 6 inches in diameter.

For the layers of the Trinity Aquifer, we followed the same method by first determining the per well estimates for the Trinity Aquifer as a whole. We then used the number of wells associated with each use, casing size, and division of the Trinity to estimate the groundwater pumping from the Upper, Middle, and Lower Trinity aquifers.

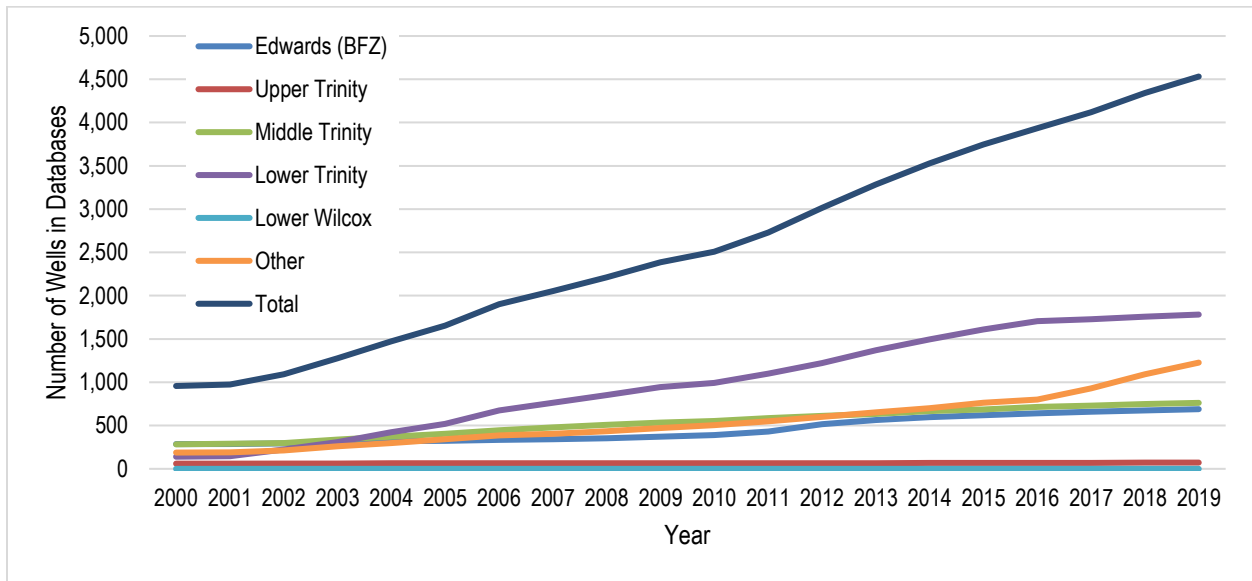


Figure 4. Travis County number of wells in the public databases completed in each aquifer.

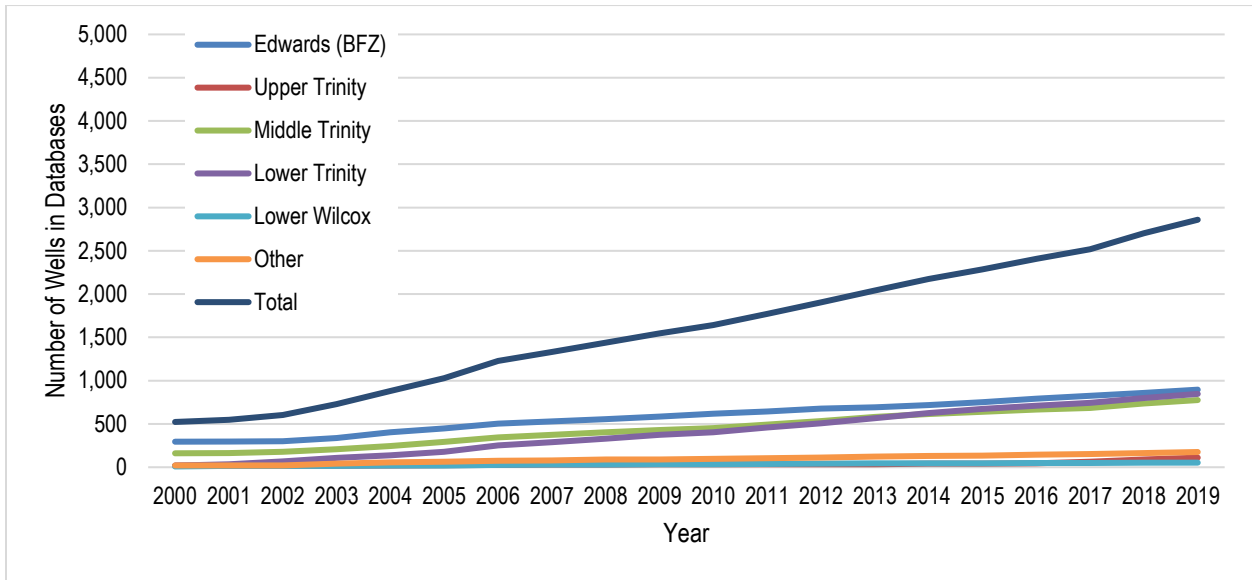


Figure 5. Williamson County number of wells in the public databases completed in each aquifer.

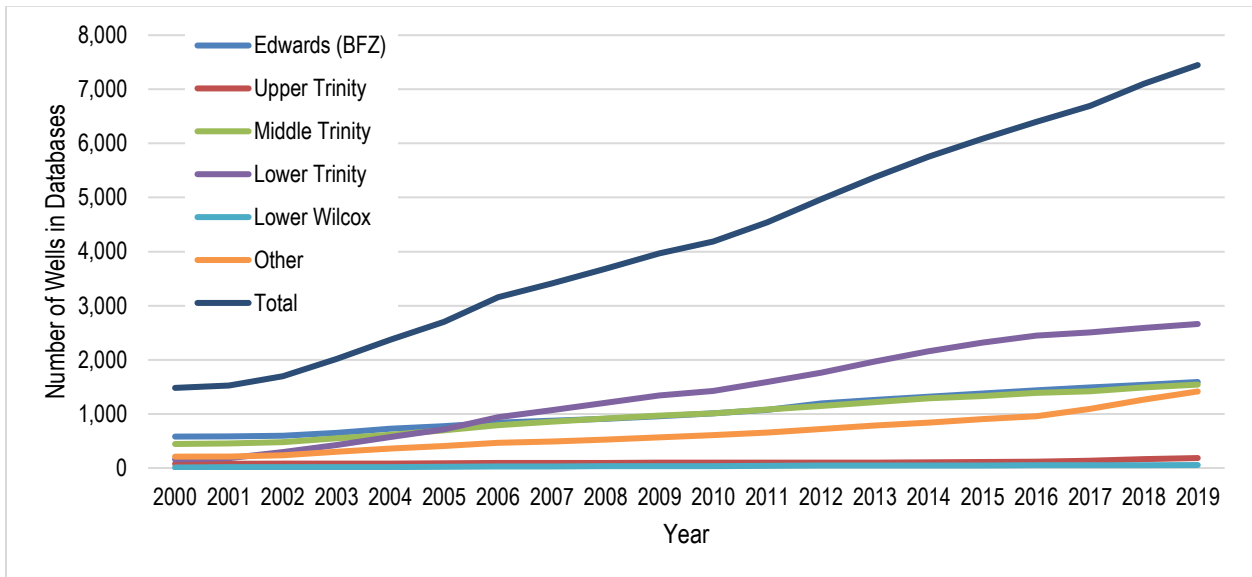


Figure 6. Travis and Williamson counties number of wells in the public databases completed in each aquifer.

Table 1. Casing size and assigned maximum production volume associated with the casing size.

Reported Casing Size (Inches)	Maximum Assigned Pumping (Acre-Feet per Year)
Up to 4	10
>4 to 6	50
>6 to 8	250
>8 to 10	500
>10 to 12	800
More than 12	2,000

Table 2. Use categories applied to wells for estimating groundwater pumping.

Well Use from Database	Applied TWDB Use Category
<null>	Domestic
Commercial	Manufacturing
De-watering	Mining
Domestic	Domestic
Fire	Municipal
Industrial	Manufacturing
Irrigation	Irrigation
Other	Domestic
Public Supply	Municipal
Recreation	Municipal
Rig Supply	Mining
Stock	Livestock
Unknown	Domestic

Table 3. Estimated per well production from the Edwards (BFZ) Aquifer per casing size for irrigation use in 2003.

Casing Size (Inches)	Up to 4	>4 to 6	>6 to 8	>8 to 10	>10 to 12	>12
Number of Wells	3	16	8	25	2	3
Maximum Assigned Pumping (Acre-Feet)	30	800	2,000	12,500	1,600	6,000
Percent of Total Maximum Assigned Pumping	0.1%	3.5%	8.7%	54.5%	7.0%	26.2%
Estimated Actual Pumping (Acre-Feet)*	0.54	14.42	36.04	225.24	28.83	108.12
Estimated Actual Pumping per Well (Acre-Feet)	0.18	0.90	4.50	9.01	14.42	36.04

*TWDB total 2003 estimated groundwater pumping for irrigation use from the Edwards (BFZ) Aquifer = 413.18 acre-feet.

Using the total estimated groundwater pumping per year associated with each aquifer, use, and casing size we evenly distributed the groundwater pumping to wells that were completed on or prior to the year being considered. That is, if a well was completed in 2009, groundwater pumping was only assigned to the well in the year 2009 and following.

For some aquifers, uses, and casing sizes some data were missing for calculating a per well estimate of production. For example, we may have estimated groundwater pumping from the TWDB datasets, but no wells in the databases. Or we may have no wells with a specified casing diameter in the databases until some year after 2003. Table 4 summarizes the assumptions we applied where data were incomplete.

Table 4. Assumed production per well for aquifers, uses, and/or casing sizes without corresponding data for year 2003.

Aquifer	Use Category	Casing Size (Inches)	Estimated Pumping per Well (Acre-Feet per Year)	Comment
Edwards (BFZ)	Mining	>4 to 6	184.4	1,844.4 acre-feet in 2003; No wells in database until 2014; All pumping from TX Crushed Stone
Trinity	Mining	>4 to 6	2	3 wells in database, but no 2003 pumping estimate
Upper Trinity	Irrigation	>4 to 6	2	No wells in database until 2006
Upper Trinity	Manufacturing	>4 to 6	2	No wells in database until 2019
Lower Trinity	Irrigation	>6 to 8	5	No wells in database until 2016
Lower Trinity	Manufacturing	>4 to 6	2	No wells in database until 2004
Lower Wilcox	Irrigation	>4 to 6	Varies	Set total pumping equal to manufacturing estimates. Databases have no manufacturing use wells
Other	Municipal	>4 to 6	2.03	No wells in database until 2019; Used Trinity Aquifer per well estimate
Other	Irrigation	>6 to 8	6.60	No wells in database until 2015; Used Trinity Aquifer per well estimate
Other	Manufacturing	>4 to 6	0.66	No wells in database until 2015; Used Trinity Aquifer per well estimate
Other	Manufacturing	>6 to 8	3.75	5 wells in database, but no 2003 pumping estimate; Used 2002 per well estimate
Other	Livestock	>4 to 6	2.03	No wells in database until 2009; Used Trinity Aquifer per well estimate

Groundwater Pumping Estimates

The groundwater pumping estimates derived from the growth in the number wells suggest that groundwater pumping may be greater than reflected in the TWDB estimates. As previously mentioned, we understand how groundwater pumping could decrease from some sources due to greater reliance on other water supplies. However, review of the well databases, particularly the Submitted Drillers Reports (TWDB, 2020c), indicates that since year 2000 wells have been completed in the Middle and Lower Trinity aquifers at a higher rate than most other aquifers in Travis and Williamson counties with most of the completed wells being between more than 4 and up to 6 inches in diameter (see Table 5 and Table 6). As shown on Table 7 and Table 8, the highest rate of well completions is typically for domestic use with irrigation use commonly the second highest use designation for new wells.

Table 5. Number of new wells per casing size completed since 2000 (TCEQ, 2020; TWDB, 2020a; TWDB, 2020c).

County	Aquifer	Maximum Casing Size (Inches)						All Wells
		4	6	8	10	12	>12	
Travis	Edwards (BFZ)	25	351	8	15	0	6	405
	Upper Trinity	0	11	1	0	0	0	12
	Middle Trinity	2	435	5	37	0	0	479
	Lower Trinity	1	1,624	20	3	18	0	1,666
	Lower Wilcox	0	0	0	0	0	0	0
	Other	65	917	30	25	10	1	1,048
	All Aquifers	93	3,338	64	80	28	7	3,610
Williamson	Edwards (BFZ)	21	527	23	19	0	14	603
	Upper Trinity	1	75	18	0	0	0	94
	Middle Trinity	0	583	25	11	0	0	619
	Lower Trinity	0	806	21	1	7	2	837
	Lower Wilcox	8	31	1	6	0	0	46
	Other	3	151	2	1	0	0	157
	All Aquifers	33	2,173	90	38	7	16	2,357
Total	Edwards (BFZ)	46	878	31	34	0	20	1,009
	Upper Trinity	1	86	19	0	0	0	106
	Middle Trinity	2	1,018	30	48	0	0	1,098
	Lower Trinity	1	2,430	41	4	25	2	2,503
	Lower Wilcox	8	31	1	6	0	0	46
	Other	68	1,068	32	26	10	1	1,205
	All Aquifers	126	5,511	154	118	35	23	5,967

Table 6. Average number of wells per casing size completed per year from 2000 through 2019 (TCEQ, 2020; TWDB, 2020a; TWDB, 2020c).

County	Aquifer	Maximum Casing Size (Inches)						All Wells
		4	6	8	10	12	>12	
Travis	Edwards (BFZ)	1.25	17.55	0.40	0.75	0	0.3	20.25
	Upper Trinity	0.00	0.55	0.05	0.00	0.00	0.00	0.60
	Middle Trinity	0.10	21.75	0.25	1.85	0.00	0.00	23.95
	Lower Trinity	0.05	81.20	1.00	0.15	0.90	0.00	83.30
	Lower Wilcox	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other	3.25	45.85	1.50	1.25	0.50	0.05	52.40
	<i>All Aquifers</i>	<i>4.65</i>	<i>166.90</i>	<i>3.20</i>	<i>4.00</i>	<i>1.40</i>	<i>0.35</i>	<i>180.5</i>
Williamson	Edwards (BFZ)	1.05	26.35	1.15	0.95	0.00	0.70	30.20
	Upper Trinity	0.05	3.75	0.90	0.00	0.00	0.00	4.70
	Middle Trinity	0.00	29.15	1.25	0.55	0.00	0.00	30.95
	Lower Trinity	0.00	40.30	1.05	0.05	0.35	0.1	41.85
	Lower Wilcox	0.40	1.55	0.05	0.30	0.00	0.00	2.30
	Other	0.40	7.55	0.10	0.05	0.00	0.00	7.85
	<i>All Aquifers</i>	<i>1.65</i>	<i>108.65</i>	<i>4.50</i>	<i>1.90</i>	<i>0.35</i>	<i>0.80</i>	<i>117.85</i>
Total	Edwards (BFZ)	2.30	43.90	1.55	1.70	0.00	1.00	50.45
	Upper Trinity	0.05	4.30	0.95	0.00	0.00	0.00	5.30
	Middle Trinity	0.10	50.90	1.50	2.40	0.00	0.00	54.90
	Lower Trinity	0.05	121.50	2.05	0.20	1.25	0.10	125.15
	Lower Wilcox	0.40	1.55	0.05	0.30	0.00	0.00	2.30
	Other	3.40	53.40	1.60	1.30	0.50	0.05	60.25
	<i>All Aquifers</i>	<i>6.30</i>	<i>275.55</i>	<i>7.70</i>	<i>5.90</i>	<i>1.75</i>	<i>1.15</i>	<i>298.35</i>

Table 7. Number of new wells per use category completed since 2000 (TCEQ, 2020; TWDB, 2020a; TWDB, 2020c).

County	Aquifer	Municipal	Irrigation	Manufacturing	Mining	Livestock	Domestic	Total
Travis	Edwards (BFZ)	15	269	7	2	3	109	405
	Upper Trinity	0	5	0	0	0	7	12
	Middle Trinity	53	65	1	0	0	360	479
	Lower Trinity	25	280	3	0	4	1,354	1,666
	Lower Wilcox	0	0	0	0	0	0	0
	Other	39	283	10	19	3	694	1,048
	<i>All Aquifers</i>	132	902	21	21	10	2,524	3,610
Williamson	Edwards (BFZ)	24	108	8	0	20	444	604
	Upper Trinity	1	8	6	0	2	77	94
	Middle Trinity	12	53	22	0	15	517	619
	Lower Trinity	12	70	9	0	8	738	837
	Lower Wilcox	6	6	0	0	1	33	46
	Other	1	18	0	1	4	133	157
	<i>All Aquifers</i>	56	263	45	1	50	1,942	2,357
Total	Edwards (BFZ)	39	377	15	2	23	553	1,009
	Upper Trinity	1	13	6	0	2	84	106
	Middle Trinity	65	118	23	0	15	877	1,098
	Lower Trinity	37	350	12	0	12	2,092	2,503
	Lower Wilcox	6	6	0	0	1	33	46
	Other	40	301	10	20	7	827	1,205
	<i>All Aquifers</i>	188	1,165	66	22	60	4,466	5,967

Table 8. Average number of wells per use category completed per year from 2000 through 2019 (TCEQ, 2020; TWDB, 2020a; TWDB, 2020c).

County	Aquifer	Municipal	Irrigation	Manufacturing	Mining	Livestock	Domestic	Total
Travis	Edwards (BFZ)	0.75	13.45	0.35	0.10	0.15	5.45	20.25
	Upper Trinity	0.00	0.25	0.00	0.00	0.00	0.35	0.60
	Middle Trinity	2.65	3.25	0.05	0.00	0.00	18.00	23.95
	Lower Trinity	1.25	14.00	0.15	0.00	0.20	67.70	83.30
	Lower Wilcox	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other	1.95	14.15	0.50	0.95	0.15	34.70	52.40
	<i>All Aquifers</i>	6.60	45.10	1.05	1.05	0.5	126.20	180.50
Williamson	Edwards (BFZ)	1.20	5.40	0.40	0.00	1.00	22.20	30.20
	Upper Trinity	0.05	0.40	0.30	0.00	0.10	3.85	4.70
	Middle Trinity	0.60	2.65	1.10	0.00	0.75	25.85	30.95
	Lower Trinity	0.60	3.50	0.45	0.00	0.40	36.90	41.85
	Lower Wilcox	0.30	0.30	0.00	0.00	0.05	1.65	2.30
	Other	0.05	0.9	0.00	0.05	0.20	6.65	7.85
	<i>All Aquifers</i>	2.80	13.15	2.25	0.05	2.50	97.10	117.85
Total	Edwards (BFZ)	1.95	18.85	0.75	0.10	1.15	27.65	50.45
	Upper Trinity	0.05	0.65	0.30	0.00	0.10	4.20	5.30
	Middle Trinity	3.25	5.90	1.15	0.00	0.75	43.85	54.90
	Lower Trinity	1.85	17.50	0.60	0.00	0.60	104.60	125.15
	Lower Wilcox	0.30	0.30	0.00	0.00	0.05	1.65	2.30
	Other	2.00	15.05	0.50	1.00	0.35	41.35	60.25
	<i>All Aquifers</i>	9.40	58.25	3.30	1.10	3.00	223.30	298.35

Of note, the mining use on Table 7 shows zero wells in the layers of the Trinity Aquifer. However, review of well locations shows several wells completed in a layer of the Trinity Aquifer that are associated with quarries. Review of well records shows that drillers typically designate these wells as industrial or domestic wells. While the industrial wells could be assigned a mining use rather than manufacturing per Table 2, there are many industrial wells that are not associated with mining operations. A detailed well-by-well analysis could better categorize each well, but for our estimation purposes such an evaluation was beyond the scope of this project.

As Figure 3 illustrates, most of the estimated groundwater pumping is from the Edwards (BFZ) Aquifer with most of the produced groundwater for municipal use (TWDB, 2020b). Since 2000, within Travis County most new municipal wells are being completed in the Middle or Lower Trinity while in Williamson County the rate of municipal well completion in the Middle and Lower Trinity since 2000 is about the same as for the Edwards

(BFZ). Figure 7 and Figure 8 illustrate the estimated groundwater pumping along with the associated number of wells designated for municipal use in Travis and Williamson counties, respectively.

As stated above, domestic wells are the most common new well type in both counties. Also in both counties, domestic wells have most commonly been completed in the Lower Trinity Aquifer since 2000 (see Table 8). Figure 9 and Figure 10 illustrate the estimated groundwater pumping along with the associated number of wells designated for domestic use in Travis and Williamson counties, respectively. On Figure 9 we can easily observe the rapid growth of Lower Trinity Aquifer domestic wells along with the estimated groundwater pumping associated with the new wells.

Considering all designated uses, estimated groundwater production based on the growth in the number of wells is similar between the two counties (see Figure 11 and Figure 12). As shown on Figure 13, total estimated groundwater pumping is about 43,000 acre-feet in 2019 with most of the estimated pumping coming from the Edwards (BFZ) Aquifer. While the estimated Edwards (BFZ) Aquifer pumping is higher than other aquifers, it is important to note the significant increase in the number of Middle and Lower Trinity wells illustrated on Figure 13. The growth in the number of Middle and Lower Trinity wells indicates a greater reliance on the aquifer in recent years.

Figure 14 and Figure 15 compare the estimated groundwater pumping based on the growth in the number of wells with the TWDB (2020b) estimated pumping from the Edwards (BFZ) Aquifer in Travis and Williamson counties, respectively. When we compare the methods, we observe that in the Edwards (BFZ) Aquifer in Williamson County the TWDB estimated groundwater pumping peaks in 2005 then generally declines through 2017. With our estimate of groundwater pumping correlated to the growth in the number of wells, the difference in estimated pumping from the Edwards (BFZ) Aquifer in Williamson County in 2017 is more than 7,000 acre-feet. However, through the year 2012 in Williamson County the estimates are relatively similar.

In Travis County, the TWDB (2020b) estimated Edwards (BFZ) pumping in 2007 is less than half of the 2005 value of just over 15,000 acre-feet. Since 2007, the TWDB (2020b) estimates of Edwards (BFZ) pumping show an increasing trend similar to the estimated groundwater pumping based on the growth in the number of wells (see Figure 14). While the estimated groundwater pumping based on well growth is higher than the TWDB estimate, the difference in 2017 is less than 3,000 acre-feet.

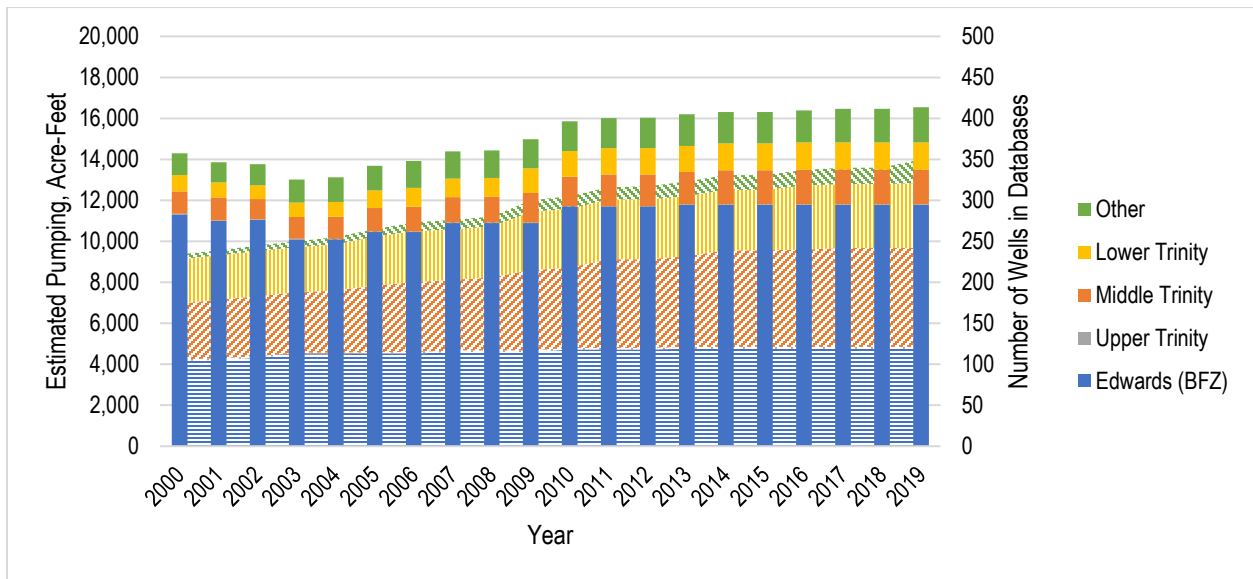


Figure 7. Travis County estimated groundwater pumping (columns) and number of wells (patterned area) designated for municipal use.

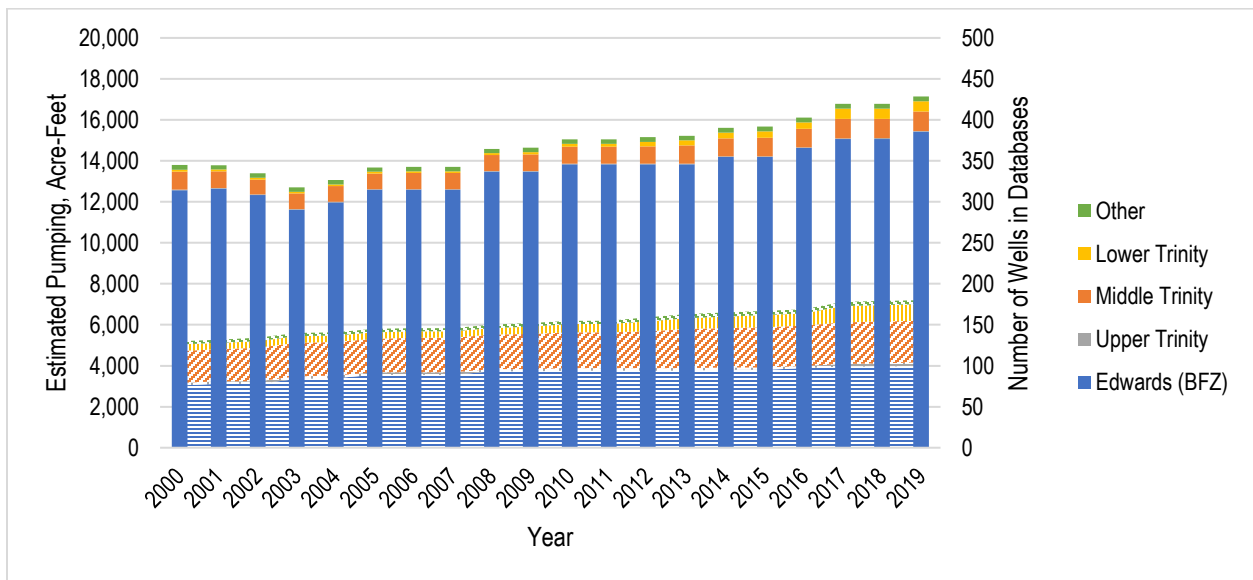


Figure 8. Williamson County estimated groundwater pumping (columns) and number of wells (patterned area) designated for municipal use.

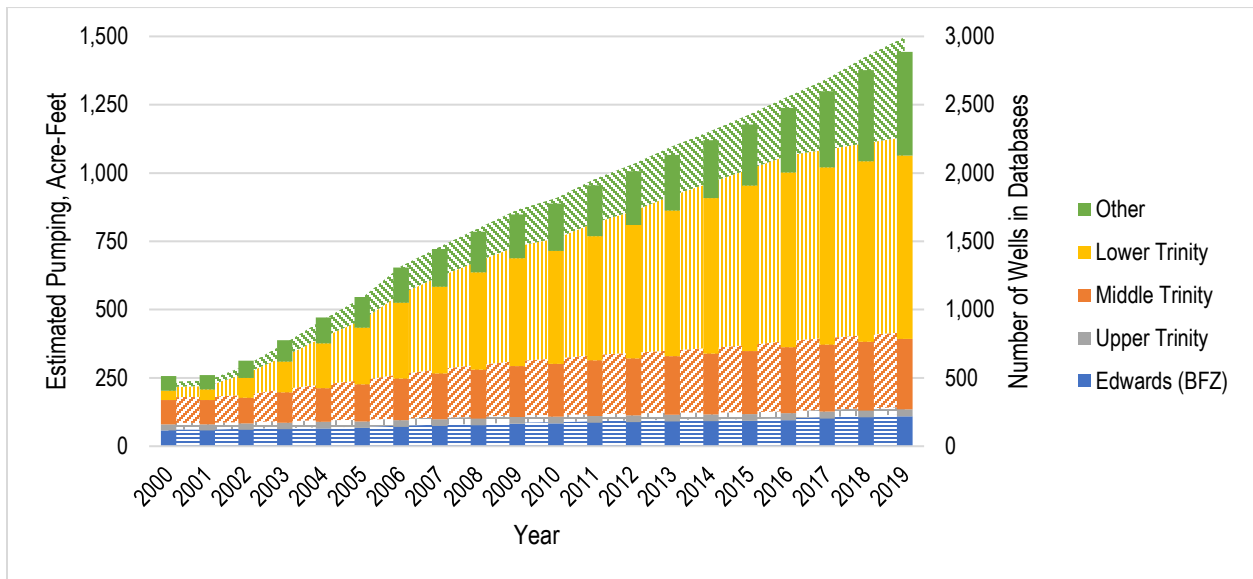


Figure 9. Travis County estimated groundwater pumping (columns) and number of wells (patterned area) designated for domestic use.

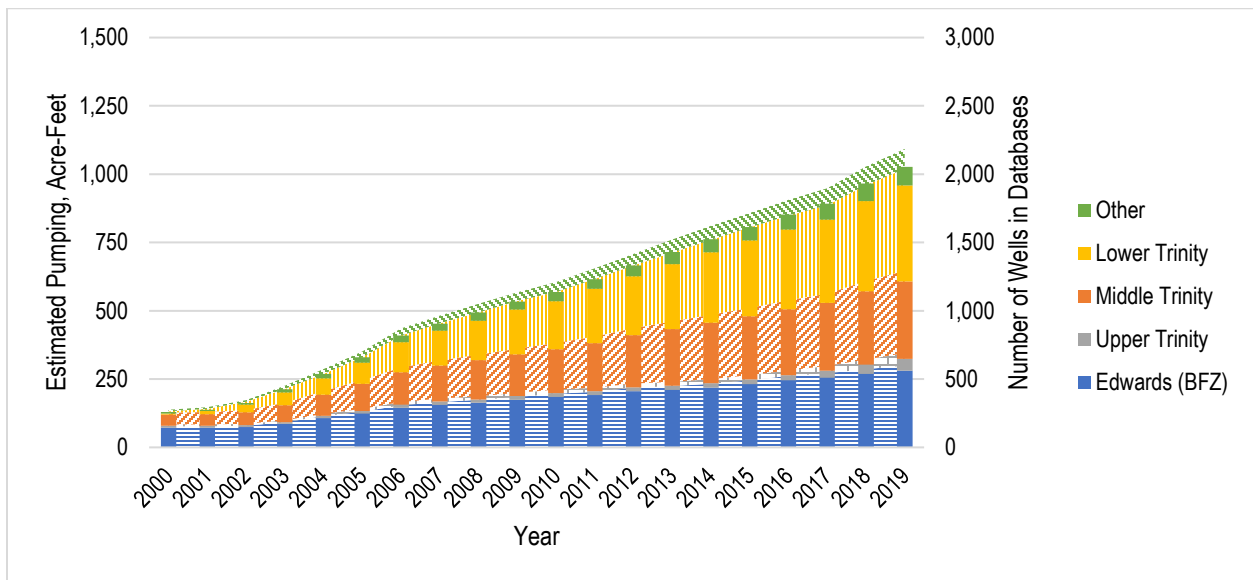


Figure 10. Williamson County estimated groundwater pumping (columns) and number of wells (patterned area) designated for domestic use.

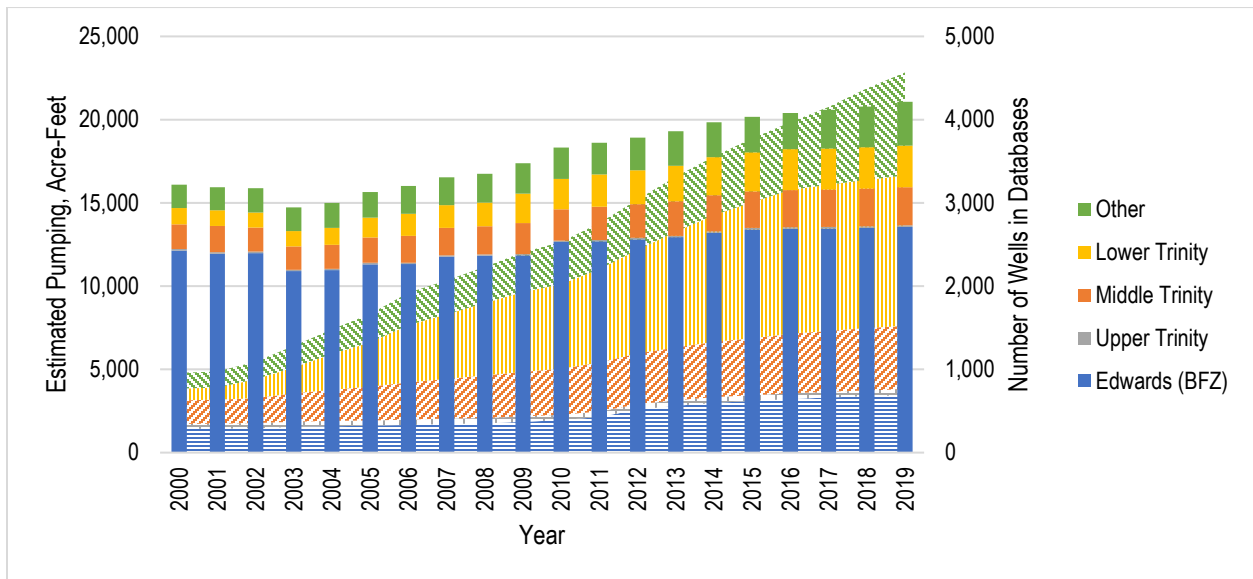


Figure 11. Travis County estimated groundwater pumping (columns) and number of wells (patterned area) for all designated uses.

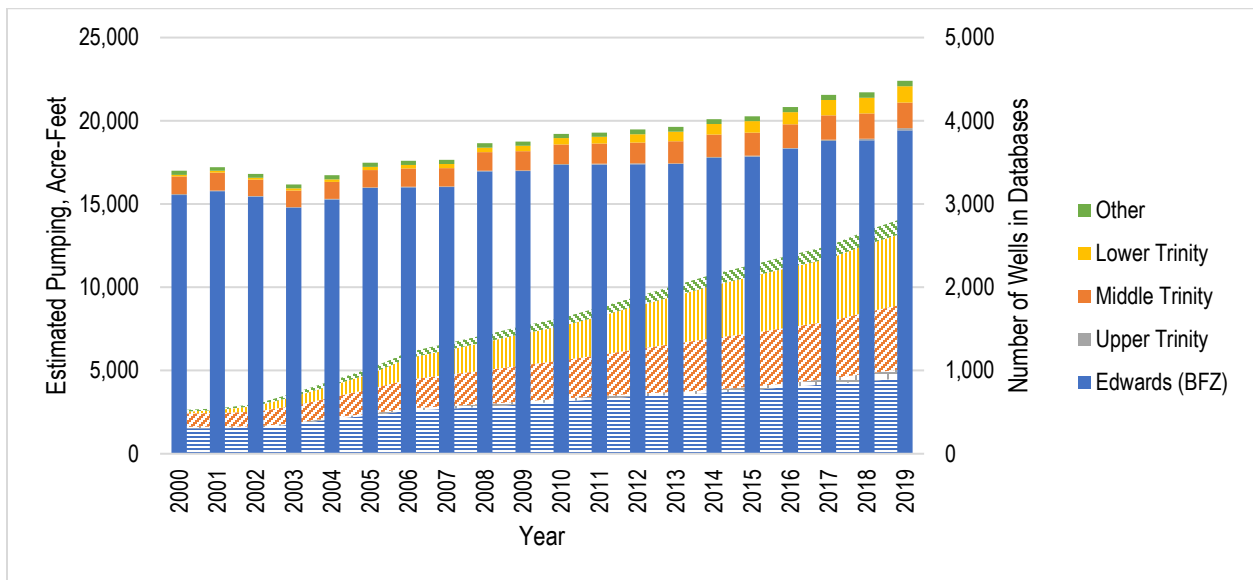


Figure 12. Williamson County estimated groundwater pumping (columns) and number of wells (patterned area) for all designated uses.

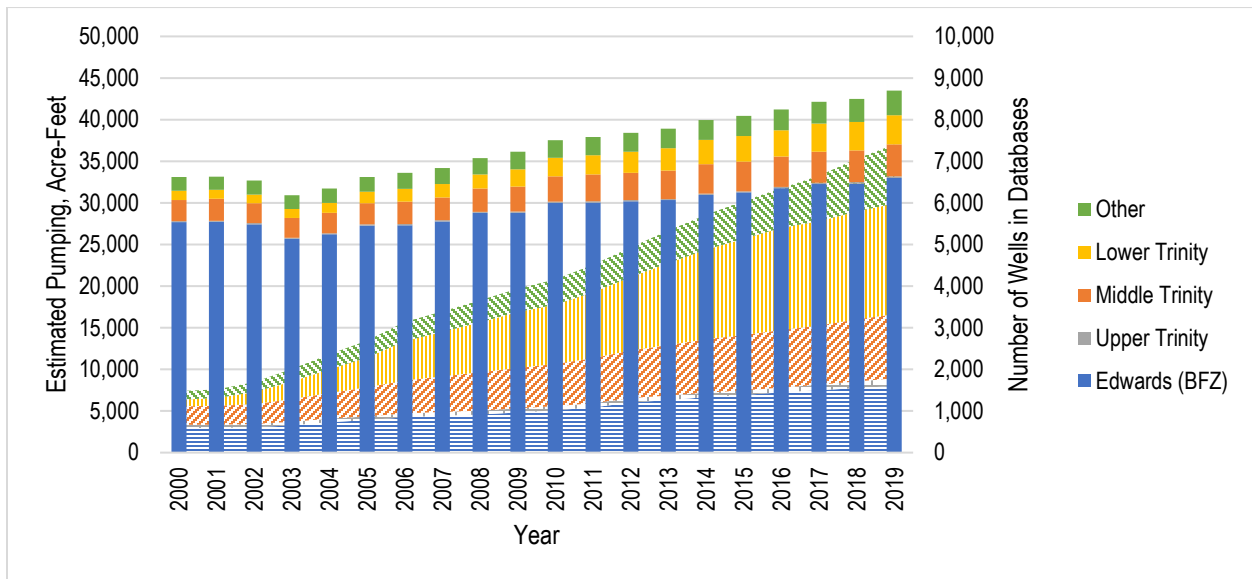


Figure 13. Travis and Williamson counties combined estimated groundwater pumping (columns) and number of wells (patterned area) for all designated uses.

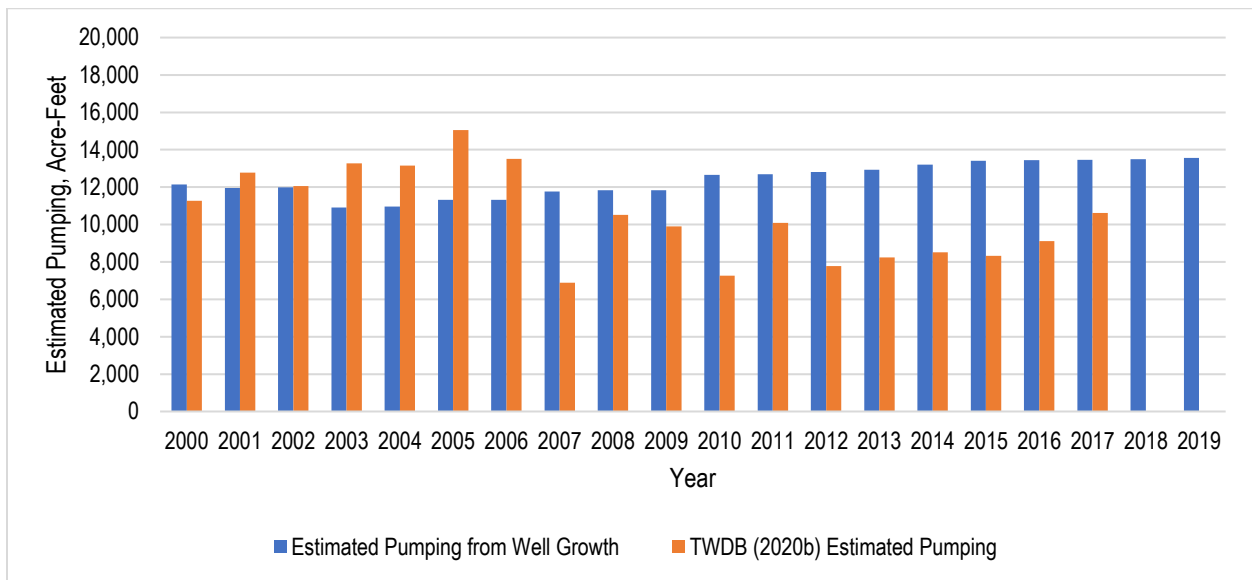


Figure 14. Travis County estimated groundwater pumping from the Edwards (BFZ) Aquifer.

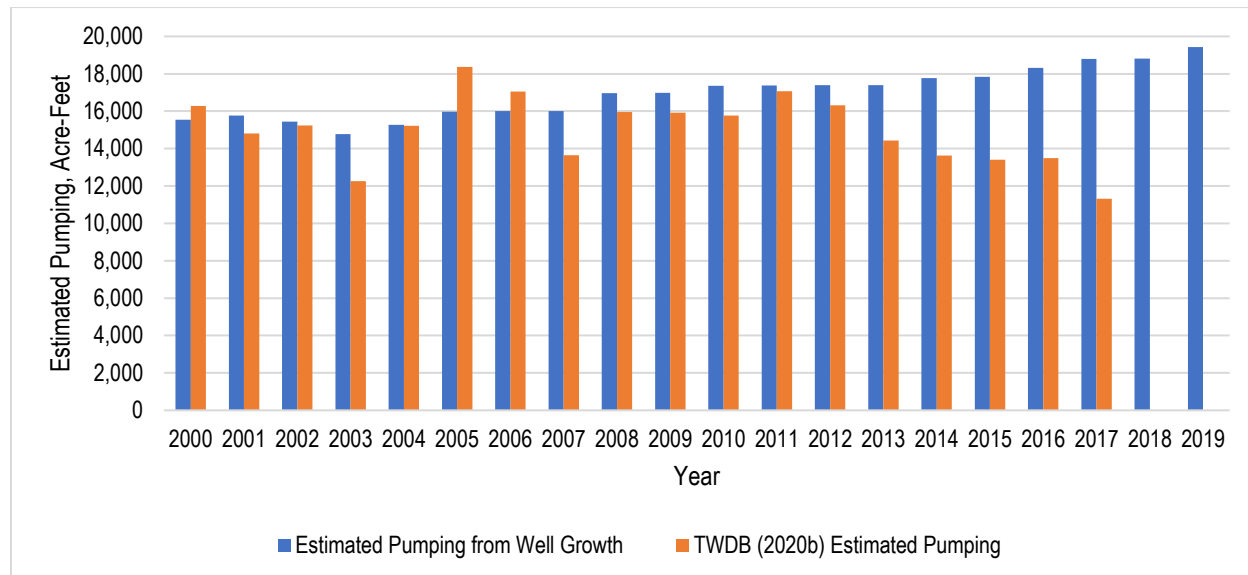


Figure 15. Williamson County estimated groundwater pumping from the Edwards (BFZ) Aquifer.

Figure 16 compares the estimated groundwater pumping based on the growth in the number of wells with the TWDB (2020b) estimated pumping from the Trinity Aquifer in Travis County. The TWDB estimated pumping combines pumping from each layer of the Trinity Aquifer together rather than dividing it between each of the subdivisions. Review of Figure 16 shows that the estimated pumping based on well growth is similar to the TWDB estimate until year 2010. In 2010 through 2013, the TWDB (2020b) estimate of pumping was about double the estimate based on the growth in the number of wells. Since 2013, the TWDB estimated pumping from the Trinity Aquifer is fairly constant at about 6,400 acre-feet per year with about 7,300 acre-feet in 2016. Based on the growth in Lower Trinity Aquifer wells for domestic (67.70 per year) and irrigation (14.00 per year) uses (see Table 8), an underestimation of the per well usage could easily account for the difference in pumping estimates in some years.

Figure 17 compares the estimated groundwater pumping based on the growth in the number of wells with the TWDB (2020b) estimated pumping from the Trinity Aquifer in Williamson County. For Williamson County, we observe a similar pattern to the TWDB pumping estimates in Travis County for the Trinity Aquifer (Figure 16) except in Williamson County the estimates based on well growth are similar only through 2007. TWDB (2020b) estimated pumping from the Trinity Aquifer in Williamson County peaks in 2010 at about 3,000 acre-feet then declines nearly every year through 2017. As shown on Table 8, wells have been added at a rate of 30.95 per year in the Middle Trinity and 41.85 per year in the Lower Trinity since 2000. The increase in the number of wells suggests pumping would increase with the associated uses. While the TWDB (2020b) peak pumping estimate is associated with abnormally dry conditions (<https://droughtmonitor.unl.edu/Data/Timeseries.aspx>), we would expect a leveling off of estimated pumping (such as Figure 16 shows for Travis County) or a general increase as suggested by the continued growth in the number of wells.

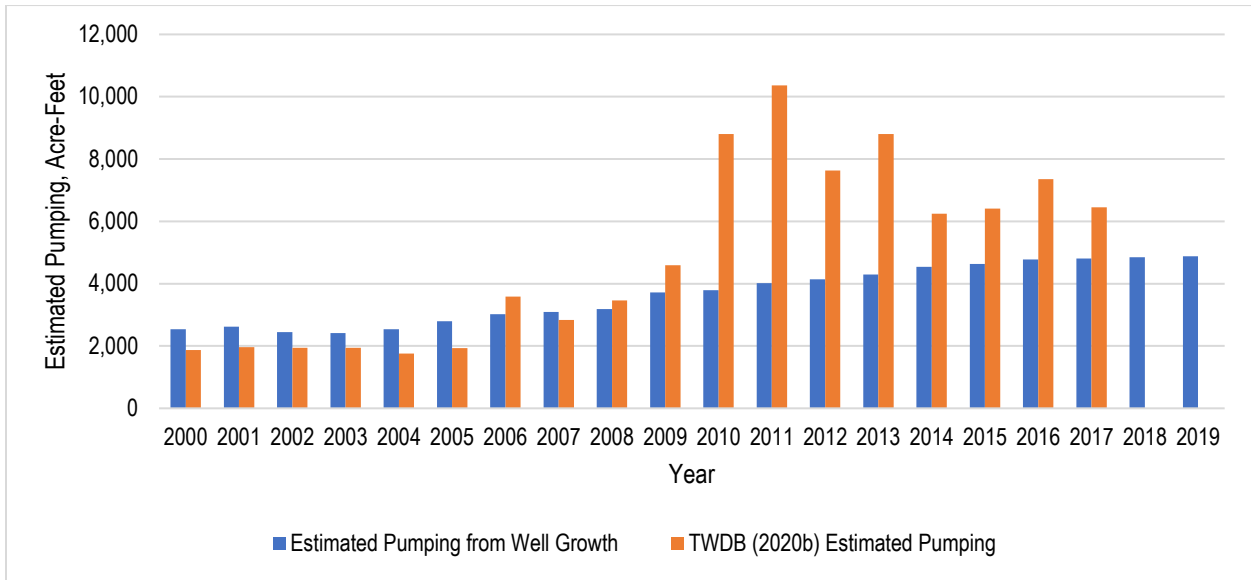


Figure 16. Travis County estimated groundwater pumping from the Trinity Aquifer.

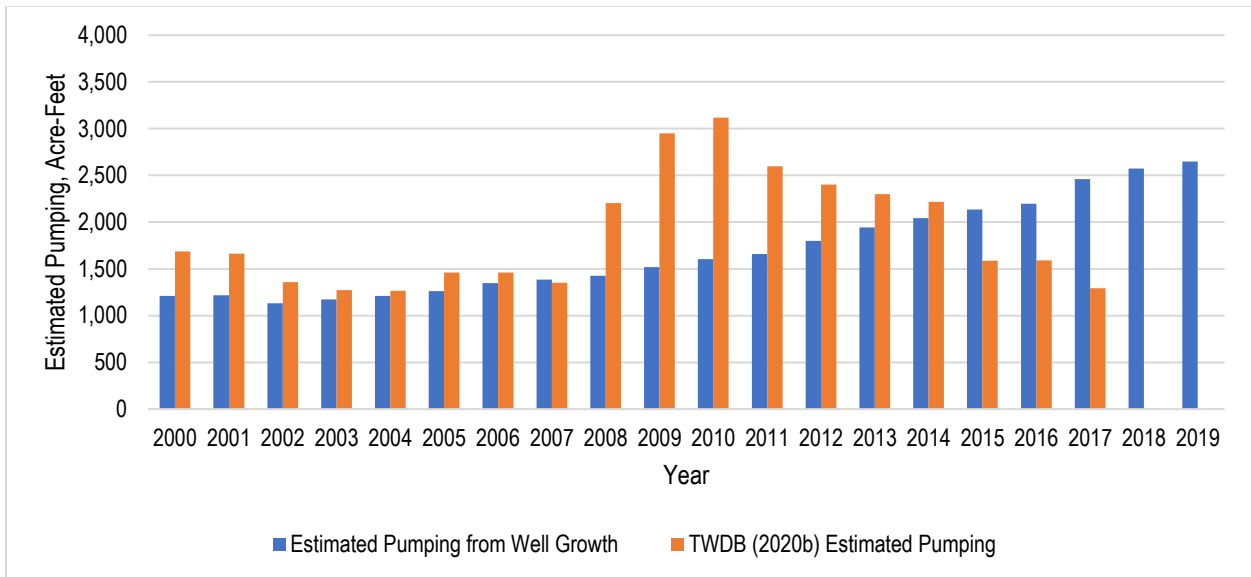


Figure 17. Williamson County estimated groundwater pumping from the Trinity Aquifer.

As shown on Figure 18, for Travis and Williamson counties combined, the TWDB estimate of groundwater pumping and the estimated groundwater pumping based on the growth in the number of wells is similar for the Trinity Aquifer. However, we still observe differing trends in the estimates using the two methods. With domestic and irrigation wells added at average rates of 43.85 per year and 5.90 per year, respectively, in the Middle Trinity since 2000 along with an average of 17.50 irrigation wells and 104.60 domestic wells per year in the Lower Trinity, we would not expect long-term declines in pumping.

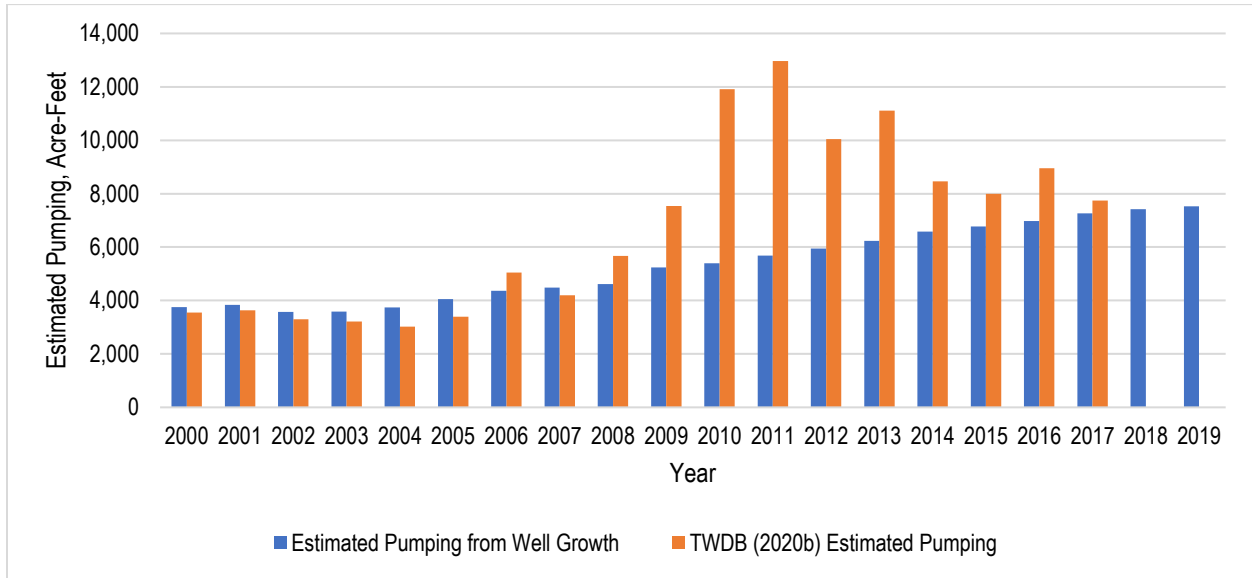


Figure 18. Travis and Williamson counties estimated groundwater pumping from the Trinity Aquifer.

Figure 19 illustrates the total estimated pumping from all aquifers within Travis and Williamson counties. We observe in the figure that pumping estimates from the TWDB and those based on the growth in the number of wells are relatively similar through 2012. We also observe that through 2012 the TWDB estimated pumping generally increased as the number of wells increased as reflected by the estimated pumping from well growth (also see Figure 3). After 2012, the TWDB pumping estimates show a declining trend with much of the declining trend due to the estimated declines in Trinity Aquifer pumping.

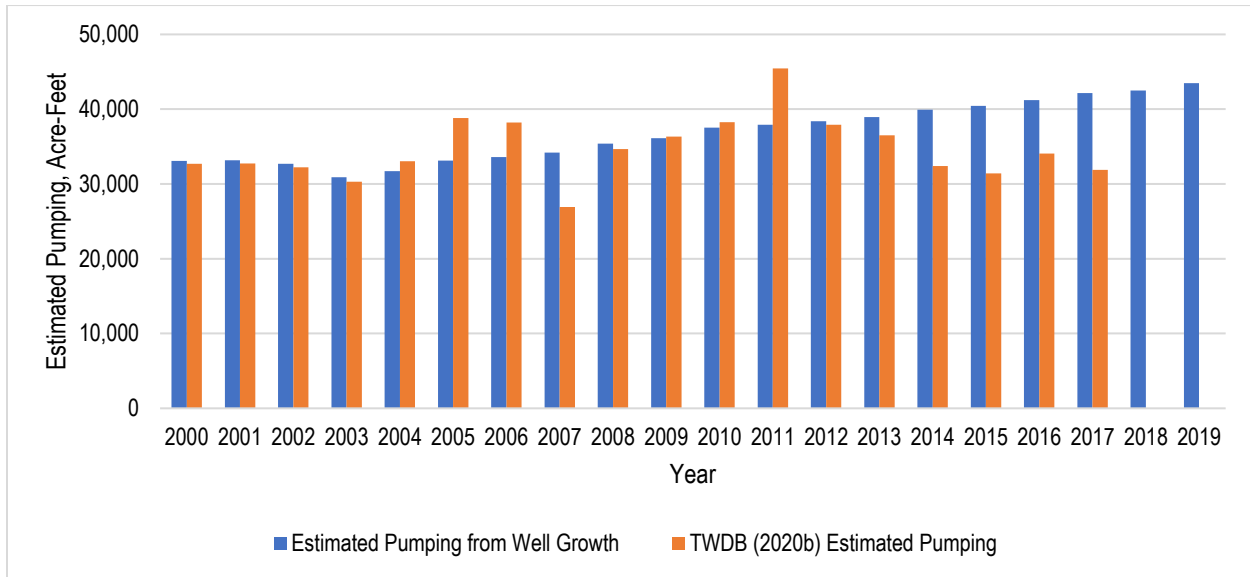


Figure 19. Travis and Williamson counties estimated groundwater pumping from the Edwards (BFZ), Trinity, and other aquifers.

Limitations

Our evaluation of the potential groundwater pumping is correlated to the growth in the number of water wells within our study area. The changes in pumping are tied to the number of wells we were able to identify from readily accessible databases with the assumption that more wells results in more groundwater pumping. While our analysis does account for wells being plugged, it does not consider the transition from groundwater to alternate water supplies. We would expect this limitation to apply primarily to estimates of municipal pumping which would result in a decrease in the total estimated production.

In addition, our evaluation does not address how pumping may vary based on climatic conditions. During a very dry year, pumping may be greater than would be predicted based on the number of wells and a per well pumping amount while the opposite would apply during a wet year. However, the estimate of pumping based on the number of wells should provide a reasonable long-term estimate of the changes in pumping.

Our analysis is also tied to the TWDB estimated groundwater pumping in 2003. To establish a baseline estimate of the amount of pumping per existing well, in most cases we used the 2003 estimated pumping per use and aquifer to determine the estimated production per well, use, casing diameter, and aquifer. While most of the per well estimates are reasonable, an undercount of the number of existing wells would lead to too high of an estimate per well. Also, if the TWDB estimated pumping for 2003 is too low, then the estimated pumping per well would be too low.

TWDB (2020b) estimates of groundwater pumping are based on Water Use Survey data along with TWDB staff research and professional opinions (<http://www.twdb.texas.gov/waterplanning/waterusesurvey/faq.asp>). It is certainly the best available information regarding estimated groundwater production, but there remains some uncertainty in the estimates when compared with the growth in the number of water wells and estimated use patterns in other nearby areas. In addition, review of the survey data associated with reporting entities reveals some entities with only a few years or a single year of pumping data and subsequent years should potentially be included in pumping estimates.

Conclusions


The growth in the number of wells in Travis and Williamson counties has been relatively consistent since 2000 based on information from publicly available databases. With an increase in the number of groundwater production wells, we would expect a corresponding increase in pumping. However, TWDB pumping estimates suggest pumping has been relatively consistent or decreasing within the two counties, especially in recent years. The pumping estimates derived from the growth in the number wells suggest that pumping may be greater than reflected in the TWDB estimates.

Estimates of pumping based on the growth in the number of wells are inherently uncertain because they do not account for the use of alternate water supplies or the fluctuations in use that may occur under varying climate conditions. Nonetheless, the estimates of pumping based on the growth in the number of wells should provide a reasonable estimate of pumping when building upon a baseline pumping amount. Our observation that the number of production wells is increasing consistently (TCEQ, 2020; TWDB, 2020a; TWDB, 2020c), but pumping estimates (TWDB, 2020b) in Travis and Williamson counties are not following a similar trend suggests the pumping from some aquifers may be more than the current TWDB estimates suggest, particularly in recent years.

Most of the new wells in Travis and Williamson counties are being completed in the Trinity Aquifer. In addition, most of these new wells are for domestic purposes. For these wells, we would not expect annual production to decline significantly unless it becomes too difficult to pump water due to insufficient available drawdown associated with declining water levels. We are aware that such water level declines in the Trinity Aquifer are occurring, which suggests that pumping is continuing to occur and likely increasing with the growth in the number of wells.

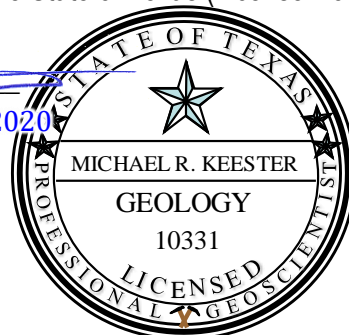
Geoscientist Seal

This report documents the work of the following licensed professional geoscientists with LRE Water, LLC, a licensed professional geoscientist firm in the State of Texas (License No. 50516).



Michael R. Keester, P.G.
Project Manager / Hydrogeologist

05/05/2020

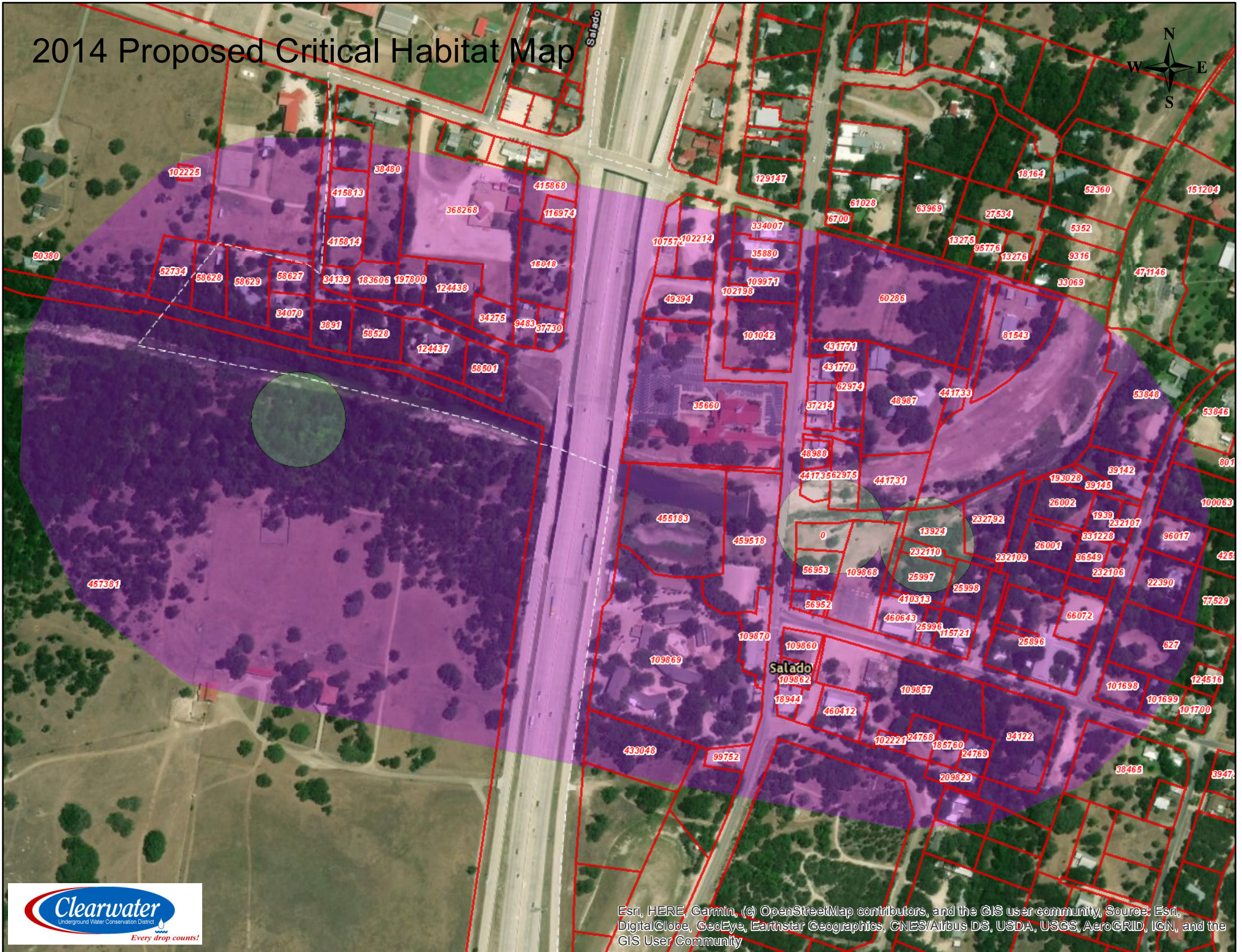


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Workshop Item #2

2014 Proposed Critical Habitat Map



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

BELL COUNTY ADAPTIVE MANAGEMENT COALITION

Update on Federal Regulation of the Salado Salamander
(March 11, 2020)

Background: After listing the Salado Salamander as a threatened species on March 26, 2014, USFWS was required to designate “critical habitat” within one year under federal law (16 U.S.C. § 1533). Although USFWS proposed critical habitat in 2012, it never issued a final rule. The 2012 proposal designated habitat within a 300-meter radius around several spring outlets located on private property west of IH 35 and along Salado Creek within the Village of Salado (cumulative 372 acres).

Why the renewed interest? Environmental organization Center for Biological Diversity sued USFWS to enforce the requirement to designate critical habitat for both the Salado and Georgetown Salamanders, alleging that sprawling urbanization has threatened habitat modification in the form of degraded water quality, quantity, and flow, and spring disturbance (see detailed allegations in federal complaint, ¶¶ 3, 33-38). USFWS settled agreeing to reissue a proposed rule and final rule.

Who is Center for Biological Diversity? Based in Arizona with offices around the country, but not in Texas, this non-profit with 69,000+ members has filed dozens of lawsuits to protect hundreds of species around the country over the past three decades.

What next? On February 28, 2020, the U.S. District Court for the District of Columbia entered an *Order Adopting Stipulated Settlement* requiring USFWS to issue a proposed rule on August 12, 2020, and a final rule addressing critical habitat on August 12, 2021. **Written public comment will be allowed within 30 days of publication, with the possibility of oral comment at a public meeting.**

Why did Congress require critical habitat? It’s one protection intended to aid the species’ recovery. Habitat includes areas occupied by the species with “physical or biological features...essential to the conservation of the species and...which may require special management considerations or protection and” and unoccupied areas “essential for the conservation of the species.” “Conservation” means more than simply surviving but also recovery (16 U.S.C. §§ 1532, 1533)

What activities are restricted within critical habitat? If there’s the possibility of adversely modifying the habitat and there’s a federal nexus (i.e, federal permitting, licensing or funding), then the activity may be restricted. In this situation, the federal agency with jurisdiction (e.g., U.S. Corps of Engineers) is bound to work with USFWS and the landowner through a “Section 7 consultation” to attempt to propose adjustments to the proposed activities so that the project may proceed without adversely impacting critical habitat. (16 U.S.C. § 1536, 50 C.F.R. § 424.18(a)).

Any exceptions to designation? It is unlikely that an exception applies. After one year from the listing date, only one exception remains: whether it is “not prudent” because designation could be threatened by human activity (e.g., commercial collecting and designation would increase the degree of the threat) or because designation would not be beneficial (e.g., habitat destruction is not a threat).

What is the Coalition’s plan? The Coalition will submit public comment focusing on economic analysis and the scientific data and analysis by its scientists at Baylor University, Texas A&M University, and in private practice over the past decade. It is the Coalition’s likely intent to establish that the 300-meter radius around every spring and along Salado Creek is not logical in all cases, similar to the points made by Bell County and Clearwater Underground Water Conservation District in 2012 and 2013. On a parallel track, the Coalition will educate and work with its local partners to prepare for, review and comment on the proposed rule to be published on August 12, 2020.

Bell County Adaptive Management Coalition

- 1) Opening comments and Introductions 10am
Why are we here and what has occurred over the last seven years related to the Salado Salamander? (Dirk Aaron, David Blackburn)
- 3) What is Critical Habitat and what do the leadership of the Coalition need to understand? (Mike Gershon, CUWCD General Counsel) 10:05
- 4) What has the coalition done to document the Salamanders over the last five years and what is a summary (So What) of our efforts? 10:20
Pete Diaz, Texas Fish & Wildlife Conservation Office
- 5) What have we accomplished in our scientific research/understanding? 10:30
D. Joe Yelderman, Baylor University Geologist
- 6) Sources of other Documented Studies & Spring Flow Gauge by USGS 10:40
 - a) Water Quality Understanding maintained by USGS funded by Clearwater
 - b) Salado-creek-gauges at Inn On the Creek location funded by Clearwater
- 7) Questions of the group 10:45
 - Who should be concerned and informed by the pending decisions?
 - Should we develop a short-term plan forward?
 - Should we be prepared to hire an outside consultant to offer solutions that can help mitigate the effects of the formal designation?
 - Does the group feel there is enough research data to support one of the following options?
 - Reduction in the proposed area being considered.
 - Expansion in the proposed area being considered.
 - Maintain the current area being proposed?
 - Given the likelihood of additional development around Salado is there support to mitigate the risk of additional restrictions?
 - Is the group interested in being involve in a stakeholder – driven process to either:
 - Develop a county wide HCP?
 - Or inform USFWS on the best structure for a special 4(d) rule?

Bell County Adaptive Management Coalition

By: Tim Brown

Bell County Commissioner – Precinct 2

Historical Perspective of the Coalition/Stakeholders:

We organized a stakeholders group a couple of years ago when the issue of endangered species first came up, specifically regarding the proposed listing of the Eurycea salamanders that live in the springs.

The group consists of Bell County, the Village of Salado, Salado Water Supply Corporation and Clearwater Underground Water Conservation District as well as some private property contributors. We have raised and spent a substantial amount of money on a variety of studies ranging from biological research focused directly on the target species to geo-hydrologic research designed to enhance our understanding of the structure and function of our portion of the Edwards BFZ aquifer.

We have forged very productive partnerships with U.S. Fish & Wildlife, Texas Parks & Wildlife, U.S. Geological Survey, Baylor University, and a number of private property owners to facilitate ongoing research. The benefits so far include the decision to list the Salado salamanders as threatened, rather than endangered, and substantially expanding what we know about the structure of the aquifer there in close proximity to the springs.

Our goal is to continue the efforts to maintain the assurance that conditions do warrant a more onerous burden of an endangered listing and, ultimately, to broaden our understanding of the geo-hydrology of the entire system so we can eventually develop the necessary regulatory tools to accommodate growth and development and at the same time protect the system.

It's a long-range strategy that has been very successful so far. The problems are that it involves a commitment to a vision that may be difficult for some people to grasp and harder for some to support politically. Funding by the Coalition is handled by the Bell County Auditor's Office on an annual basis. Partners of the Coalition submit commitments to the Auditor once the annual memorandum of agreement is signed by all parties.



Critical Habitat*

What is it?

When the Fish and Wildlife Service proposes a species for listing under the Endangered Species Act, we are required to consider whether there are geographic areas that contain essential features on areas that are essential to conserve the species. If so, we may propose designating these areas as critical habitat.

Here are answers to some of the most frequently asked questions about critical habitat.

What is critical habitat?

Critical habitat is the specific areas within the geographic area, occupied by the species at the time it was listed, that contain the physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection. Critical habitat may also include areas that were not occupied by the species at the time of listing but are essential to its conservation.

An area may be excluded from critical habitat designation based on economic impact, the impact on national security, or any other relevant impact, if we determine that the benefits of excluding it outweigh the benefits of including it, unless failure to designate the area as critical habitat may lead to extinction of the species.

Critical habitat designations affect only Federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no Federal “nexus”—that is, no Federal funding or authorization. Federal agencies are required to avoid “destruction” or “adverse modification” of designated critical habitat. The ESA requires the designation of “critical habitat” for listed species when “prudent and determinable.”

What provisions of the Endangered Species Act relate to critical habitat?

To protect endangered and threatened species, the ESA makes unlawful

Common Acronyms & Terms Associated With Critical Habitats

“4(d) rule”: Under the ESA, prohibited activities are defined for endangered species; however, the ESA allows the FWS to define the prohibited activities for threatened species. These “4(d)” or “special rules” allow the FWS to customize the protections of the ESA to match the conservation needs of the species.

Habitat Conservation Plan(HCP): Section 10 of the ESA may be used by landowners including private citizens, corporations, Tribes, States, and counties who want to develop property inhabited by listed species. Landowners may receive a permit to take such species incidental to otherwise legal activities, provided they have developed an approved habitat conservation plan. HCPs include an assessment of the likely impacts on the species from the proposed action, the steps that the permit holder will take to avoid, minimize, and mitigate the impacts, and the funding available to carry out the steps.

Recovery Take Permits Section 10(a)(1)(A): Recovery and interstate commerce permits are issued to allow for take as part of activities intended to foster the recovery of listed species (e.g. abundance surveys, genetic research)

Incidental Take Permits Section 10(a)(1)(B): Permits for an otherwise lawful activity where a listed species may be adversely affected, e.g. construction and/or development activities or in-stream or watershed activities that may impact listed species.

a range of activities involving such species without a permit for purposes consistent with conservation goals of the ESA. These activities include take, import, export, and interstate or foreign commerce. “Take” includes kill, harm, harass, pursue, hunt, capture, or collect or to attempt to engage in any such conduct.

The ESA requires Federal agencies to use their authorities to conserve endangered and threatened species and to consult with the Fish and Wildlife Service about actions that they carry out, fund, or authorize to ensure that they will not destroy or adversely modify critical habitat. The prohibition against destruction and adverse modification of critical habitat protects such areas in the interest of conservation.

How does the Fish and Wildlife Service determine areas to designate as critical habitat?

Biologists consider physical and biological features that the species needs for life processes and successful reproduction. These features include:

- space for individual and population growth and for normal behavior;
- cover or shelter;
- food, water, air, light, minerals, or other nutritional or physiological requirements;
- sites for breeding and rearing offspring, germination, or seed dispersal; and

Myths & Realities

Does designating critical habitat mean no further development can occur?

No. A critical habitat designation does not necessarily restrict further development. It is a reminder to Federal agencies of their responsibility to protect the important characteristics of these areas.

Does a critical habitat designation affect all activities that occur within the designated area?

No. Only activities that involve a Federal permit, license, or funding, and are likely to destroy or adversely modify critical habitat will be affected. If this is the case, we will work with the Federal agency and landowners—including private landowners—to amend their project to enable it to proceed without adversely affecting critical habitat. Most Federal projects are likely to go forward, but some may be modified to minimize harm.

■ habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of the species.

What is the process for designating critical habitat?

The Service may propose to list a species and concurrently propose to designate critical habitat, or it can address a species' critical habitat up to a year after the date of its listing. The Service proposes a critical habitat designation, publishing it in the *Federal Register* and requesting public comments. We may modify a proposal as a result of information provided in public comments. We base our final designation of critical habitat on the best scientific data available, after taking into consideration the probable economic and other impacts of the designation. After reviewing the comments, the Service responds to them and publishes a rule, including final boundaries, in the *Federal Register*.

Are Federal agencies required to consult with the Fish and Wildlife Service outside critical habitat areas?

Yes, even when there is no critical habitat designation, Federal agencies are required to fulfill their conservation responsibilities by consulting with the Service if their actions "may affect" listed species. The requirement helps to ensure that Federal agencies do not contribute to the decline of endangered and threatened species or their potential for recovery.

What is the purpose of designating critical habitat?

Designating areas as critical habitat does not establish a refuge or sanctuary for a species. Critical habitat is a tool to guide Federal agencies in fulfilling their conservation responsibilities by requiring them to consult with the Service if their actions may "destroy or adversely modify" critical habitat for listed species. A critical habitat designation helps to protect areas—occupied and unoccupied—necessary to conserve a species. Critical habitat has value in requiring the Service to gather more detailed information about a species than what is required for listing, thereby increasing knowledge to share with Federal agencies—and, in turn, increasing their effectiveness to conserve a listed species.

Are all the areas within the mapped boundaries considered critical habitat?

No. Our rules typically exclude developed areas such as buildings, roads, airports, parking lots, piers, and similar facilities. Accompanying text describes those areas.

Critical habitat is designed to protect the essential physical and biological features of a landscape and essential areas in the appropriate quantity and spatial arrangement that a species needs to survive and reproduce and ultimately be conserved.

Does the ESA require consideration of economic impacts as part of designating critical habitat?

Yes. The Service is required to consider potential economic impacts, as well as any other benefits or impacts of designating critical habitat—and may exclude an area if the benefits of excluding it outweigh the benefits of including it unless that would result in the extinction of the species.

Do economic considerations affect decisions to list a species as an endangered or threatened species?

No, the Act requires listing decisions to be made solely on the basis of the best available scientific and commercial information.

What is the impact of a critical habitat designation on economic development?

Most activities that require consultation by Federal agencies proceed without modification. In areas where the species is not present, some project modifications that would not have occurred without the critical habitat designation may be required. For example, the U. S. Army Corps of Engineers may schedule a beach renourishment project—that is, adding sand to a beach to stabilize it—before or after the nesting season of sea turtles to avoid harm to the sea turtles, their eggs, or their hatchlings.

Which species have critical habitat designated?

A list of all ESA protected species with designated critical habitat can be viewed online at <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>

**This document compiles data from "ESA Basics 40 Years of Conserving Endangered Species", FWS Jan 2013; and "Critical Habitat: What is it?", FWS Mar 2017.*

Workshop Item #3

**Board Meeting
May 13, 2020**

**Workshop Item: #_3_
FY21 Budget Development Calendar**

Workshop Item #3: Review Items of Interest concerning the FY2021 budget development process

FY21 Budget Development Calendar

May 13 - Wed.	Regular Board Meeting: Discuss and Approve Calendar for FY21 Budget preparation timeline.
June 10 – Wed.	Workshop: Budget Work Session.
July 8 -- Wed.	Workshop: Budget Work Session
August 7 - Friday	Voter Approval Rate (<i>former Rollback Rate</i>) calculated and provided to CUWCD by Tax Appraisal District. (estimated date)
August 12 – Wed.	Regular Board meeting: Finalize budget, Set preliminary tax rate. Set date for public hearing and adoption of tax rate.
August 14	Publish Notice in newspaper announcing Wednesday, August 26, 2020; public hearing on tax rate and adoption of FY21 budget (7 day notice required). Public Notice post with Co. Clerk and on the District Website.
August 26 - Wed.	Board Meeting and Conduct Public hearing on tax rate. Adopt FY19 budget; adopt tax rate. File copy of adopted budget and tax rate with County Clerk's office.
September 1	Provide adopted tax rate to the Tax Appraisal District by this date.
September 1 st – 3rd Tuesday – Thursday	Board Members attend the Texas Ground Water Summit in San Antonio
October 1	New budget period starts.

Changes Effective for per Truth in Taxation

Changes to calculations and notices effective for 2020

- Effective rate now called No-New-Revenue rate,
- Rollback rate now called Voter Approval rate:
 - Groundwater Districts Hospitals, junior colleges and special districts remain 8%
 - Cities & Counties reduced to 3.5%
 - Schools reduced to 2.5%
- New after a disaster declaration by the Governor...can revert to 8% for all entities
 - This is yet to be determined or if it will apply due to COVID 19.
- De minimis rate
 - The sum of:
 - the no-new-revenue rate,
 - the rate applied to current total value imposed a de minimis amount equal to \$500,000 and
 - the taxing unit's current debt rate.
 - De minimis amount to be set by Comptroller by August 1st each year.
- Unused increment rate
 - Taxing unit may "bank" unused growth as long as taxing unit averaged below 3.5% over three years Legislative Update - SB2
- Truth in Taxation
 - Certified Estimate – July 25th (BCAD will use this for 2020 Certification of the roll)
- August 7 – officer (Chief Appraiser) submits rates to all governing bodies in Bell County.
 - Post on taxing unit website
 - Updates on CAD Tax Rate Website
 - CAD mail post cards to owners
 - Other than ISD - cannot adopt rate until CAD mails postcards
- Must adopt rate by Sept 30 or 60 day after certification and
 - If rate exceeds voter approval rate - we must adopt 71 days before next uniform election date in November 3rd.

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Property Count: 172,032

Grand Totals

4/27/2020

8:43:28PM

Land		Value			
Homesite:		2,857,238,022			
Non Homesite:		2,950,362,935			
Ag Market:		2,033,009,214			
Timber Market:		1,134,706		Total Land	(+) 7,841,744,877
Improvement		Value			
Homesite:		13,812,466,788			
Non Homesite:		6,048,749,532		Total Improvements	(+) 19,861,216,320
Non Real		Count	Value		
Personal Property:		10,767	2,245,882,536		
Mineral Property:		0	0		
Autos:		3,380	38,191,913	Total Non Real	(+) 2,284,074,449
				Market Value	= 29,987,035,646
Ag	Non Exempt	Exempt			
Total Productivity Market:	2,033,554,342	589,578			
Ag Use:	56,698,020	15,710	Productivity Loss	(-)	1,976,832,127
Timber Use:	24,195	0	Appraised Value	=	28,010,203,519
Productivity Loss:	1,976,832,127	573,868	Homestead Cap	(-)	479,891,681
			Assessed Value	=	27,530,311,838
			Total Exemptions Amount (Breakdown on Next Page)	(-)	4,566,403,142
			Net Taxable	=	22,963,908,696

APPROXIMATE TOTAL LEVY = NET TAXABLE * (TAX RATE / 100)

819,811.54 = 22,963,908,696 * (0.003570 / 100)

Tax Increment Finance Value: 0

Tax Increment Finance Levy: 0.00

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Property Count: 172,032

Grand Totals

4/27/2020

8:43:28PM

Exemption Breakdown

Exemption	Count	Local	State	Total
AB	1	6,565,980	0	6,565,980
CH	126	37,997,648	0	37,997,648
CHODO	1	10,795,215	0	10,795,215
DV1	1,857	0	14,682,710	14,682,710
DV1S	272	0	1,231,309	1,231,309
DV2	1,618	0	13,682,242	13,682,242
DV2S	147	0	1,000,643	1,000,643
DV3	2,576	0	23,990,747	23,990,747
DV3S	173	0	1,442,356	1,442,356
DV4	8,902	0	67,133,395	67,133,395
DV4S	870	0	5,832,620	5,832,620
DVCH	1	0	140,092	140,092
DVHS	8,913	0	1,830,942,594	1,830,942,594
DVHSS	625	0	85,962,740	85,962,740
EX	2	0	109,478	109,478
EX-XD	1	0	131,612	131,612
EX-XG	22	0	1,920,763	1,920,763
EX-XI	46	0	30,230,838	30,230,838
EX-XJ	106	0	109,119,288	109,119,288
EX-XL	74	0	17,567,408	17,567,408
EX-XR	163	0	44,501,652	44,501,652
EX-XU	2	0	205,084	205,084
EX-XV	8,911	0	2,080,671,993	2,080,671,993
EX-XV (Prorated)	12	0	499,578	499,578
EX366	160	0	43,076	43,076
FR	24	43,016,943	0	43,016,943
FRSS	2	0	412,277	412,277
LIH	2	0	6,277,944	6,277,944
MASSS	34	0	7,756,684	7,756,684
OV65	19,635	86,389,583	0	86,389,583
OV65S	1,202	4,585,887	0	4,585,887
PC	55	31,540,318	0	31,540,318
SO	1	22,445	0	22,445
Totals		220,914,019	4,345,489,123	4,566,403,142

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Property Count: 172,032

Grand Totals

4/27/2020

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State Category Breakdown

State Code	Description	Count	Acres	New Value	Market Value	Taxable Value
A	SINGLE FAMILY RESIDENCE	97,128		\$450,177,803	\$15,580,644,412	\$13,112,043,210
B	MULTIFAMILY RESIDENCE	6,284		\$55,710,698	\$1,999,453,277	\$1,989,722,357
C1	VACANT LOTS AND LAND TRACTS	16,273		\$30,182	\$534,613,911	\$533,101,747
D1	QUALIFIED AG LAND	9,401	414,176.5331	\$11,040	\$2,057,654,330	\$80,272,096
D2	IMPROVEMENTS ON QUALIFIED OP	1,393		\$1,940,832	\$19,851,112	\$19,663,538
E	FARM OR RANCH IMPROVEMENT	7,881	59,471.6277	\$29,750,092	\$1,514,821,041	\$1,377,534,254
F1	COMMERCIAL REAL PROPERTY	5,356		\$38,773,992	\$2,469,967,975	\$2,469,313,576
F2	INDUSTRIAL REAL PROPERTY	207		\$937,515	\$773,792,528	\$747,360,080
J1	WATER SYSTEMS	7		\$0	\$352,570	\$352,570
J2	GAS DISTRIBUTION SYSTEM	22		\$0	\$30,276,180	\$30,276,180
J3	ELECTRIC COMPANY (INCLUDING C	119		\$0	\$318,200,384	\$318,200,384
J4	TELEPHONE COMPANY (INCLUDI	51		\$0	\$22,343,810	\$22,343,810
J5	RAILROAD	44		\$0	\$107,669,643	\$107,669,643
J6	PIPELAND COMPANY	204		\$0	\$25,488,637	\$22,168,069
J7	CABLE TELEVISION COMPANY	24		\$0	\$53,396,340	\$53,396,340
L1	COMMERCIAL PERSONAL PROPE	12,474		\$2,022,438	\$859,764,734	\$852,717,578
L2	INDUSTRIAL PERSONAL PROPERT	719		\$0	\$737,952,017	\$693,567,910
M1	TANGIBLE OTHER PERSONAL, MOB	5,003		\$2,048,980	\$39,508,581	\$36,701,748
O	RESIDENTIAL INVENTORY	5,767		\$128,339,175	\$399,805,692	\$396,096,710
S	SPECIAL INVENTORY TAX	187		\$0	\$101,406,895	\$101,406,895
X	TOTALLY EXEMPT PROPERTY	9,628		\$13,414,310	\$2,340,071,577	\$0
	Totals	473,648.1608		\$723,157,057	\$29,987,035,646	\$22,963,908,695

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Property Count: 172,032

Grand Totals

4/27/2020

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CAD State Category Breakdown

State Code	Description	Count	Acres	New Value	Market Value	Taxable Value
A		5		\$0	\$101,078	\$97,884
A1	REAL-RES/SINGLE FAMILY	92,941		\$448,603,898	\$15,441,701,020	\$12,988,386,464
A2	REAL-RES/MOBILE HOME	4,351		\$1,419,327	\$135,347,118	\$120,161,594
A3	IMPROVEMENTS ONLY-RES	106		\$154,578	\$3,495,196	\$3,397,268
B		3		\$0	\$6,278,764	\$6,278,764
B1	REAL-RES/MULTI FAMILY	1,746		\$9,345,887	\$1,060,699,091	\$1,060,329,240
B2	RESL-RES/DUPLEX	5,813		\$46,364,811	\$932,475,422	\$923,114,354
C1	VACANT LOT	15,034		\$30,182	\$388,924,738	\$387,416,324
C2	VACANT COMMERCIAL LOT	1,254		\$0	\$145,689,173	\$145,685,423
D1	QUALIFIED AGRICULTURAL LAND	9,408	414,193.9581	\$11,040	\$2,057,836,176	\$80,453,942
D2	IMPROVEMENTS ON QUALIFIED AG L	1,393	2.2500	\$1,940,832	\$19,851,112	\$19,663,538
D4	TEMP AG ACCT 2	1		\$0	\$40,000	\$40,000
E	NON QUALIFIED AG LAND	3,229		\$16,226	\$430,135,903	\$428,221,723
E1	FARM & RANCH IMPROVEMENT	5,089		\$29,092,246	\$1,052,665,831	\$920,846,834
E2	MOBILE HOME-FARM & RANCH	839		\$247,734	\$28,283,205	\$24,744,037
E3	IMPROVEMENTS ONLY-FARM & RAN	178		\$393,886	\$3,514,256	\$3,499,815
F1	COMMERCIAL IMPROVEMENT	5,315		\$38,773,992	\$2,464,077,872	\$2,463,423,473
F2	INDUSTRIAL IMPROVEMENT	207		\$937,515	\$773,792,528	\$747,360,080
F3	IMPROVEMENTS ONLY COMMERICA	41		\$0	\$5,890,103	\$5,890,103
J1	UTILITIES/WATER SYSTEMS	7		\$0	\$352,570	\$352,570
J2	UTILITIES/GAS COMPANIES	22		\$0	\$30,276,180	\$30,276,180
J3	UTILITIES/ELECTRIC CO	119		\$0	\$318,200,384	\$318,200,384
J4	UTILITIES/TELEPHONE CO	51		\$0	\$22,343,810	\$22,343,810
J5	RAILROADS	44		\$0	\$107,669,643	\$107,669,643
J6	PIPELINES	204		\$0	\$25,488,637	\$22,168,069
J7	CABLE TELEVISION COMPANY	24		\$0	\$53,396,340	\$53,396,340
L1	BUSINESS PERSONAL	12,474		\$2,022,438	\$859,764,734	\$852,717,578
L2	INDUSTRIAL PERSONAL	719		\$0	\$737,952,017	\$693,567,910
M1	MOBILE HOME (PERSONAL PROP)	5,003		\$2,048,980	\$39,508,581	\$36,701,748
O1	BLDRS/DEVELOPERS VACANT LOT	4,748		\$0	\$209,620,920	\$209,620,920
O2	BLDRS/DEVELOPERS IMPROVED LO	1,033		\$128,339,175	\$190,184,772	\$186,475,790
S	SPECIAL INVENTORY	187		\$0	\$101,406,895	\$101,406,895
X	TOTAL EXEMPT PROPERTY	9,628		\$13,414,310	\$2,340,071,577	\$0
	Totals	414,196.2081		\$723,157,057	\$29,987,035,646	\$22,963,908,697

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Property Count: 172,032

Effective Rate Assumption

4/27/2020

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New Value

TOTAL NEW VALUE MARKET:	\$723,157,057
TOTAL NEW VALUE TAXABLE:	\$608,290,537

New Exemptions

Exemption	Description	Count		
EX-XJ	11.21 Private schools	2	2019 Market Value	\$55,262
EX-XL	11.231 Organizations Providing Economic Deve	3	2019 Market Value	\$0
EX-XV	Other Exemptions (including public property, r	117	2019 Market Value	\$5,256,137
ABSOLUTE EXEMPTIONS VALUE LOSS				\$5,311,399

Exemption	Description	Count	Exemption Amount
DV1	Disabled Veterans 10% - 29%	60	\$433,000
DV1S	Disabled Veterans Surviving Spouse 10% - 29%	2	\$10,000
DV2	Disabled Veterans 30% - 49%	96	\$802,500
DV2S	Disabled Veterans Surviving Spouse 30% - 49%	5	\$37,500
DV3	Disabled Veterans 50% - 69%	204	\$2,098,000
DV3S	Disabled Veterans Surviving Spouse 50% - 69%	10	\$90,000
DV4	Disabled Veterans 70% - 100%	708	\$7,407,373
DV4S	Disabled Veterans Surviving Spouse 70% - 100	43	\$362,869
DVHS	Disabled Veteran Homestead	218	\$48,623,428
DVHSS	Disabled Veteran Homestead Surviving Spouse	4	\$709,705
OV65	OVER 65	1,256	\$5,567,007
OV65S	OVER 65 Surviving Spouse	6	\$25,000
PARTIAL EXEMPTIONS VALUE LOSS		2,612	\$66,166,382
NEW EXEMPTIONS VALUE LOSS			\$71,477,781

Increased Exemptions

Exemption	Description	Count	Increased Exemption_Amount
INCREASED EXEMPTIONS VALUE LOSS			
TOTAL EXEMPTIONS VALUE LOSS			\$71,477,781

New Ag / Timber Exemptions

2019 Market Value	\$263,381	Count: 2
2020 Ag/Timber Use	\$2,291	
NEW AG / TIMBER VALUE LOSS	\$261,090	

New Annexations**New Deannexations**

2020 PRELIMINARY TOTALS

WCLW - CLEARWATER U.W.C.D.

Average Homestead Value

Category A and E

Count of HS Residences	Average Market	Average HS Exemption	Average Taxable
61,324	\$182,455	\$7,763	\$174,692

Category A Only

Count of HS Residences	Average Market	Average HS Exemption	Average Taxable
57,750	\$179,949	\$6,784	\$173,165

Lower Value Used

Count of Protested Properties	Total Market Value	Total Value Used
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Workshop Item #5

**Workshop
May 13, 2020**

**Workshop Item #5
Title**

Workshop Item #5:

Review and discuss the required cybersecurity training of all district directors and staff members.

Narrative:

Texas Alliance of Groundwater Districts has addressed the On-Demand Cybersecurity Training and Shelly Chapman has registered all the staff and directors for the online free training coordinated for GCDs by TAGD.

TAGD's mission to serve as an educational resource to its members, TAGD is thrilled to be offering our members a free, on-demand Cybersecurity Awareness Training program certified by the Texas Department of Information Resources.

Under Section 2054 of the Texas Government Code, all local government employees with government computer system access, as well as all elected officials, are required to complete a certified cybersecurity awareness program by **June 14, 2020**.

To assist each director Shelly will be sending you each instruction on how conduct the Training from you District iPad or your personal computer. She will also provide you a prepared set of potential questions/answers you must answer upon conclusion of watching the video.

Staff Recommendation:

- 1) Make board aware on May 13th they must complete the required training by June 14th.
- 2) Shelly Chapman will assist each director on completing the training as needed.
- 3) Shelly will document each person completion and then report of all directors and staff's completion of the required training by the deadline.
- 4) Remind all that this training is required on an annual basis.