



**NOTICE OF MEETING OF THE
BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
BOARD OF DIRECTORS**

Thursday, June 9, 2022

5:00 PM

IN-PERSON

Notice is given that a **Regular Meeting** of the Board of Directors (Board) of the Barton Springs/Edwards Aquifer Conservation District will be held on **Thursday, June 9, 2022** commencing at **5:00 p.m.** at the **District office, located at 1124 Regal Row, Austin, Texas**. This meeting will be audio recorded and the recording will be available on the District's website after the meeting.

Public Comments at the Board Meeting – Please complete a comment card prior to the start of the meeting. Each registered person will be recognized and identified by the Presiding Officer or staff moderating the communications when it is their turn to speak. **Public comment is limited to 3 minutes per person.**

AGENDA

Note: The Board of Directors of the Barton Springs/Edwards Aquifer Conservation District reserves the right to meet in Executive Session at any time during the course of this meeting to discuss any of the matters listed on this agenda, as authorized by the Texas Government Code Sections §551.071 (Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), 551.087 (Economic Development), 418.183 (Homeland Security). No final action or decision will be made in Executive Session.

1. **Call to Order.**
2. **Citizen Communications (Public Comments of a General Nature).**
3. **Consent Agenda.** *(Note: These items may be considered and approved as one motion. Directors or citizens may request any consent item be removed from the consent agenda, for consideration and possible approval as a separate item of Regular Business on this agenda.)*
 - a. Approval of Financial Reports under the Public Funds Investment Act, Directors' Compensation Claims, and Specified Expenditures greater than \$5,000. **Pg. 4 & 32**
 - b. Approval of minutes of the Board's April 14, 2022 Regular Meeting. **Not for public review at this time**
4. **General Manager's Report. Discussion and possible action.**
Topics

- a. Review of Status Report and update on team activities/projects. **Pg. 40 & 54**
- b. Aquifer status update.
- c. Upcoming events of possible interest.

5. Discussion and Possible Action.

- a. Discussion and possible action related to the selection of the recipients of the Kent S. Butler Memorial Groundwater Stewardship College Scholarships. **Pg. 61**
- b. Discussion and possible action on aquifer conditions as related to Stage II Alarm Drought declaration. **NBU**
- c. Staff Presentation: "Preliminary Results and Insights from the BSEACD In-House Trinity Model" **Pg. 66**

6. Director Reports.

Directors may report on their involvement in activities and dialogue that are of likely interest to the Board, in one or more of the following topical areas:

- Meetings and conferences attended or that will be attended;
- Board committee updates;
- Conversations with public officials, permittees, stakeholders, and other constituents;
- Commendations; and
- Issues or problems of concern.

7. Adjournment.

Please note: This agenda and available related documentation, if any, have been posted on the District website, www.bseacd.org. If you have a special interest in a particular item on this agenda and would like any additional documentation that may be developed for Board consideration, please let staff know at least 24 hours in advance of the Board Meeting so that we can have those copies made for you. The Barton Springs/Edwards Aquifer Conservation District 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 the District office at 512-282-8441 at least 24 hours in advance if accommodation is needed.

Item 1

Call to Order

Item 2

Citizen Communications

Item 3

Consent Agenda

(Note: These items may be considered and approved as one motion. Directors or citizens may request any consent item be removed from the consent agenda, for consideration and possible approval as a separate item of Regular Business on this agenda.)

- a. Approval of Financial Reports under the Public Funds Investment Act, Directors' Compensation Claims, and Specified Expenditures greater than \$5,000.**
- b. Approval of minutes of the Board's April 14, 2022 Regular Meeting.**

Financial Reports – May 2022

June 9, 2022 Board Meeting

1. Profit and Loss Budget vs Actual

September 1, 2021 through May 31, 2022

2. Profit and Loss Previous Year Comparison

September 1, 2021 through May 31, 2022

3. Balance Sheet Previous Year Comparison

As of May 31, 2022 (compared to May 31, 2021)

4. Check Register – TRUIST Bank Account

May 1, 2022 through May 31, 2022

1. Profit and Loss Budget vs Actual

September 1, 2021 - May 31, 2022

**BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
PROFIT AND LOSS - BUDGET VS ACTUAL**

September 1, 2021 through May 31, 2022

	Sep 1, 2021-May 31, 2022	Budget	% of Budget	Notes
INCOME				
4400.0 · Interest Income	958.81	1,000.00	95.88%	
4625.0 · MISCELLANEOUS INCOME	16,813.94	0.00	100.0%	Includes \$16,778 from conservation credit donations
4800.0 · USAGE AND PRODUCTION FEES	1,441,576.78	1,527,582.00	94.37%	Includes 4 quarters of cycle billings (44,741 cons credits reduced the %)
4810.0 · OTHER FEES	13,121.80	12,300.00	106.68%	Well development, applications, pluggings
TOTAL INCOME	1,472,471.33	1,540,882.00	95.56%	
EXPENSE				
6000.0 · UTILITIES	13,708.69	22,000.00	62.31%	
6005.0 · Print/Copy/Photo Services	1,504.00	2,000.00	75.2%	
6007.0 · Postage/Freight/Shipping	696.03	2,500.00	27.84%	
6010.0 · Office Supplies	4,319.16	6,000.00	71.99%	
6010.2 · Office Furniture	0.00	1,500.00	0.0%	
6011.0 · Comp Hardware-Plotter Supplies	4,195.72	6,000.00	69.93%	
6014.0 · Software Acquisition and Upgrades	697.49	6,000.00	11.63%	
6015.0 · IT Monthly Maintenance	12,957.50	19,140.00	67.7%	
6016.0 · Meeting Expense	1,246.59	2,000.00	62.33%	
6019.0 · Subscriptions/Publications	2,790.85	4,200.00	66.45%	
6020.0 · Advertising	2,218.84	4,000.00	55.47%	
6021.0 · MISCELLANEOUS EXPENSES	556.48	0.00	100.0%	
6022.0 · Accounting System Operation	2,861.15	6,600.00	43.35%	Includes Jourmyx timekeeping software
6023.0 · MAINTENANCE	12,941.01	20,400.00	63.44%	Office and Auto
6025.4 · Facilities Repairs	2,859.80	5,000.00	57.2%	Septic System Repair
6040.0 · LEASES	7,515.72	10,650.00	70.57%	Copier and Postage Machine
6065.0 · DIRECTOR EXPENSES	0.00	2,500.00	0.0%	
6066.0 · Directors Compensation	12,050.00	25,000.00	48.2%	
6075.0 · DUES and MEMBERSHIPS	5,437.63	6,100.00	89.14%	
6080.0 · COMMUNICATIONS AND OUTREACH	8,536.82	19,011.00	44.91%	
6081.0 · REGULATORY COMPLIANCE	2,347.22	21,000.00	11.18%	

	Sep 1, 2021-May 31, 2022	Budget	% of Budget	Notes
6084.92 · GENERAL MANAGEMENT	3,889.01	34,523.00	11.27%	
6089.0 · AQUIFER SCIENCE	13,483.94	34,800.00	38.75%	
6090.0 · Conservation Credits	0.00	20,184.00	0.0%	Actual credits \$44,741 (with 16,778 donated back)
6100.0 · INSURANCE - DISTRICT	4,625.90	7,047.00	65.64%	Property, Liability, Auto, E&O
6150.0 · INSURANCE - GROUP	88,411.83	173,900.00	50.84%	Health, Dental, Life, Vision, STD and LTD
6160.0 · LEGAL SERVICES	43,059.59	85,000.00	50.66%	General Matters, Personnel, Redistricting
6170.0 · PROFESSIONAL SERVICES	41,422.76	106,150.00	39.02%	Audit, Elections, Retirement Fees
6179.0 · LEGISLATION	8,000.00	12,000.00	66.67%	Currently not in session
6180.0 · PROFESSIONAL DEVELOPMENT	4,802.32	19,000.00	25.28%	
6199.0 · SALARIES AND WAGES	579,843.69	951,668.00	60.93%	
6203.0 · TAXES and BENEFITS	93,859.86	133,527.00	70.29%	
6800.0 · PROJECTS (Jacob's Well Project)	24,552.46	83,000.00	29.58%	Jacob's Well Project
TOTAL EXPENSE	1,005,392.06	1,852,400.00	54.28%	
NET ORDINARY INCOME	467,079.27	-311,518.00		Negative effect (shortfall) to budget before accounting for the transfers to balance the budget, shown below.
OTHER INCOME				
9000.00 · Transfer from Reserves	0.00	311,868.00		\$175,000 from Cash Flow Reserve, \$3361 scholarship donations, \$83,000 Jacobs Well project; \$50,507 from General.
TOTAL OTHER INCOME	0.00	311,868.00		
NET INCOME	467,079.27	350.00		This is the difference between the negative amount in Net Ordinary Income before the transfers in from other accounts, needed to balance the budget

2. Profit and Loss - Previous Year Comparison

September 1, 2021 - May 31, 2022

**BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
PROFIT AND LOSS - PREVIOUS YEAR COMPARISON**

September 1, 2021 - May 31, 2022

	Sept 1, 2021 - May 31, 2022	Sept 1, 2020 - May 31, 2021	\$ Change	% Change
INCOME				
4400.0 · Interest Income	958.81	824.30	134.51	16.32%
4625.0 · MISCELLANEOUS INCOME (includes \$16,778 conservation credits donation)	16,813.94	8,141.53	8,672.41	106.52%
4800.0 · USAGE AND PRODUCTION FEES *	1,441,576.78	1,638,420.04	-196,843.26	-12.01%
4810.0 · OTHER FEES (well development, applications, pluggings)	13,121.80	12,853.43	268.37	2.09%
TOTAL INCOME	1,472,471.33	1,660,239.30	-187,767.97	-11.31%
EXPENSE				
6000.0 · UTILITIES	13,708.69	13,893.21	-184.52	-1.33%
6005.0 · Print/Copy/Photo Services	1,504.00	836.60	667.40	79.78%
6007.0 · Postage/Freight/Shipping	696.03	1,364.32	-668.29	-48.98%
6010.0 · Office Supplies	4,319.16	2,899.13	1,420.03	48.98%
6011.0 · Comp Hardware-Plotter Supplies (replaced two 7-year old desktops)	4,195.72	1,256.87	2,938.85	233.82%
6014.0 · Software Acquisition and Upgrades	697.49	3,092.11	-2,394.62	-77.44%
6015.0 · IT Monthly Maintenance (contract services increased)	12,957.50	9,000.00	3,957.50	43.97%
6016.0 · Meeting Expense	1,246.59	532.55	714.04	134.08%
6019.0 · Subscriptions/Publications	2,790.85	744.88	2,045.97	274.67%
6020.0 · Advertising	2,218.84	5,074.74	-2,855.90	-56.28%
6021.0 · MISCELLANEOUS EXPENSES (2021 refunded EP SOAH deposit \$53,404)	556.48	55,425.01	-54,868.53	-99.0%
6022.0 · Accounting System Operation (includes Journyx timekeeping software)	2,861.15	3,158.15	-297.00	-9.4%
6023.0 · MAINTENANCE (Office and Auto)	12,941.01	8,783.87	4,157.14	47.33%
6025.4 · Facilities Repairs (includes Septic System Repair)	2,859.80	2,611.00	248.80	9.53%
6040.0 · LEASES (Copier and Postage Machine)	7,515.72	7,052.05	463.67	6.58%
6065.0 DIRECTOR EXPENSES	0.00	33.77	-33.77	-100.0%
6066.0 Directors Compensation	12,050.00	16,300.00	-4,250.00	-26.07%
6075.0 · DUES and MEMBERSHIPS	5,437.63	5,685.12	-247.49	-4.35%
6080.0 · COMMUNICATIONS AND OUTREACH	8,536.82	3,393.79	5,143.03	151.54%
6081.0 · REGULATORY COMPLIANCE	2,347.22	5,397.74	-3,050.52	-56.52%
6084.92 · GENERAL MANAGEMENT	3,889.01	10,078.85	-6,189.84	-61.41%

	Sept 1, 2021 - May 31, 2022	Sept 1, 2020 - May 31, 2021	\$ Change	% Change
6089.0 · AQUIFER SCIENCE	13,483.94	10,807.06	2,676.88	24.77%
6100.0 · INSURANCE - DISTRICT (Property, Liability, Auto, E&O)	4,625.90	4,440.43	185.47	4.18%
6150.0 · INSURANCE - GROUP (Employee Health, Dental, Life, Vision)	88,411.83	95,466.07	-7,054.24	-7.39%
6160.0 · LEGAL SERVICES	43,059.59	77,428.95	-34,369.36	-44.39%
6168.11 · SOAH - EP	0.00	1,171.88	-1,171.88	-100.0%
6170.0 · PROFESSIONAL SERVICES	41,422.76	127,100.81	-85,678.05	-67.41%
6179.0 · LEGISLATION (not in session)	8,000.00	26,000.00	-18,000.00	-69.23%
6180.0 · PROFESSIONAL DEVELOPMENT	4,802.32	2,814.78	1,987.54	70.61%
6199.0 · SALARIES AND WAGES	579,843.69	600,218.66	-20,374.97	-3.4%
6203.0 · TAXES & BENEFITS	93,859.86	88,899.77	4,960.09	5.58%
6800.0 · PROJECTS (Jacob's Well Project)	24,552.46	0.00	24,552.46	100.0%
TOTAL EXPENSE	1,005,392.06	1,190,962.17	-185,570.11	-15.58%
NET INCOME	467,079.27	469,277.13	-2,197.86	-0.47%

CAPITALIZATION INDICATES ACCOUNTS THAT HAVE SUB-CATEGORIES.

Those sub-categories have been collapsed.

* Difference attributed to the decreased CoA fees in 2022 (approx \$192,000 at the time of this report), and the higher conservation credits in 2022 (\$44,741).

3. Balance Sheet - Previous Year Comparison

As of May 31, 2022
(compared to May 31, 2021)

**BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
BALANCE SHEET - PREVIOUS YEAR COMPARISON**

As of May 31, 2022

	May 31, 2022	May 31, 2021	\$ Change	% Change
ASSETS				
Current Assets				
Checking/Savings				
1000.0 · Cash in Bank-Checking Trust	84,346.44	54,235.53	30,110.91	55.52%
1010.0 · Cash in Bank - Payroll Trust	32,259.66	33,885.70	-1,626.04	-4.8%
1030.0 · TexPool Funds - General				
1030.1 · Aquifer Protection Reserve	56,750.00	52,050.00	4,700.00	9.03%
1030.21 · Cash Flow Reserve (approved usage for operational budget)	175,000.00	350,000.00	-175,000.00	-50.0%
1030.3 · Hays Co/HTGCD Jacobs Well (funds are now in operational budget)	0.00	83,000.00	-83,000.00	-100.0%
1030.0 · TexPool Funds - General - Operational	929,235.28	342,767.85	586,467.43	171.1%
Total 1030.0 · TexPool Funds - General	1,160,985.28	827,817.85	333,167.43	40.25%
1040.0 · TexPool Funds - Contingency	505,061.95	504,747.52	314.43	0.06%
1045.0 · TexPool Funds - Reserve (to cover vacation and comp benefits payable)	64,595.59	61,057.49	3,538.10	5.8%
Total Checking/Savings	1,847,248.92	1,481,744.09	365,504.83	24.67%
Accounts Receivable				
1200.0 · Accounts Receivable				
1200.1 · A/R DMF (currently not in drought)	0.00	-2,000.00	2,000.00	100.0%
1200.0 · Accounts Receivable (billed invoices not yet received)	88,812.45	79,953.19	8,859.26	11.08%
Total 1200.0 · Accounts Receivable	88,812.45	77,953.19	10,859.26	13.93%
Total Accounts Receivable	88,812.45	77,953.19	10,859.26	13.93%
Other Current Assets				
1100.0 · Petty Cash	300.00	300.00	0.00	0.0%
1300.0 · Pre-paid Expenses	5,889.69	4,354.60	1,535.09	35.25%
1499.0 · Undeposited Funds-A/R payments (received, posted but not yet deposited)	4,843.84	248,254.25	-243,410.41	-98.05%
Total Other Current Assets	11,033.53	252,908.85	-241,875.32	-95.64%
Total Current Assets	1,947,094.90	1,812,606.13	134,488.77	7.42%

	May 31, 2022	May 31, 2021	\$ Change	% Change
Fixed Assets				
1400.0 · Field Equipment	376,487.89	376,487.89	0.00	0.0%
1410.0 · Office Equipment and Furniture	19,722.90	19,722.90	0.00	0.0%
1410.1 · Computer Hardware and Software	19,329.69	19,329.69	0.00	0.0%
1420.0 · Vehicles	52,363.03	52,363.03	0.00	0.0%
1430.0 · Accumulated Depreciation	-608,852.24	-608,852.24	0.00	0.0%
1440.0 · Land (Antioch Cave)	165,415.00	165,415.00	0.00	0.0%
1445.0 · Office Building	268,588.04	268,588.04	0.00	0.0%
Total Fixed Assets	293,054.31	293,054.31	0.00	0.0%
Other Assets				
1500.0 · Organizational Costs	300,783.26	300,783.26	0.00	0.0%
1510.0 · Accumulated Amortization	-326,324.26	-326,324.26	0.00	0.0%
1600.0 · Deposits Paid (Utilities)	71.00	71.00	0.00	0.0%
Total Other Assets	-25,470.00	-25,470.00	0.00	0.0%
TOTAL ASSETS	2,214,679.21	2,080,190.44	134,488.77	6.47%
LIABILITIES & EQUITY				
Liabilities				
Current Liabilities				
Credit Cards				
2007.0 · Trust VISA	10,882.89	0.00	10,882.89	100.0%
Total Credit Cards	10,882.89	0.00	10,882.89	100.0%
Other Current Liabilities				
2010.0 · Rebates Payable - Cons Credits	44,741.10	20,183.63	24,557.47	121.67%
2100.0 · Deferred Revenue	75,741.00	75,741.00	0.00	0.0%
2110.0 · Direct Deposit Liabilities	1,035.01	1,035.00	0.01	0.0%
2200.0 · Fica and Medicare Withheld	0.00	35.52	-35.52	-100.0%
2220.0 · Federal Income Tax Withheld	-1,035.01	-1,035.01	0.00	0.0%
2230.0 · Employer Fica and Med Payable	-139.25	-103.73	-35.52	-34.24%
2250.0 · TWC Unemployment Tax Payable	2,520.00	1,431.05	1,088.95	76.09%
2270.0 · Payroll Liabilities	0.09	0.09	0.00	0.0%
2300.0 · Accrued Vacation Payable (Actual Vacatin and Comp Benefits Payable)	67,239.95	57,251.86	9,988.09	17.45%
Total Other Current Liabilities	190,102.89	154,539.41	35,563.48	23.01%
Total Current Liabilities	200,985.78	154,539.41	46,446.37	30.06%
Total Liabilities	200,985.78	154,539.41	46,446.37	30.06%

	May 31, 2022	May 31, 2021	\$ Change	% Change
Equity				
3000 0 Fund Balance	1,181,186.90	1,090,946.64	90,240.26	8.27%
3000 3 Invested in Capital Assets	365,127.26	365,127.26	0.00	0.0%
3110 0 Reserve for Petty Cash	300.00	300.00	0.00	0.0%
Net Income	467,079.27	469,277.13	-2,197.86	-0.47%
Total Equity	2,013,693.43	1,925,651.03	88,042.40	4.57%
TOTAL LIABILITIES & EQUITY	2,214,679.21	2,080,190.44	134,488.77	6.47%

4. Check Register

TRUIST BANK
May 1 – May 31, 2022

BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT

MONTHLY CHECK REGISTER

May 1 - May 31, 2022

Type	Date	Num	Name	Memo	Amount	Balance
Check	05/01/2022	26306	Michael Redman	VOID: 370 Miles-Reimbursement for TELEA Conference MIR	0.00	89,537.58
Check	05/02/2022	26307	Michael Redman	224 Miles-Reimbursement for TELEA Conference MIR	-131.04	89,537.58
Check	05/02/2022	26308	Waste Management	Trash and Recycle Service 5/1/2022 - 5/31/2022	-482.00	89,406.54
Check	05/03/2022	26309	Jan-Pro of Austin	Office Cleaning Service 5/1 - 5/31/2022	-270.00	88,924.54
Check	05/05/2022	26302	Tammy Raymond	Petty Cash Fund Replenishment	-234.15	88,654.54
Liability Check	05/05/2022	EFT5052022	United States Treasury	74-2488641 Employee Bi-weekly Payroll Tax Liability	-8,574.25	88,420.39
Liability Check	05/05/2022	EFT5522	United States Treasury	74-2488641 Additional Withholding JW	-40.32	79,846.14
Liability Check	05/05/2022	EFT50522	Reliance Trust Company	Employee Bi-weekly Retirement	-4,842.45	79,805.82
Check	05/05/2022	26310	Orsak Landscape Services	Lawn Service 4/30/2022	-70.00	74,963.37
Check	05/05/2022	26311	Wellntel Inc	Extreme Weather Battery - reissue of lost check #26055	-199.00	74,893.37
Check	05/06/2022	26312	IntegrITALK c/o Telco Experts	Office Phone Service 5/1 - 5/31/2022 Account #3558	-443.94	74,694.37
Check	05/06/2022	26313	Integritek	Monthly Internet and MS 365 - May	-1,492.50	74,250.43
Check	05/06/2022	26314	Smith, Brian A.	Expense Reimbursement - Supplies, Dues and Mileage	-128.97	72,757.93
Check	05/10/2022	26315	In-Situ Inc.	Cellular Telemetry Equipment - Shared Territory Provision	-637.19	71,991.77
Check	05/10/2022	26316	Charter Communications	Internet Service 4/30/2022 - 5/29/2022	-231.19	71,760.58
Check	05/10/2022	26317	Loftus, Timothy T.	Per Diem TAGD Business Meeting 5/16 - 5/18/2022	-107.00	71,653.58
Check	05/10/2022	26318	Watson, Jeffery A.	Mileage and Computer Hardware	-311.68	71,341.90
Check	05/11/2022	26319	American Color Labs	Precinct Maps on Foam Boards	-271.23	71,070.67
Check	05/11/2022	26320	Quill Corporation	Copy Paper, Staplers, Clipboard	-140.33	70,930.34
Check	05/11/2022	26321	Pitney Bowes Global Financial Svcs	Postage Machine Lease 6-10-2022 through 9-9-2022	-264.90	70,665.44
Transfer	05/12/2022			Funds Transfer - Payroll	-24,000.00	46,665.44
Deposit	05/13/2022			Deposit (Permittee Production Fees)	18,746.22	65,411.66
Liability Check	05/13/2022	26322	AFLAC	May Employee-paid Premium	-107.30	65,304.36
Liability Check	05/13/2022	26323	United Healthcare	June Employee Premium	-10,756.48	54,547.88
Liability Check	05/13/2022	26324	Sun Life Assurance	June Life/Disability/Dental/Vision Premium	-1,273.07	53,274.81
Check	05/13/2022	26325	Fidelity Security Life Insurance Co	June Gap Insurance Premium	-941.61	52,333.20
Check	05/13/2022	26326	CIT Technology Fin Serv, Inc	June Copier Lease	-675.00	51,658.20
Check	05/13/2022	26327	Ready Refresh	4/9 - 5/1/2022 Bottled Water Delivery	-169.91	51,488.29

Type	Date	Num	Name	Memo	Amount	Balance
Check	05/13/2022	26328	Quill Corporation	Creamer, Foam Cups	-71.90	51,416.39
Transfer	05/13/2022			Funds Transfer (funds too low in checking)	50,000.00	101,416.39
Check	05/18/2022	26329	City of Austin	May Water Service	-21.47	101,394.92
Check	05/18/2022	26330	Orsak Landscape Services	Landscaping Beds, Tree Trimming	-710.00	100,684.92
Check	05/18/2022	26331	ESRI	ArcGIS Spatial Analyst modeling	-2,500.00	98,184.92
Liability Check	05/19/2022	EFT51922	Reliance Trust Company	Bi-weekly Retirement	-4,831.83	93,353.09
Liability Check	05/20/2022	EFT5202022	United States Treasury	74-2488641 Employee Payroll Tax Liabilities	-8,588.75	84,764.34
Check	05/20/2022	26332	Loftus, Timothy T.	EAA Staff Field Trip Mileage at 140 miles at 0.585	-81.90	84,682.44
Deposit	05/24/2022			Deposit (CoA/AWU 4th Quarter Water Use Fee)	200,727.00	285,409.44
Deposit	05/24/2022			Deposit (Permittee Production Fees)	21,937.00	307,346.44
Transfer	05/26/2022			Funds Transfer - Payroll	-23,000.00	284,346.44
Transfer	05/26/2022			Funds Transfer - TexPool General (funds too high in checking)	-200,000.00	84,346.44
					-5,191.14	84,346.44
					<u>-5,191.14</u>	<u>84,346.44</u>

Financial Reports – April 2022

~~May 12, 2022 Board Meeting~~

- 1. Profit and Loss Budget vs Actual**
September 1, 2021 through April 30, 2022

- 2. Profit and Loss Previous Year Comparison**
September 1, 2021 through April 30, 2022

- 3. Balance Sheet Previous Year Comparison**
As of April 2022 (compared to April 2021)

- 4. Check Register – TRUIST Bank Account**
April 1, 2022 through April 30, 2022

1. Profit and Loss Budget vs Actual

September 1, 2021 - April 30, 2022

BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
PROFIT AND LOSS - BUDGET VS ACTUAL

September 1 - April 30, 2022

	Sept 1, 2021 - Apr 30, 2022	Budget	% of Budget	Notes
INCOME				
4400.0 - Interest Income	545.62	1,000.00	54.56%	
4625.0 - MISCELLANEOUS INCOME	23,488.92	0.00	100.0%	Includes \$16,778 from conservation credit donation
4800.0 - USAGE AND PRODUCTION FEES	1,137,546.89	1,527,582.00	74.47%	Includes 3 quarters of cycle billings (44.74% cons credits reduced the %)
4810.0 - OTHER FEES	11,336.80	12,300.00	92.17%	Well development, applications, and pluggings
TOTAL INCOME	1,172,918.23	1,540,882.00	76.12%	
EXPENSE				
6000.0 - UTILITIES	13,012.09	22,000.00	59.15%	
6005.0 - Print/Copy/Photo Services	695.75	2,000.00	34.79%	
6007.0 - Postage/Freight/Shipping	626.57	2,500.00	25.06%	
6010.0 - Office Supplies	3,945.54	6,000.00	65.76%	
6010.2 - Office Furniture	0.00	1,500.00	0.0%	
6011.0 - Comp Hardware-Plotter Supplies	4,071.24	6,000.00	67.85%	Two older desktops required replacement
6014.0 - Software Acquisition and Upgrades	592.00	6,000.00	9.87%	
6015.0 - IT Monthly Maintenance	11,527.50	19,140.00	60.23%	
6016.0 - Meeting Expense	946.86	2,000.00	47.34%	
6019.0 - Subscriptions/Publications	2,671.45	4,200.00	63.61%	
6020.0 - Advertising	2,218.84	4,000.00	55.47%	
6021.0 - MISCELLANEOUS EXPENSES	495.74	0.00	100.0%	
6022.0 - Accounting System Operation	2,525.55	6,600.00	38.27%	Includes Journyx timekeeping software
6023.0 - MAINTENANCE	8,332.96	20,400.00	40.85%	Office and Auto
6025.4 - Facilities Repairs	2,859.80	5,000.00	57.2%	Septic system repair
6040.0 - LEASES	6,575.82	10,650.00	61.75%	Copier and postage machine
6065.0 - DIRECTOR EXPENSES	0.00	2,500.00	0.0%	
6066.0 - Directors Compensation	12,050.00	25,000.00	48.2%	
6075.0 - DUES & MEMBERSHIPS	5,412.63	6,100.00	88.73%	

	Sept 1, 2021 - Apr 30, 2022	Budget	% of Budget	Notes
6080.0 · COMMUNICATIONS AND OUTREACH	7,870.00	19,011.00	41.4%	
6081.0 · REGULATORY COMPLIANCE	2,347.22	21,000.00	11.18%	
6084.92 · GENERAL MANAGEMENT	3,889.01	34,523.00	11.27%	
6089.0 · AQUIFER SCIENCE	10,760.94	34,800.00	30.92%	
6090.0 · Conservation Credits	0.00	20,184.00	0.0%	Actual credits \$44,741 (with \$16,778 being donated back)
6100.0 · INSURANCE - DISTRICT	4,080.28	7,047.00	57.9%	Property, Liability, Auto, E&O
6150.0 · INSURANCE - GROUP	77,790.55	173,900.00	44.73%	Employee Health, Dental, Life, Vision, STD and LTD
6160.0 · LEGAL SERVICES	43,059.59	85,000.00	50.66%	General Matters, Personnel, and Redistricting
6170.0 · PROFESSIONAL SERVICES	40,785.57	106,150.00	38.42%	Includes audit, elections, retirement fees + 6 others
6179.0 · LEGISLATION	7,000.00	12,000.00	58.33%	Currently not in session
6180.0 · PROFESSIONAL DEVELOPMENT	4,344.28	19,000.00	22.87%	
6199.0 · SALARIES AND WAGES	514,700.83	951,668.00	54.08%	
6203.0 · TAXES & BENEFITS	81,648.83	133,527.00	61.15%	
6690.0 · Reconciliation Discrepancies	0.00	0.00	0.0%	
6800.0 · PROJECTS	24,403.40	83,000.00	29.4%	Jacob's Well Project
TOTAL EXPENSE	901,240.84	1,852,400.00	48.65%	
NET ORDINARY INCOME	271,677.39	-311,518.00	-87.21%	Negative effect (shortfall) to budget before accounting for the transfers to balance the budget, shown below.
OTHER INCOME				
9000.00 · Transfer from Reserves	0.00	311,868.00		\$175,000 from Cash Flow Reserve; \$3361 scholarship donations;
TOTAL OTHER INCOME	0.00	311,868.00		\$83,000 Jacobs Well project; \$50,507 from General.
NET INCOME	271,677.39	350.00		This is the difference between the negative amount in Net Ordinary Income before the transfers in from other accounts, needed to balance the budget.

CAPITALIZATION INDICATES ACCOUNTS THAT HAVE SUB-CATEGORIES. This is a collapsed view.

2. Profit and Loss - Previous Year Comparison

September 1, 2021 - April 30, 2022

BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT PROFIT AND LOSS - PREVIOUS YEAR COMPARISON

September 1, 2021 - April 30, 2022

	Sept 2021 - Apr 2022	Sept 2020 - Apr 2021	\$ Change	% Change
INCOME				
4400.0 · Interest Income	545.62	810.86	-265.24	-32.71%
4625.0 · MISCELLANEOUS INCOME (includes \$16,778 credits donation)	23,488.92	8,141.53	15,347.39	188.51%
4800.0 · USAGE AND PRODUCTION FEES *	1,137,546.89	1,304,822.57	-167,275.68	-12.82%
4810.0 · OTHER FEES (well development, applications, pluggings)	11,336.80	12,328.43	-991.63	-8.04%
TOTAL INCOME	1,172,918.23	1,326,103.39	-153,185.16	-11.55%
EXPENSE				
6000.0 · UTILITIES	13,012.09	12,867.81	144.28	1.12%
6005.0 · Print/Copy/Photo Services	695.75	836.60	-140.85	-16.84%
6007.0 · Postage/Freight/Shipping	626.57	1,064.32	-437.75	-41.13%
6010.0 · Office Supplies	3,945.54	2,275.68	1,669.86	73.38%
6011.0 · Comp Hardware-Plotter Supplies (replaced two 7-yr old desktops)	4,071.24	1,256.87	2,814.37	223.92%
6014.0 · Software Acquisition and Upgrades	592.00	2,822.61	-2,230.61	-79.03%
6015.0 · IT Monthly Maintenance (contract services increased)	11,527.50	8,000.00	3,527.50	44.09%
6016.0 · Meeting Expense (from zoom to in-person)	946.86	532.55	414.31	77.8%
6019.0 · Subscriptions/Publications	2,671.45	699.88	1,971.57	281.7%
6020.0 · Advertising (Redistricting Public Notices)	2,218.84	435.50	1,783.34	409.49%
6021.0 · MISCELLANEOUS EXPENSES (2021 refunded EP SOAH deposit - \$53,404)	495.74	55,072.01	-54,576.27	-99.1%
6022.0 · Accounting System Operation (includes Journyx timekeeping software)	2,525.55	2,835.55	-310.00	-10.93%
6023.0 · MAINTENANCE (Office and Auto)	8,332.96	7,661.74	671.22	8.76%
6025.4 · Facilities Repairs (includes septic repair expense)	2,859.80	2,611.00	248.80	9.53%
6040.0 · LEASES (Copier and Postage Machine)	6,575.82	6,288.75	287.07	4.57%
6065.0 · DIRECTOR EXPENSES (2120 was a refund)	0.00	-411.23	411.23	100.0%
6066.0 · Directors Compensation	12,050.00	13,450.00	-1,400.00	-10.41%
6075.0 · DUES AND MEMBERSHIPS	5,412.63	4,843.12	569.51	11.76%
6080.0 · COMMUNICATIONS AND OUTREACH	7,870.00	3,393.79	4,476.21	131.89%
6081.0 · REGULATORY COMPLIANCE	2,347.22	4,581.74	-2,234.52	-48.77%
6084.92 · GENERAL MANAGEMENT	3,889.01	6,886.85	-2,997.84	-43.53%

	Sept 2021 - Apr 2022	Sept 2020 - Apr 2021	\$ Change	% Change
6089.0 - AQUIFER SCIENCE	10,760.94	10,691.06	69.88	0.65%
6100.0 - INSURANCE - DISTRICT (Property, Liability, Auto, E&O)	4,080.28	3,989.04	91.24	2.29%
6150.0 - INSURANCE - GROUP (Employee Health, Dental, Life, Vision)	77,790.55	85,931.48	-8,140.93	-9.47%
6160.0 - LEGAL SERVICES	43,059.59	71,421.45	-28,361.86	-39.71%
6168.11 - SOAH - EP	0.00	1,171.88	-1,171.88	-100.0%
6170.0 - PROFESSIONAL SERVICES (2021 unexpected election expense - \$92,597)	40,785.57	127,100.81	-86,315.24	-67.91%
6179.0 - LEGISLATION (not in session)	7,000.00	22,000.00	-15,000.00	-68.18%
6180.0 - PROFESSIONAL DEVELOPMENT (Conference attendance now available)	4,344.28	618.78	3,725.50	602.07%
6199.0 - SALARIES AND WAGES	514,700.83	534,420.36	-19,719.53	-3.69%
6203.0 - TAXES & BENEFITS	81,648.83	76,805.17	4,843.66	6.31%
6690.0 - Reconciliation Discrepancies	0.00	0.00	0.00	0.0%
6800.0 - PROJECTS (Jacob's Well Project)	24,403.40	0.00	24,403.40	100.0%
TOTAL EXPENSE	901,240.84	1,072,155.17	-170,914.33	-15.94%
NET INCOME	271,677.39	253,948.22	17,729.17	6.98%

CAPITALIZATION INDICATES ACCOUNTS THAT HAVE SUB-CATEGORIES.

Those sub-categories have been collapsed.

Explanation notes are related to 2022 numbers. 2021 notes are specified.

- * Difference attributed to the decreased CoA fees in 2022 (approx \$150,000 at the time of this report) and the higher conservation credits in 2022 (\$44,741).

3. Balance Sheet - Previous Year Comparison

As of April 2022
(compared to April 2021)

BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT
BALANCE SHEET - PREVIOUS YEAR COMPARISON

As of April 30, 2022

	April 30, 2022	April 30, 2021	\$ Change	% Change
ASSETS				
Current Assets				
Checking/Savings				
1000.0 - Cash in Bank-Checking Truist	89,149.56	71,819.57	17,329.99	24.13%
1010.0 - Cash in Bank - Payroll Truist	31,071.91	33,812.77	-2,740.86	-8.11%
1030.0 - TexPool Funds - General				
1030.1 - Aquifer Protection Reserve	52,050.00	52,050.00	0.00	0.0%
1030.21 - Cash Flow Reserve (approved usage for operational budget)	175,000.00	350,000.00	-175,000.00	-50.0%
1030.3 - Hays Co/HTGCD Jacobs Well (funds are now in operational budget)	0.00	83,000.00	-83,000.00	-100.0%
1030.0 - TexPool Funds - General	787,164.74	402,760.31	384,404.43	95.44%
Total 1030.0 - TexPool Funds - General	1,014,214.74	887,810.31	126,404.43	14.24%
1040.0 - TexPool Funds - Contingency	504,935.65	504,743.15	192.50	0.04%
1045.0 - TexPool Funds - Reserve (to cover Vacation and Comp Benefits Payable)	61,080.15	61,056.87	23.28	0.04%
Total Checking/Savings	1,700,452.01	1,559,242.67	141,209.34	9.06%
Accounts Receivable				
1200.0 - Accounts Receivable				
1200.1 - AVR DMF (drought management fees)	0.00	-1,750.00	1,750.00	100.0%
1200.0 - Accounts Receivable (invoices billed but payment not yet received)	19,599.20	19,750.40	-151.20	-0.77%
Total 1200.0 - Accounts Receivable	19,599.20	18,000.40	1,598.80	8.88%
Total Accounts Receivable	19,599.20	18,000.40	1,598.80	8.88%
Other Current Assets				
1100.0 - Petty Cash	300.00	300.00	0.00	0.0%
1300.0 - Pre-paid Expenses	7,067.61	5,492.72	1,574.89	28.67%
1499.0 - Undeposited Funds-A/R payments (received, posted but not yet deposited)	9,577.42	10,954.85	-1,377.43	-12.57%
Total Other Current Assets	16,945.03	16,747.57	197.46	1.18%
Total Current Assets	1,736,996.24	1,593,990.64	143,005.60	8.97%

	<u>April 30, 2022</u>	<u>April 30, 2021</u>	<u>\$ Change</u>	<u>% Change</u>
Fixed Assets				
1400.0 · Field Equipment	376,487.89	376,487.89	0.00	0.0%
1410.0 · Office Equipment and Furniture	19,722.90	19,722.90	0.00	0.0%
1410.1 · Computer Hardware and Software	19,329.69	19,329.69	0.00	0.0%
1420.0 · Vehicles	52,363.03	52,363.03	0.00	0.0%
1430.0 · Accumulated Depreciation	-608,852.24	-608,852.24	0.00	0.0%
1440.0 · Land (Antioch Cave)	165,415.00	165,415.00	0.00	0.0%
1445.0 · Office Building	268,588.04	268,588.04	0.00	0.0%
Total Fixed Assets	<u>293,054.31</u>	<u>293,054.31</u>	<u>0.00</u>	<u>0.0%</u>
Other Assets				
1500.0 · Organizational Costs	300,783.26	300,783.26	0.00	0.0%
1510.0 · Accumulated Amortization	-326,324.26	-326,324.26	0.00	0.0%
1600.0 · Deposits Paid (Utilities)	71.00	71.00	0.00	0.0%
Total Other Assets	<u>-25,470.00</u>	<u>-25,470.00</u>	<u>0.00</u>	<u>0.0%</u>
TOTAL ASSETS	<u>2,004,580.55</u>	<u>1,861,574.95</u>	<u>143,005.60</u>	<u>7.68%</u>
LIABILITIES & EQUITY				
Liabilities				
Current Liabilities				
Other Current Liabilities				
2010.0 · Rebates Payable - Conservation Credits	44,741.10	20,183.63	24,557.47	121.67%
2100.0 · Deferred Revenue	75,741.00	75,741.00	0.00	0.0%
2110.0 · Direct Deposit Liabilities	1,035.01	1,035.00	0.01	0.0%
2220.0 · Federal Income Tax Withheld	-1,035.01	-1,035.01	0.00	0.0%
2230.0 · Employer Fica and Med Payable	-139.25	-139.25	0.00	0.0%
2250.0 · TWC Unemployment Tax Payable	2,520.00	1,349.21	1,170.79	86.78%
2270.0 · Payroll Liabilities	0.09	0.09	0.00	0.0%
2300.0 · Accrued Vacation Payable (Actual Vacation and Comp Benefits Payable)	64,416.00	54,118.16	10,297.84	19.03%
Total Other Current Liabilities	<u>187,278.94</u>	<u>151,252.83</u>	<u>36,026.11</u>	<u>23.82%</u>
Total Current Liabilities	<u>187,278.94</u>	<u>151,252.83</u>	<u>36,026.11</u>	<u>23.82%</u>
Total Liabilities	<u>187,278.94</u>	<u>151,252.83</u>	<u>36,026.11</u>	<u>23.82%</u>

	<u>April 30, 2022</u>	<u>April 30, 2021</u>	<u>\$ Change</u>	<u>% Change</u>
Equity				
3000.0 Fund Balance	1,180,196.96	1,090,946.64	89,250.32	8.18%
3000.3 Invested in Capital Assets	365,127.26	365,127.26	0.00	0.0%
3110.0 Reserve for Petty Cash	300.00	300.00	0.00	0.0%
Net Income	271,677.39	253,948.22	17,729.17	6.98%
Total Equity	<u>1,817,301.61</u>	<u>1,710,322.12</u>	<u>106,979.49</u>	<u>6.26%</u>
TOTAL LIABILITIES & EQUITY	<u>2,004,580.55</u>	<u>1,861,574.95</u>	<u>143,005.60</u>	<u>7.68%</u>

4. Check Register

TRUIST BANK
April 1 – April 30, 2022

BARTON SPRINGS EDWARDS AQUIFER CONSERVATION DISTRICT

MONTHLY CHECK REGISTER

April 1 - April 30, 2022

Type	Date	Num	Name	Memo	Amount	Balance
Liability Check	04/01/2022	EFT3292022	United States Treasury	74-2488641 Director Compensation Liability CW	-99.46	76,782.20
Check	04/04/2022	26270	Community Consulting LLC	SYP Advisory Work Group - replacement of check #25089	-625.00	76,682.74
Check	04/04/2022	26271	Jan-Pro of Austin	Janitorial Service 4/1/2022 - 4/30/2022	-270.00	76,057.74
Check	04/04/2022	26272	The Kiplinger Tax Letter	Monthly Newsletter DCW	-99.00	75,787.74
Check	04/04/2022	26273	Texas State University	Aquatic Science Summer Camp Scholarship Program	-6,360.00	75,688.74
Check	04/05/2022	26274	Home Depot	Sawhorse, Gloves, Loppers	-166.89	69,328.74
Check	04/05/2022	26275	Charter Communications	Internet Service 3/30/22 - 4/29/22	-231.19	69,161.85
Check	04/05/2022	26276	In-Situ Inc.	Level Troll 400 - Aquifer Science Equipment	-1,025.69	68,930.66
Liability Check	04/07/2022	EFT04072022	Reliance Trust Company	Employee Bi-weekly Retirement	-4,780.89	67,904.97
Deposit	04/07/2022			Deposit (permittee production fees and \$5639 from TML for Tacoma repairs)	15,556.18	63,124.08
Liability Check	04/08/2022	4082022	United States Treasury	74-2488641 Employee Bi-weekly Payroll Liabilities	-8,467.83	70,212.43
Check	04/08/2022	26277	Hays Free Press	Annual Digital and Paper Subscription 4/15/2022 - 4/15/2023	-42.00	70,170.43
Check	04/08/2022	26278	IntegrTALK c/o Teico Experts	Office Phone Service 4/1/2022 - 4/30/2022	-443.94	69,726.49
Check	04/08/2022	26279	The Standard	Quarterly Retirement Fees 1/1/2022 - 3/31/2022	-8,327.22	61,399.27
Check	04/08/2022	26280	Integritek	Monthly IT, and MS 365 Subscriptions	-1,492.50	59,906.77
Transfer	04/11/2022			Funds Transfer - Payroll	-20,000.00	39,906.77
Transfer	04/11/2022			Funds Transfer - replenish low checking balance	40,000.00	79,906.77
Check	04/12/2022	26281	CTRMA Processing	VOID, Toll Fees	0.00	79,906.77
Check	04/12/2022	26282	CIT Technology Fin Serv. Inc	April Copier Lease and Annual Property Tax	-1,056.12	78,850.65
Check	04/12/2022	26283	In-Situ Inc.	Rugged Troll - Equipment Aquifer Science	-1,482.93	77,367.72
Check	04/12/2022	26284	Texas Water Conservation Assn	District Level C Annual Membership Renewal	-831.00	76,536.72
Check	04/13/2022	26285	CTRMA Processing	Toll fees	-10.09	76,526.63
Check	04/13/2022	26286	The Kiplinger Tax Letter	Annual Membership Renewal DCW	-99.00	76,427.63
Check	04/13/2022	26287	Sam's Club	Annual Membership Dues	-45.00	76,382.63
Check	04/13/2022	26288	Ready Refresh	3/9/22 - 4/12/22 Water delivery	-107.93	76,274.70
Liability Check	04/15/2022	26289	AFLAC	April Employee-paid Premium	-107.30	76,167.40
Liability Check	04/15/2022	26290	United Healthcare	May Health Insurance Premium	-11,524.80	64,642.60
Liability Check	04/15/2022	26291	Sun Life Assurance	April Life/Dental/Vision/Disability Premium	-1,412.87	63,229.73

Check	04/15/2022	26292	Quill Corporation	Monitor Stands/Binder Clips	-55.34	63,174.39
Check	04/15/2022	26293	Fidelity Security Life Insurance Co	May Gap Insurance Premium	-1,056.00	62,118.39
Check	04/15/2022	26294	Staples	Hanging File Folders	-73.96	62,044.43
Check	04/15/2022	26295	Staples	Copy Paper	-384.95	61,659.48
Transfer	04/18/2022			Funds Transfer	30,000.00	91,659.48
Check	04/19/2022	26296	City of Austin	April Water Bill	-21.47	91,638.01
Check	04/19/2022	26297	Westbay Instruments	Components Kit Jacobs Well Project	-3,631.52	88,006.49
Check	04/19/2022	26298	Orsak Landscape Services	April Lawn Service	-67.00	87,939.49
Check	04/19/2022	26299	National Ground Water Assn	2022 Membership Renewal	-775.00	87,164.49
Liability Check	04/21/2022	EFT42122	Reliance Trust Company	Employee Bi-weekly Retirement	-4,780.89	82,383.60
Liability Check	04/22/2022	EFT4222022	United States Treasury	74-2488641 Employee Bi-weekly Taxes	-8,467.79	73,915.81
Liability Check	04/22/2022	4222022	United States Treasury	74-2488641 Directors Compensation Liabilities	-237.14	73,678.67
Check	04/22/2022	26300	SiedgelLaw Group	Legislative Consulting March 2022	-1,000.00	72,678.67
Check	04/26/2022	26301	Bickerstaff	Legal Services - General, Personnel, Redistricting	-2,402.55	70,276.12
Check	04/28/2022	26303	Braun and Gresham	KM Permian Pipeline Remainder Due from S5000 Commitment	-688.04	69,588.08
Check	04/28/2022	26304	Pedernales Electric Cooperative	April Electric Bill 3/23/22 - 4/20/22	-357.84	69,230.24
Check	04/28/2022	26305	Exxon Mobil Business Card	Gasoline 3/24/2022 - 4/22/2022	-80.68	69,149.56
Transfer	04/28/2022			Funds Transfer - Payroll	-20,000.00	49,149.56
Transfer	04/28/2022			Funds Transfer - replenish low checking balance	40,000.00	89,149.56
					12,367.36	89,149.56
					<u>12,367.36</u>	<u>89,149.56</u>

Purchase Order



Barton Springs / Edwards Aquifer Conservation District
 1124 Regal Row
 Austin, TX 78748
 Phone: (512)282-8441
 Fax : (512)282-7016

The following number must appear on all related correspondence, shipping papers, and invoices.

P.O. Number: 2022- 152

Date: May 12, 2022

To:
 Geoprojects International Inc.
 9414 Wier Loop Rd.
 Austin, TX 78736

Ship To:

PROJECT	REQUISITIONER	SHIP VIA	ACCOUNT #	TERMS
Jacobs well project	Brian Smith			

QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
1		Multiport Monitor well at Coleman's Canyon Reserve	\$23,358.00	\$23,358.00
1		Dual-completion monitor well with coring at Jacobs's Well Natural Area	\$18,343.00	\$18,343.00
This P.O. takes the place of the previous P.O. for \$33,225.00 dated 2/15/22 due to the final price coming in 10% over the original estimate.				

Subtotal	\$41,701.00
Sales Tax	TAX EXEMPT
Shipping & Handling	
Other	
TOTAL	\$41,701.00

- Please send two copies of your invoice.
- Enter this order in accordance with the prices, terms, delivery method, and specifications listed above.
- Please notify us immediately if you are unable to ship as specified.
- Send all correspondence to:
 Barton Springs/Edwards Aquifer Conservation District
 Attn: Dana Wilson
 1124 Regal Row
 Austin, TX 78748
 (512)282-8441; Fax (512)282-7016
 E-Mail: bseacd@bseacd.org

Brian A. Smith 5/12/22
Timothy G. Lytle 5-12-22

(Original to Accounting/Copy to Vendor)

Authorized by

Date

Geoprojects International, Inc.
 9414 Wier Loop Rd.
 Austin, TX 78736

Invoice

Phone: 512-288-3777

Date: 5/11/2022

2019129

WELL OWNER IS TAX EXEMPT

Barton Springs Edwards Aquifer
 Conservation District
 Brian Smith
 1124 Regal Road
 Austin, Texas 78748

Payment Terms
 Upon Receipt

Contract Number
 JW Piezometer

WELL OWNER IS TAX EXEMPT

Description	Quantity	Unit Price	Total Price
Project prep and move-in	1	3,000.00	3,000.00
Drill and core (HXBWL)	280	30.00	8,400.00
Standby for geophysical logging	5	300.00	1,500.00
Waxed core boxes	19	60.00	1,140.00
Ream pilot corehole	238	15.00	3,570.00
Furnish and install 4-1/2" SDR17 PVC Casing	238	11.00	2,618.00
Install 1-inch piezometer in casing borehole annulus to 194 feet with 20' of field-slotted PVC screen, with filter-packed annulus.	1	850.00	850.00
Cement casing/borehole annulus from base of casing to piezometer base, then above piezometer setting to surface. Unit rate is per sack of cement or bentonite chips.	32	40.00	1,280.00
Construct surface completion with locking cap	1	1,000.00	1,000.00

TOTAL

\$23,358.00

Regulated by
 Texas Department of Licensing and Regulation
 P.O. Box 12157
 Austin, Texas 78711
 Telephone: (800) 803-9202 or (512) 463-7880

Geoprojects International, Inc.
 9414 Wier Loop Rd.
 Austin, TX 78736

Invoice

Phone # 512-288-3777

Date 5/11/2022

Invoice # 2021140

Well To

Barton Springs Edwards Aquifer
 Conservation District
 Brian Smith
 1124 Regal Road
 Austin, Texas 78748

Payment Terms
 Upon Receipt

WELL OWNER IS TAX EXEMPT

Contract Number
 JW Multiport

Description	Quantity	Rate	Amount
Local move of rig and setup	1	1,000.00	1,000.00
Drill 8.75" Hole from surface to 11 feet. Set and cement 6" steel casing	1	1,000.00	1,000.00
Drill nominal 5" borehole	529	17.00	8,993.00
Standby for Geophysical Logging	4	300.00	1,200.00
Crew labor to assist in installation of Westbay Multiport well	16.5	300.00	4,950.00
Construct surface slab with locking cap	1	1,200.00	1,200.00
Total			\$18,343.00

Date Received: B5/EACD 5/11/2020
 Acct# _____ Amt _____
 Date Paid: _____ CK.# _____
 Verified by: _____ Approved by: _____

Regulated by:
 Texas Department of Licensing and Regulation
 P.O. Box 12157
 Austin, Texas 78711
 Telephone: (800) 803-9202 or (512) 463-7880

Item 4

General Manager's Report Discussion and possible action topics

Topics

- a. Review of Status Report and update on team activities/projects.**
- b. Aquifer status update.**
- c. Upcoming events of possible interest.**

Summary of June Team Activities and On Deck for July/August

Aquifer Science Team

June Activities:

- Evaluating data for aquifer status. As of June 3, Lovelady has passed the drought trigger level and flow at Barton Springs was within a few days of crossing the drought threshold.
- Collecting samples from the Jacob's Well multiport well.
- Running the in-house model with different pumping scenarios.
- The multiport well at Jacob's Well was completed into the Lower Trinity on March 11.
- The second monitor well at Jacob's Well was completed on April 20.

On Deck:

- Continuing to follow aquifer conditions as we enter the first stage of drought.
- Continue running the in-house model with various drought scenarios.
- Hydraulic conductivity testing of monitor wells at Jacob's Well.

Administration Team

June Activities:

- July monthly billings and 4th Quarter (Jun/Jul/Aug) billings
- Records Management, Retention and Disposal
- U.S Census Bureau survey and OEWS reporting.

On Deck: (July/August)

- End-of-year Closing Books, Files, Audit Preparation, etc.
- Proposed Budget Initial Version and Fee Schedule to be brought before Board for approval in July.

Regulatory Compliance Team

June Activities:

- Review of Enforcement Plan, Drought Enforcement, Change of Ownership and Notice requirements.
- Staff continue to work on new well applications.
- Database meetings with Intera to discuss mock-ups and remaining work
- Working with the GM to establish an ILA with the Institute for Government Innovation (IGI) at Texas State University and define a scope of work for a fee equalization map

On Deck:

- District Staff are starting to prepare for the Management Plan renewal that is due before November.
- Staff is preparing to enter Stage 2 drought.
- Legislation discussions with Sledge and participation in TWCA and TAGD legislative committees
- Sustainable yield data compilation, research, and ongoing internal discussions
- City of Buda ASR pilot project – waiting on tech memo and decision on cycle testing
- Scheduling meeting with the City of Hays to learn more about proposed developments (SH 45/1626)

Communications and Outreach Team

June Activities:

- Put Out Stage II Alarm Drought Materials after board declares drought.
- Shoot and edit drought related video.
- Put out Press Release/Video on Kent S. Butler Scholarship Winners.
- Start working on July newsletter.
- Order District swag (rain gauges, stress balls, etc. with District logo on them, for future giveaways)
- Attend Wildflower Center Nature Nights event – Mud, Water, and Caves – Volunteer at City of Austin Watershed Protection Department Event

On Deck

- Work on new Science in 60 Seconds Video
- Release July Newsletter in mid to late July
- Latest Drought Update Video

**STATUS REPORT UPDATE
FOR THE JUNE 9, 2022 BOARD MEETING**

Summary of Significant Activities – Prepared by Staff Leads

Upcoming Dates of Interest

- Texas Water Conservation Association (TWCA) Summer Conference – June 15-17 (Round Rock)
- Catalyst Water Mastermind Summit – July 27-29 (San Antonio)
- Texas Groundwater Summit – August 30-September 1 (San Antonio)
- Texas Desal Annual Conference – September 14-17 (Austin)
- TWCA Fall Conference – October 5-7 (San Antonio)
- Water for Texas – January 23-25 (Austin) - 2023

DROUGHT MANAGEMENT

Drought Status and Water-Level Monitoring (Justin)

We have been in a status of No Drought since it was officially declared at the July 8, 2021 Board meeting.

La Nina conditions (declared by NOAA on 10/14/21) have strengthened in February 2022 and are favored to continue into summer 2022. This means that we are predicted to receive below average rainfall and above average heat through May-June, which are historically the wettest months of the year in central Texas. In fact, May 2022 clocked in as the warmest May on record for Austin.

The Texas Hill Country has received an average of 9.7 inches - 4 inches behind annual average rainfall - from January through early June. Only the month of February recorded above average rainfall. Water levels in the Edwards showed a short-lived rise after some late January rains (2.5 inches) provided some recharge. On March 11th water levels at Lovelady began to decline. Trinity water levels also displayed a delayed rise in response to late 2021 rain. However, Trinity water levels have turned downwards in early April.

On June 2, 2022, the Lovelady well had a level of 477.3 ft msl, 1.1 ft below the trigger level for Stage II drought. Lovelady crossed under its trigger on 5/26/22.

On June 2, Barton Springs was flowing at 39 cfs (10-day average), 1 cfs above the drought trigger point of 38 cfs. Barton Springs will likely cross under its trigger on 6/3/22.

Drought Communication (David, Michael)

Staff will update District resources and the website once the board declares Stage 2 drought stage. The board is expected to declare Stage 2 drought at the June 9, 2022 Board Meeting. Written permittee notifications and public notice of Stage 2 drought conditions will be mailed and emailed out once the declaration is made. Educational resources have been prepared and are available upon request for permittees. Digital educational downloads are available on the website with the Drought Media Tool-Kit located on the Drought Education Page and includes links to other helpful resources. <https://bseacd.org/drought-edu/>.

DISTRICT PROJECTS

GMA Joint Planning

➤ ***GMA 10 Coordination (Michael)***

The last GMA 10 meeting was held on May 25, 2022, where the representatives discussed the draft RFQ for consultants, projects or issues for the next planning cycle and the appointment of a new chairman. The next meeting date will be August 24, 2022 at EAA at 11:30 am.

➤ ***Explanatory Report Development (Michael, Jeff)***

TWDB asked for clarification regarding the planning horizon and the non-relevant trinity in Bexar County. All clarification documents are to be submitted to TWDB by June 15, 2022.

Trinity Aquifer Sustainable Yield Study & Planning

➤ ***Advisory Workgroup Planning (Kendall)***

GM and staff are continuing to research and discuss sustainability goals, metrics and thresholds. Staff has met with our facilitator multiple times to discuss the project timeline, communication, and certain components of an Advisory Work Group. However, we are waiting to meet with the facilitator again until we have a better understanding of how we plan to work through the unreasonable impact factors and what data and information is needed to assess the factors.

Technical Evaluations (Brian, Jeff)

Aquifer Science staff continue to collect data on the geology and hydrogeology related to the Trinity Aquifers. We are evaluating water-level data for a number of Trinity wells to look for long-term trends. We worked with Hays County and Wimberley Valley Watershed Association to install two Trinity monitor wells in the Jacob's Well area. Work on the first two phases of the District's own numerical modeling has been completed. These phases involved the development of a steady-state model that was then converted into a transient model. The transient model will allow for simulation of different pumping and drought scenarios over time. Several different pumping scenarios have been run and a draft report has been completed. Our next step with the model is to run different drought scenarios. We have hired a consulting firm, GSI, to assist us with the model. We are members of a technical committee to guide the development of a numerical groundwater model (BRAAT or BRATWURST) of the aquifers influenced by the Blanco River. A meeting of the technical committee was held on January 6, 2022. Southwest Research Institute started work on the BRAAT model in September of 2021, but contracting issues have stalled development of the model.

Habitat Conservation Plan (Brian, Erin)

➤ **Implementation Schedule:** Staff is reviewing previous planning documents and will develop a new implementation timeline and schedule to guide project tasks and activities for the 1- to 3-year timeframe.

➤ **Planning for Technical Tasks:** Aquifer Science staff are coordinating studies at Barton Springs with COA staff. These studies include measurement of dissolved oxygen in the Barton Springs pool and the installation of a monitor well within Zilker Park and south of the pool. The Watershed Protection Department has offered to install monitoring equipment in Barton Springs Pool to measure dissolved oxygen as the springs experience wet to drought conditions. We plan to apply for a grant from the City of Austin this fall to pay for the installation of a

monitor well in Zilker Park. Monitoring of dissolved oxygen in the pool will be conducted after the monitor well is completed.

Database Management System - Intera Inc (Tim/Kendall)

District and Intera staff met to agree on what work will be necessary to complete the database. The District is now waiting to hear from Intera on how much time will be needed and cost incurred to complete the project. District staff also expects Intera to offer a “buy-out” option that would presumably include a refund of sorts and an official end to our contractual arrangement. Should this offer be made and accepted, the District would then pursue a new contract with a different vendor.

ILA Commitments (Brian)

The District has ILA commitments with Hays County and HTGCD to install two monitor wells in the Jacob’s Well Area. Information from these wells will be used to better understand the flow system that delivers Middle Trinity groundwater to Jacob’s Well, and to develop our numerical groundwater models. Drilling and installation of the Westbay multiport well was completed on March 11. On April 7, 2022, drilling and coring began inside the Jacob’s Well Natural Area on the second monitor well. The second well, completed on April 20, is a standard monitor well into the Cow Creek, but with a piezometer installed in the Lower Glen Rose.

The ILA with COA is intended to coordinate studies for the respective HCPs such as scientific feasibility studies and monitoring evaluations; to collaborate on the planning of future Kent Butler Summits; and to exchange technical information regularly on an annual basis.

Status update – An annual technical meeting is held between BSEACD and COA in December each year to discuss each organization’s activities related to their respective HCPs. COA and BSEACD plan to have additional discussions in the fall of 2022 to coordinate the details of the DO studies and the monitor well installation.

Region K Planning Activities (Michael)

Region K meet on April 27, 2022. Tim Loftus sat in as the alternate for Michael Redman. Discussions were had dealing with 5 members term limits expired and each member was voted back in to continue their roles, review of draft water demand projections, and Water User Groups (WUGs). The next Region K meeting is scheduled for July 27th at the same location.

Strategic Planning Implementation (Tim):

This project is currently on hold as other projects are being prioritized.

Training, Presentations, and Conferences (All Teams):

- Aquifer Science: N/A
- Regulatory Compliance:
- Administration: N/A
- Communications and Outreach: N/A

- General Manager: N/A
- All Staff: Annual Cybersecurity Training

New Maps, Publications, or Reports:

A list of recent publications can be found at: <https://bseacd.org/scientific-reports/>

The latest eNewsletter published in November 2021 can be found at:

<https://bseacd.org/publications/newsletters/>

LITIGATION AND LEGISLATION

Litigation and SOAH Activities (Kendall)

- **Electro Purification Production Permit:**

Current Activity: Staff discussed the limbo-like status of EP of Bill Dugat on May 12 and we are preparing a letter to request that EP inform the District of its plans within 30 days of receiving a letter. Our provisional position is that EP either needs to plug their four production wells or register them as exempt/ag wells.

RULEMAKING, PERMITTING, AND ENFORCEMENT

Rulemaking (Michael, Kendall)

Discussions are being had, between staff and legal counsel, regarding the Enforcement plan, in particularly Drought Enforcement. Other areas that are being addressed are notice language and change of ownership timelines. Other minor fixes will be incorporated as well.

Enforcement and Compliance Matters (Michael, Erin)

<i>Compliance/Enforcement</i>			
<i>Permittee or Entity Name</i>	<i>Aquifer</i>	<i>Use Type</i>	<i>Notes</i>
N/A			

Permitting Activity (Michael, Erin)

<i>In Review</i>				
<i>Application Type</i>	<i>Aquifer</i>	<i>Applicant Name</i>	<i>Use Type</i>	<i>Volume Request</i>
LPP	Middle Trinity	Smith, Mark and Staci	Domestic	500,000
Plugging	Taylor/Austin Chalk	Burton Construction	Abandon	0 – Plugging
Exempt – Domestic	Middle Trinity	Tucker, Matthew	Domestic	7GPM – Exempt
Plugging	Edwards	City of Hays	PWS	0 - Plugging
Exempt – Domestic	TBD	Zimitz, Diedre	Domestic	7GPM - Exempt
Exempt – Domestic	Middle Trinity	Roberts, Stephen	Domestic	7GPM - Exempt
LPP	Middle Trinity	Anderson, Derrek	Domestic	500,000
IPP	Middle Trinity	Collins, Phil	Commercial	Waiting on Engineer
<i>Recently Approved</i>				
<i>Application Type</i>	<i>Aquifer</i>	<i>Applicant Name</i>	<i>Use Type</i>	<i>Volume Request</i>
LPP	Edwards/Upper Trinity	Whittington, Keith	Domestic	500,000
LPP	Middle Trinity	Anderson, Derrek	Domestic	500,000
Plugging	Taylor Group	TX-DOT	Abandon/Plug	0 - Plugging
LPP	Middle Trinity	Piper, Tamra	Domestic	500,000
LPP	Middle Trinity	Smith, Mark and Staci	Domestic	500,000
IPP – Class A	Edwards	17050 IH-3, LLC	Commercial	130,500

AQUIFER STUDIES (Brian)

Permitting Hydrogeologic Studies:

- Aquifer Science staff worked with the developers of the Gragg tract near the south end of Hwy. 45 as they installed the fourth well in their well field. These wells all tap into the Lower Trinity Aquifer. We will soon be discussing a potential application for a well in the saline Edwards.

Groundwater Studies: *Dye Tracing, Water Quality, Aquifer Characterizations*

- Colemans Canyon- As part of the Jacob's Well study, we are collecting data from domestic wells in the area. A dye-trace study will be conducted in 2022, or early 2023, with Hays County, EAA, and IITGCD.
- Drilling and installation of two monitor wells was completed in March and April. One of the wells is a Westbay multiport well completed into the Lower Trinity. The other well is a dual completion well with monitoring of the Cow Creek and the Lower Glen Rose. Sampling of the multiport well was completed in May. Hydraulic conductivity testing will be conducted in June.

Field Activities:

- Antioch- Continuing to maintain the system and to collect data on flow into the vault.
- Well Monitoring- Continuing to maintain equipment in numerous monitor wells and to download and interpret data.

Trinity Aquifer Modeling Development:

- BRATWURST Modeling- Southwest Research Institute started work on this model in September 2021, but activity is currently on hold as funding issues are resolved.
- In-house model- The model has been calibrated and we have run the model to evaluate different pumping scenarios. A draft report on the model was completed in May. We are working with GSI to run the model with various drought scenarios.

COMMUNICATIONS AND OUTREACH
(David Marino)
May 2022

Website: During the month of May, a number of items were added to the spotlights page, including Monitor Well Installation Video, Memorial Day Holiday, Next Board Meeting – June 9, 2022, Barton Springs and Lovelady Level Check – May 16, GMA 10 Meeting May 25, 2022, Barton Springs and Lovelady Level Check – May 9, 2022, May 12, 2022 Canceled, Water Conservation Period – May – September, *BSEACD Newsroom* page was also updated with latest press releases, upcoming meetings, videos, etc. <https://bseacd.org/publications/bseacd-newsroom/>

Website Analytics 2021		Top Page Searches			
Month	Total Page Views	Unique Page Views	March	April	May
Jan	3,815	3,346	Homepage 531 Views	Homepage 2,127 Views	Homepage 1,674 Views
Feb.	4,482	4,183	Education/Scholarships 101 Views	Education/Scholarships 367 Views	Publications/Maps 132 Views
March	2,508	2,237	Publication/Maps 95 Views	Uploads 116 Views	Aquifer Science/Drought Status 85 views
April	4,306	3,247	About Us/Staff 89 Views	Publication/Maps 103 Views	Aquifer Science/About the Aquifers 69 Views
May	3,920	3,159	Regulatory/Permits 71 Views	About Us/Staff 69 Views	About Us/Staff 61 Views

Kent S. Butler Scholarship Memorial Groundwater Stewardship Scholarship Essay Contest: Essay submissions are in. The winners will officially be announced at the June 9 Board Meeting. We received a total of 4 submissions. It was down from last year (we had 6). The scholarship was promoted frequently on social media, the website, and was shared with the eligible school Districts multiple times. It was also shared during Hays County’s Scholarship Fair. A big thanks to the City of Austin conservation credit contribution. These folks served as our judges: Blake Neffendorf, Water Resource Coordinator, Sydney Beckner, Hill Country Alliance Water Program Manager, Justin Camp, BSEACD Hydrogeologist Technician, Lily Lucas, BSEACD Board Member, Natalie Ballew, TWDB (Groundwater Technical Assistance), and Katie Sternberg, City of Austin Conservation Programs Coordinator.

2,500 – 1 Winner
1,500 – 1 Winner
1,000 – 1 Winner
Total - \$5,000

Aseel Rawashdeh - \$2,500 Scholarship

Essay - “A Discussion on the Global Groundwater Crisis: Potential Approaches to Groundwater Sustainability”

<https://bseacd.org/uploads/Aseel-Rawashdeh-Website-Version.pdf>

Anderson High School

Graduates June 2022

Samantha Cook - \$1,500 Scholarship

Essay – “Packin’ Parched”

<https://bseacd.org/uploads/Samantha-Cooke-Website-Version.pdf>

Ann Richards School For Young Women Leaders

Graduates May 2022

Weston Kirk - \$1,000 Scholarship

Essay – “Examining the Impact of Land Development and Urban Sprawl on the Edwards Aquifer, and Exploring Prospective Solutions

<https://bseacd.org/uploads/Weston-Kirk-Website-Version-1.pdf>

Dripping Springs High School

Graduates May 2022

The winners will be presented with a certificate at the June 9, 2022 Board Meeting. A press release will go out after the meeting.

Drought Preparations: Communications and Outreach has started prepping Stage II Drought information in anticipation of upcoming drought declaration. The board is expected to declare drought at June 9 meeting if dry conditions persist. New yards signs were also ordered, along with metal stakes for permittees who wish to put up a drought sign up. We are also printing more inserts and came up with preliminary press release. A new flag for Stage II has also been ordered. It will hang outside District offices once Stage II drought is declared.

District Swag (Materials to give away at events): Communications and Outreach is in the process of identifying materials to order for events. We are currently looking at rain gauges, stress balls, collapsible dog bowls, metal straws, etc. Any materials ordered will have the District’s logo on them.

Well Installations: The Aquifer Science Team installed two monitor wells in Wimberley. One was installed in March and the second one was installed in April. A video on the second monitor well installation was produced and released in May.

Strategic Planning: Communications & Outreach, Regulatory & Policy Project Manager Kendall Bell-Enders, and General Manager Tim Loftus are working on putting together a strategic planning

document based on last year's strategic planning workshops. We have met several times and are in the process of streamlining the information. Currently, the proposed revisions to the strategic plan are being reviewed by the general manager.

TAGD Media Relations Cheat Sheet: Communications and Outreach Manager is on TAGD's Information & Education Committee. We are assisting TAGD in creating a communications toolkit for groundwater districts. This document will serve as a guide for employees in Texas groundwater districts and how to handle communications for a variety of platforms and it also addresses how to communicate during specific situations. Communications and Outreach Manager finished the Media Relations Cheat Sheet as part of the plan. It is now under review.

Meetings/Events:

City of Sunset Valley Public Works Open House: Communications and Outreach was invited and took part in the City of Sunset Valley Public Works Open House. We set up a table with educational information and answered resident questions. We also signed up about a dozen people for the District newsletter. We spoke with City of Sunset Valley officials about teaming up for a creek cleanup in the future.

EAA Research Center/Education and Outreach Center Visit: Staff went on a retreat to the EAA Research Center and Education and Outreach Center. Communications and Outreach took pictures and shared on social media.

TWDB Monitor Well Visit: The Texas Water Development Board came out on May 12 to shoot a video on the second monitor well installation. The District will share that video when it is complete. Communications and Outreach took photos and shared on social media.

UT Jackson School of Geosciences Hydrogeological Field Trip: Students with the UT Jackson School of Geosciences visited Jacob's Well and the District's new multipoint monitor well in Wimberley. Communications and Outreach took photos and shared on social media.

Media Coverage:

Quarry Air Permit Approved, Tespa Files Suit – May 19, 2022 – Wimberley View
<https://www.wimberleyview.com/news/quarry-air-permit-approved-tespa-files-suit>

TESPA takes action to halt rock crushing plant – May 18, 2022 – Hays Free Press
<https://haysfreepress.com/2022/05/18/tespa-takes-action-to-halt-rock-crushing-plant/>

Videos:

Multipoint Monitoring Well – Water Sample Collection
<https://www.youtube.com/watch?v=hhoZBmt2bas>

Monitor Well Installation Part 2
<https://www.youtube.com/watch?v=54xpKKo0ipg>

Happy Teacher's Day – May 3, 2022
<https://www.youtube.com/watch?v=Kvp-wOY6pOE>

Social Media (Twitter, Facebook, Instagram): UT Jackson School of Geosciences Hydrogeological Field Trip, Memorial Day Post, Memorial Day Office Closure, Water Wise Wednesday – Lawn and Garden Practices, Rain Gauge, Water Weekly Report – May 24, 2022, Rain Forecast, City of Sunset Valley Public Works Open House, EAA Research Park and Education Outreach Center Visit, Groundwater Monitor Well Video, Barton Springs and Lovelady Level Check – May 16, 2022, Multiport Monitor Well Water Sampling Video, National Weather Service Explainer on Dry Weather, Well Installation Pics with Texas Water Development Board, Well Installation and Texas Water Development Board Visit, Water Wise Wednesday – Greywater Resources, Water Weekly Report – May 10, 2022, Fawn Photos, Barton Springs and Lovelady Level Check – May 9, 2022, May 12, 2022 Board Meeting Canceled, Fun Fact Friday – District’s Main Aquifers, Throwback Thursday – Jacob’s Well, Rain Forecast – May 4, 2022, May the Fourth Be With You, Happy Teacher’s Week, Water Weekly Report – May 3, 2022, Drinking Water Week, Water Conservation Period – May - September, Drought Update – May 2, 2022

BSEACD Monthly Social Media Roundup/Groundwater News

Social Media Roundup (May 2022):

<https://bseacd.org/uploads/BSEACD-Social-Media-Roundup-May-2022.pdf>

Monthly Groundwater News/Dates of Interest (May 2022):

<https://bseacd.org/uploads/BSEACD-Monthly-Groundwater-News-Dates-of-Interest-May-2022.pdf>

The top performing post on Facebook for the month of May was “Students from the [UT Jackson School of Geosciences](#) visited Jacob's Well and the District's new multiport monitor well as part of a hydrogeological field trip” on May 31, 2022. It reached 951 people. The top tweet on Twitter for the month of May “Our friends at @twdb (Texas Water Development Board) are shooting a video on our recently installed multiport monitor well in Hays County near Jacob's Well” . It reached 494 people and had 16 engagements. The top performing video on YouTube for May was “Monitor Well Installation Part 2” with 21 views.

GENERAL ADMINISTRATION
(April 8, 2022 – June 3, 2022)

Accounts Receivable/Permittee Cycle Billings

On May 16, June monthly billings and 4th Quarter (Jun/Jul/Aug) billings were mailed out for a total of \$ 303,929. Breakdown is \$200,727 CoA/AWU; quarterly cycle invoices \$ 83,202; and June monthly cycle invoices \$ 20,026.

On June 16, July monthly billings will be mailed out for \$ 20,026.

There is only one more month (August) of permittee invoices to be billed until the end of the fiscal year for a total of \$ 20,026.

Budget FY 2023 – Proposed Version, and Pumpage Analysis

FY 2023 Draft Proposed Budget Version along with the Fee Schedule to be brought before the Board for final approval at the July 14 Board Meeting. (Statutory deadline for approval is July 31. August is too late.)

FY 2022 Budget Revision 2 – we will wait until closer to the end of the fiscal year to determine if any changes will be requested/needed. I am predicting that this may not be necessary.

Financial Reporting – Website Transparency Section (Texas Comptroller’s Office)

These are four separate reports (monthly) and in different format (data over formatting, and collapsed view vs expanded view) than the four monthly financial reports that are included in the monthly Board backups, that are fiscal year-to-date.

Transparency Star-related: Most current, available financial reports are to be posted on our website and accessible within three clicks, as required by the Texas Comptroller of Public Accounts Transparency Star Program. Balance Sheets, Profit and Loss Statements, and Check Registers (Operating and Payroll) through May 2022 should be posted on the District website.

Miscellaneous

Completed 2022 Census of Governments, Survey of Public Employment and Payroll.

Completed the U.S Department of Labor, Bureau of Labor Statistics occupational and wage data for the Occupational Employment Wage and Statistics (OEWS) program.

The Administration Team typically has repetitive monthly tasks e.g. monthly bank reconciliations, monthly adjusting journal entries, accounts payable, payroll, contract/grant/project tracking, office maintenance and repairs, budget monitoring, bi-weekly payroll journal updates, directors’ compensation, pre-paids, DMFs, posting public meetings, preparing meeting backups, etc. These types of tasks are not listed in this report because they are repetitive. Administration status reports are generally more summarized than the other teams, as we list our extra-ordinary tasks outside of our routine tasks, while supporting all other teams.



**Barton Springs
Edwards Aquifer**
CONSERVATION DISTRICT

April 26, 2022
*Sent via email and public
comment form*

Robert Romig, Sunset Commission Project Manager
Texas Sunset Advisory Commission
PO Box 13066
Austin, TX 78711
robert.romig@sunset.texas.gov

RE: Sunset Commission Review of Texas Commission on Environmental Quality (TCEQ)

Dear Mr. Romig:

The Barton Springs/Edwards Aquifer Conservation District (District) offers these comments and recommendations for the Texas Commission on Environmental Quality's (TCEQ) Wastewater Permitting Program. The District has the authority under state law over issues relating to the potential impact of wastewater effluent on the Trinity and Edwards Aquifers within the District. Over the last decade, the District has been involved in multiple initiatives to encourage sustainable management of wastewater to help prevent the degradation of our creeks and streams that recharge the aquifers that we have been entrusted by Texas Water Code to manage and protect. Our state-sanctioned role as a groundwater steward, however, is being threatened by inadequate state regulation of wastewater effluent and insufficient support for alternative ways to imagine reuse of the resource.

The TCEQ is responsible for protecting water quality in the state. The TCEQ is also the authority to regulate activities having the potential for polluting the Edwards and Trinity Aquifers. Furthermore, the purpose of the Wastewater Permitting Program is to protect the quality of the surface and groundwater in Texas by regulating the types and amounts of pollutants introduced into water through the issuance of written authorizations. **The District believes that, in many cases, the existing regulation and effluent standards are inadequate to protect the receiving stream uses and groundwater.** The District's comments, and concerns and their basis are provided below.

- 1. Time is of the essence to implement sustainable wastewater management.** The population of Texas has grown 40 percent since 2000 and is projected to increase another 73 percent between 2020 and 2070, from 29.71 to 51.5 million people. As the population increases, so will water demand, wastewater generation, and the proportional increase in wastewater permits. There have been several attempts to pass legislation and adopt rules that would address concerns related to wastewater. In 2009, for example, a rule petition to prohibit domestic wastewater discharge within the Edwards Aquifer Contributing Zone was submitted to the TCEQ with the support of cities and

counties having jurisdiction over 95 percent of land area of the region. A stakeholder process initiated by the TCEQ in response to the petition elicited a weight of scientific evidence in support of the ban, but the effort faltered when the TCEQ proposed effluent standards that were not proven to be protective of water quality in place of a prohibition. In 2013, during the 83rd legislative session, the District helped draft legislation (HB 2046) that would have simply funded a study to provide the science and engineering basis for addressing concerns related to wastewater management. To date, all proposed legislation has failed and the TCEQ has yet to initiate an adequate study or rules on the issue. The current and growing threat to surface and groundwater quality requires greater urgency on the part of the TCEQ.

2. **The TCEQ has yet to develop numeric nutrient standards for rivers and streams despite creating a working group to do so in 2002.** Nutrient pollution, specifically in the form of total phosphorus and nitrate nitrogen, a component of total nitrogen, has numerous negative impacts on aquatic life, recreational uses, and public water supplies. The U.S. Environmental Protection Agency (EPA) recommends that states develop numeric nutrient standards. The TCEQ staff is using narrative nutrient standards for streams not numeric. Narrative standards are qualitative and subjective and can be viewed differently by different permit writers. By lacking numeric standards, TCEQ does not know when a stream has reached a tipping point and is taking a reactive approach, rather than a proactive approach, to protecting out streams and aquifers. Numeric standards are necessary to guide nutrient limits in permits and without numeric standards the TCEQ is without a way to estimate changes in the assimilative capacity of the stream or develop a total maximum daily load for streams that suffer from nutrient pollution. With the unprecedented growth in population and development, the TCEQ should, at minimum, fast track the development of nutrient criteria for the creeks and streams in the Edwards Aquifer Contributing Zone.
3. **TCEQ should seek input and adopt rules on decentralized wastewater systems that promote the maximum beneficial reuse of wastewater effluent.** Wastewater should be viewed as a resource and its reuse can achieve large savings in water, energy, and infrastructure. Decentralized wastewater treatment presents the greatest opportunity for reuse since treated wastewater will be generated closer to the potential reuse sites. This is an especially attractive option where new developments lack the traditional infrastructure either in-place or nearby for affordable connection to a centralized treatment system with available capacity. Reuse of the effluent resource will also lessen demand on potable water sources including groundwater. The TCEQ should foster regional collaboration on innovative initiatives and develop rules to help Texas overcome the mounting challenges regarding growing water demand and wastewater generation while ultimately protecting natural resources. Practical support for decentralized wastewater treatment will encourage water conservation and allow flexibility with how and where development occurs. Stronger agency support for decentralized wastewater treatment will help overcome aversion to risk that often influences local units of government, developers, and the engineering community and thus, perpetuates the traditional approach to dealing with this form of our water resource. Growing demand for water, water related

services, and ongoing growth and development in our District and beyond, demand new approaches to managing our water resources.

4. **The TCEQ should establish a quantitative scientific analysis and the tools necessary for establishing numeric nutrients standards and nutrient effluent limits for Texas Pollutant Discharge Elimination System (TPDES) permits.** Because the TCEQ has not established numeric nutrient criteria for streams, the agency's technical assessment that is relied on is inadequate for assessing water quality degradation in streams. The TCEQ has established numeric nutrient standards for reservoirs and has established in the "Procedures to Implement the Texas Surface Water Quality Standards" document a very detailed and specific quantitative technical assessment screening method and model for assessing nutrient impacts in reservoirs. The TCEQ, however, is still using a simple qualitative screening assessment for streams. The EPA provides multiple approaches to establishing nutrient criteria such as the reference condition approach, empirical stressor-response models, and mechanistic water quality models. The EPA has created the Water Quality Analysis Simulation Program (WASP) used to model water quality responses including impacts from nutrients. It's well past the time for the TCEQ to establish a quantitative technical review and to invest in an adequate nutrient model for streams rather than maintaining the status quo. Furthermore, the EPA provides "Ambient Water Quality Criteria Recommendations," since 2001, for rivers and streams in nutrient ecoregions established throughout Texas and all states. The TCEQ should consider using this practical, science-based guidance for watersheds or smaller geographic areas which includes analysis of historical and recent data, reference conditions based on the 25th percentiles of nutrient data, models, expert review, and the assessment of potential impacts downstream. Any scientific analysis should not only consider the site-specific data related to a permit but the cumulative impacts (runoff, other discharge permits, etc.) and the assimilative capacity of the stream much as it is done when a total maximum daily load is calculated.

5. **Total phosphorus effluent limits should not only be based on achievable technology but on a quantitative scientific analysis too.** The TCEQ must acknowledge that some of Texas's most pristine streams have phosphorus concentrations that are so low as to potentially be nondetectable. Thus, even a small amount of additional phosphorus from wastewater discharges will degrade the water quality and potentially change the designated-use attainment status of the stream. Furthermore, if the TCEQ's desired future is to have clear-running, algae-free streams as many once were, it should require alternative wastewater (e.g., Texas Land Application Permits (TLAPs)) disposal/reuse methods if a scientific analysis determines that technology can't achieve the appropriate effluent limits for discharge to historically-pristine streams. Requiring wastewater disposal/reuse methods that are an alternative to discharge should not be viewed as anti-growth. Developers have used these alternative-to-discharge methods in the state and elsewhere. In addition, instream flows and bed and banks permits should not be the deciding factor in protecting the water quality of Texas's most sensitive streams and aquifers.

6. **Differentiate the technical review between a Tier 1 and Tier 2 anti-degradation review.** The “Procedures to Implement the Texas Surface Water Quality Standards” and “Texas Surface Water Quality Standards” documents state that antidegradation reviews under Tier 1 ensure that designated uses are not impaired and antidegradation reviews under Tier 2 ensure that high quality waters are protected and maintained unless lowering it is necessary for important economic or social development. Degradation is defined as a lowering of water quality by more than a de minimis extent. The TCEQ should establish a quantitative threshold and analysis for determining if a proposed discharge will lower the water quality in streams beyond a “de minimis” amount for Tier 2 anti-degradation reviews. In practice, the TCEQ appears to be conducting the same technical assessment for both Tier 1 and Tier 2 anti-degradation reviews despite the differing levels of protection that the two tiers intend to provide. Additionally, when a Tier 2 anti-degradation review indicates that a proposed discharge is expected to degrade water quality, the TCEQ evaluates whether the lowering of water quality is necessary for economic development such as an increase in employment, tax base, and housing. However, the TCEQ is failing to balance that review with the negative economic consequences or social costs associated with the degradation of water quality. The TCEQ also evaluates whether reasonable alternatives are available and there are multiple wastewater disposal/reuse alternatives available in almost all cases. These deficiencies are noted in the context of a Tier 3 designation that applies to waters classified as Outstanding National Resource Waters. Other states, including our neighboring states of New Mexico, Oklahoma, and Louisiana, have used this designation to acknowledge and protect the highest quality streams, but Texas has not.

7. **River segments located within the Barton Springs/Edwards Aquifer Conservation District that have been assigned the Aquifer Protection designated use especially need updated numeric standards to protect drinking water quality.** There are several environmentally sensitive ephemeral and intermittent streams that are interconnected with the shallow Trinity Aquifer in the Contributing Zone and provide direct recharge to the Edwards Aquifer over the Recharge Zone. These aquifer systems are the primary source of drinking water for tens of thousands of people in the region and the source of federally protected endangered species habitat at the Barton Springs complex. While streams (and their tributaries) that have been assigned the Aquifer Protection designated use – Barton Creek (Colorado River Basin Segment No. 1430) and Onion Creek (Segment No. 1427) – have specific standards established in a watershed rule (30 TAC Chapter 311) and in the Edwards Aquifer rules (30 TAC Chapter 213), the District believes those standards are outdated and ineffective at protecting this designated use as intended. The effluent standards of 5 mg/L carbonaceous biochemical oxygen demand (CBOD), 5 mg/L total suspended solids (TSS), 2 mg/L ammonia nitrogen, and 1 mg/L total phosphorus need to be updated. For example, TCEQ has issued TPDES permits in Bear Creek and Onion Creek (segment No. 1427) with more stringent effluent standards. Hays County Water Control & Improvement District No. 1 (TPDES Permit No. WQ0014293001) has effluent standards of 0.15 mg/l total phosphorus and 5 mg/l total nitrogen, and the City of Dripping Springs (TPDES Permit No. WQ0014488003) has an effluent standard of 0.15 mg/total phosphorus and 6 mg/l total nitrogen. While these phosphorus standards are an improvement over the current

standards set for the aquifer protection designated use, the nitrogen standards are still too permissive. In Florida, for example, where there is a similarly strong connection between drinking water, surface, and groundwater, total nitrogen nutrient thresholds for streams range from 0.67 mg/L to 1.87 mg/L across the majority of the state. Nitrate nitrogen in groundwater is a major concern and a stringent total nitrogen standard is necessary to protect human health and the health of bays and estuaries downstream. Failure to address the Aquifer Protection designated use with appropriately protective numeric standards poses a threat to public health and more.

8. **Defining numerical nutrient standards and technical procedures will help to minimize the number of contested-case hearings on wastewater permits.** The current regulatory environment has become an issue of great concern and contention and new wastewater permits for direct discharge, especially in the Texas Hill Country, are likely to be contested by a range of protestants. The contested-case hearing process is long and expensive for applicants and protestants alike with a highly uncertain outcome. There is a need to clarify regulatory uncertainty and provide a clear path to permitting. These types of rational outcomes depend on the TCEQ to adhere to its mission and act in a manner that is consistent with the agency's stated philosophy.
9. **The TCEQ should establish additional protective rules for TLAP and TPDES permits.** For TLAP permits, the TCEQ should require adequate treatment technology (e.g., membrane reactor) and effluent standards for TLAPs proposed over the Edward Aquifer Recharge Zone and require permittees to install soil moisture monitors to determine soil saturation to help determine when areas are unsuitable for irrigation. For certain of the TPDES permits, the TCEQ should require a category A wastewater-operator license, require the permittee to conduct a study of instream conditions, require disinfection by way of ultraviolet treatment instead of chlorination and require instream monitoring on ambient background conditions and post-discharge conditions.
10. **The TCEQ should ensure that the cumulative or collective flow of On-Site Septic Facilities (OSSF) is being considered in permit decisions.** The TCEQ permits OSSFs producing 5,000 gallons a day or more and should ensure there are no loopholes in the rules relating to flow calculations that allow a developer to design a system of multiple OSSFs that falls under the individual OSSF flow requirement. Regardless of the number and the size of OSSFs that are designed to serve a new development, nitrogen limits should be established for outflow in concert with the assimilative capacity of the development site to protect groundwater and nearby creeks and streams from nutrient enrichment. This recommendation may require improved coordination with county governments that become the permitting authority in certain circumstances.

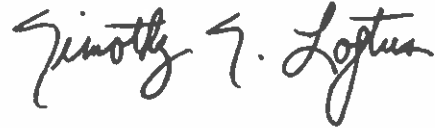
As a regulatory agency, we distinctly understand the need to consider science and follow thoughtful policies when making decisions on rules and permits. We are also keenly aware of the resources needed to have an adequate and skilled staff in order to fulfill our mission. The Texas Constitution makes clear that the preservation and conservation of the state's water and natural resources are public rights and duties. The TCEQ, along with the state legislature, is on the front line of ensuring that an ever-growing

number of Texans aren't being denied their constitutional rights. The TCEQ needs the funding and staff to accomplish their mission "to protect our state's public health and natural resources consistent with sustainable economic development." Improving the TCEQ's Wastewater Permitting Program is necessary in order for the Lone Star State to remain faithful in their promise to all Texans.

Respectfully yours,



Kendall Bell-Enders
Regulatory Policy and Project Manager



Timothy T. Loftus, Ph.D.
General Manager

Item 5

Board Discussions and Possible Action

- a. Discussion and possible action related to the selection of the recipients of the Kent S. Butler Memorial Groundwater Stewardship College Scholarships.**



Barton Springs/Edwards Aquifer
Conservation District

Agenda Item 5a. Kent S. Butler Groundwater Stewardship Scholarship Winners

Applicants were required to write an essay between 1,000 and 1,500 words or no more than six pages single-sided or three pages double-sided.

Essays must focus on groundwater issues, which may include but not limited to:

- Non-point source pollution
- Pollution prevention
- Water conservation
- Hydrogeology



Barton Springs/Edwards Aquifer
Conservation District

Agenda Item 5a. Kent S. Butler Groundwater Stewardship Scholarship Winners

Aseel Rawashdeh - \$2,500 Scholarship
Essay - "A Discussion on the Global Groundwater Crisis: Potential Approaches to
Groundwater Sustainability"
Anderson High School
Graduates June 2022

Samantha Cook - \$1,500 Scholarship
Essay – "Packin' Parched"
Ann Richards School For Young Women Leaders
Graduates May 2022

Weston Kirk - \$1,000 Scholarship
Essay – "Examining the Impact of Land Development and Urban Sprawl on the Edwards
Aquifer, and Exploring Prospective Solutions
Dripping Springs High School
Graduates May 2022



Barton Springs/Edwards Aquifer
Conservation District

Agenda Item 5a. Kent S. Butler Groundwater Stewardship Scholarship Winners

Total Scholarship Amount: \$5,000

**THANK YOU TO CITY OF AUSTIN FOR
CONSERVATION CREDIT DONATION!**

Item 5

Board Discussions and Possible Actions

b. Discussion and possible action on aquifer conditions as related to Stage II Alarm Drought declaration.

Item 5

Board Discussions and Possible Actions

c. Staff Presentation: “Preliminary Results and Insights from the BSEACD In-House Trinity Model”



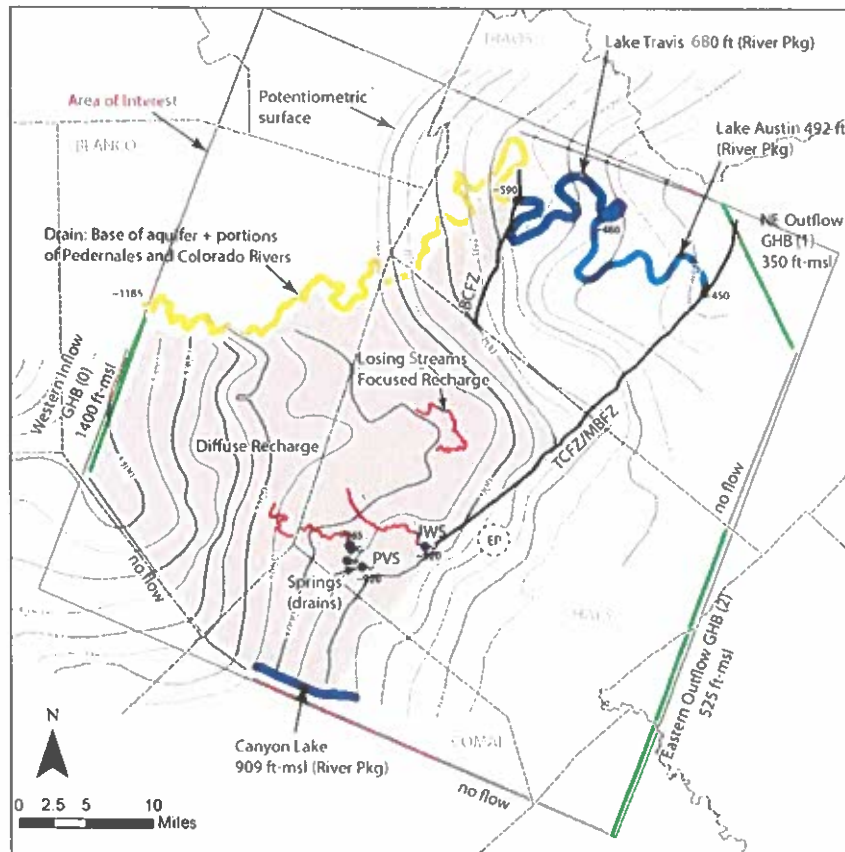
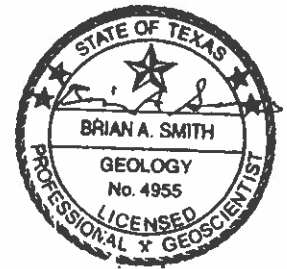
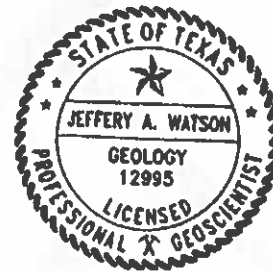
Preliminary Results and Insights from the BSEACD In-House Trinity Model

BSEACD Technical Memo 2022-0520-A DRAFT

May 2022

Jeffery A. Watson, P.G., Brian A. Smith, Ph.D., P.G, and Justin Camp

Barton Springs/Edwards Aquifer Conservation District



Abstract

Rapid rates of growth in central Texas have led to significant increases in water demand. In the Hill Country of central Texas, as there is very little surface water available, groundwater from the Trinity Aquifer provides most of the water for domestic, agricultural, commercial, and industrial purposes. However, the extent of these resources has not been quantified adequately for promulgation of rules to protect the aquifers 50 years into the future. The in-house numerical model (IHM) being developed by the BSEACD Aquifer Science Team is intended to provide a basis for development of policy that will be protective of the Trinity and Edwards Aquifers within Hays and Travis Counties. This model is based on decades of hydrogeologic data collection, compilation of these data into a conceptual model, then development of the steady-state and transient phases of the model. The BSEACD has promulgated rules to protect the aquifers from increased pumping and severe droughts. However, these rules need to be refined to address the potential impacts from rapidly increasing demand for groundwater and the potential for droughts more severe than the drought of record of the 1950s. The IHM has been developed to run various pumping scenarios for which pumping increases significantly over the next 50 years. Preliminary model results predict moderate drawdown over the entire study area with greater amounts of drawdown near the major pumping centers. Impacts to springflow are more significant since those springs support ecological and economic resources. Further downstream, surface flows derived from springflows provides recharge to the Edwards Aquifer and discharge to Barton and San Marcos Springs. The next phase of the model will evaluate impacts to the aquifers from severe drought.

Introduction

Rapid growth in central Texas is putting a significant demand on water resources. The Trinity Aquifer is a critical groundwater resource in central Texas. It is subdivided into the Upper, Middle, and Lower Trinity Aquifer, referred to collectively in this document as the 'Trinity Aquifers'. With groundwater being the prime source of water in central and western Hays County, studies of the Trinity Aquifers are being conducted to better understand potential impacts to the aquifers, to users, and to ecological resources from this increased demand. Significant increases in water demand in conjunction with frequent droughts could cause significant lowering of water levels in wells plus decreasing flow from springs that are the sources of water to many of the streams that cross the Hill Country. Decreased flow in these streams can lead to degraded water quality that can impact ecological and economic resources. Decreased flow can also lead to less recharge in the Edwards Aquifer and ultimately impacts to the endangered species that live in San Marcos Springs and Barton Springs. In addition to data that have been collected over many years, numerical models are one of the best tools for predicting responses to increased pumping and drought on the Trinity Aquifers. This report documents the development of the Barton Springs/Edwards Aquifer Conservation District's (BSEACD) in-house numerical model (IHM), a new aquifer evaluation tool which simulates the Middle Trinity Aquifer, and presents some preliminary modeling results for policymaking discussion purposes.

From 2001 to 2004, studies were conducted by the BSEACD Aquifer Science Team to determine the sustainable yield of the Edwards Aquifer. This study led to the promulgation of rules to protect springflow and water levels from excessive lowering during periods of severe drought which would significantly impact water-supply wells and the endangered salamanders that live in Barton Springs. Key aspects of the new rules were cessation of issuance of new historical permits and the allowance for permits for

conditional use of Edwards groundwater. Subsequent studies led to revised drought trigger rules (2005), limits on withdrawal from the Edwards during extreme drought (2007), and establishment of management zones (2009). Results from the Trinity sustainable yield study could lead to promulgation of similar rules for the Trinity Aquifers.

The BSEACD has been studying the Trinity Aquifers for the past 20 years, and we have collaborated on these studies with other partners such as Hays Trinity Groundwater Conservation District (HTGCD), Edwards Aquifer Authority (EAA), Meadows Center at Texas State University, Hays County, Travis County, Southwest Travis County Groundwater Conservation District (SWGCD), and the University of Texas at Austin. Studies of the Trinity Aquifer intensified following annexation of the shared territory in 2015. Within the shared territory the EAA manages the Edwards Aquifer and the BSEACD manages the Trinity. These studies include installation of monitor wells, aquifer testing in water-supply wells, measuring changes in water levels in wells over time, dye tracing, water-quality analyses, flow measurements in springs and streams, analytical and numerical modeling, and field mapping.

Benefits of Numerical Modeling

Because we don't have data from the Trinity Aquifers on impacts from high rates of pumping both spatially and temporally, or on impacts from severe droughts such as the 1950's drought of record, numerical groundwater models are the best tools available for evaluating the combined impacts of pumping and drought. A numerical model built on an adequate conceptual model with hydraulic data that covers a range of aquifer conditions, such as high and low flow, is capable of reasonably simulating future conditions of the aquifer. The two key model outputs for policymaking discussion are simulated water levels and simulated springflow. By applying stresses to the aquifer such as reduced recharge or increased pumping, the model can predict how water levels and springflow within the aquifer are likely to be impacted when subjected to the stressor.

The key inputs to a completed model are recharge and pumping. Model runs generally start with current pumping that is then increased over time. The IHM model runs presented in this report evaluate three scenarios: one baseline scenario in which pumping does not change, and two scenarios in which pumping is increased from the present-day rate over a 50-year predictive period. The locations of pumping wells are also varied between model runs to evaluate how the placement of pumping wells affects aquifer conditions. The next phase of scenarios to be evaluated with the IHM will include variations in recharge, including 1950s drought-of-record conditions. Multiple scenarios will be run that include combinations of pumping and drought. This next phase will be completed by the end of June 2022 followed by an update to this report.

History of Trinity Models in Central Texas

The original Groundwater Availability Model (GAM) for the Middle and Upper Trinity Aquifers of central Texas was developed in 2000 (Mace et al. 2000). In 2009, the TWDB revised the GAM (Jones et al. 2009) to include more recent data and to add a layer to the model to simulate the Lower Trinity Aquifer. The original and revised GAMs indicated that with increased pumping over time and periods of severe drought, some portions of the modeled area would experience significant decreases in water levels. Because of rapid growth in central Texas and limited water resources, many entities realized that improved models were needed. The amount of data about these aquifers has increased significantly since the revised GAM was completed. These GAMs covered a large area, and it was recognized that the focus

of any improved models needed to be centered on Hays County while including portions of surrounding counties.

The BSEACD staff participated in preparation of a conceptual model of the Middle Trinity Aquifer of central Texas. A report on the conceptual model was written by Southwest Research Institute and published by the Meadows Center at Texas State University in September 2019 (Martin 2019). This report is the basis for both the BSEACD's IHM and the BRAAT (Blanco River Aquifer Assessment Tool) model being developed by Southwest Research Institute in conjunction with the BSEACD and other partners. The IHM was initially developed as a steady-state model that has been refined into the current transient model. The transient model allows for simulating future scenarios that will include various combinations of increases in pumping and severe drought. Development of the BRAAT model began in late 2021 and is expected to be completed in 2023. A conceptual model has been prepared by TWDB, but the actual development of the GAM has not begun as of May 2022.

Current and Potential Future Rules

The Trinity Aquifers within the BSEACD boundaries are currently covered by a number of existing district rules. Those rules include restrictions on pumping during drought, unreasonable impacts from pumping of permitted wells, special conditions on permits that might cause unreasonable impacts, designation of management zones, and a MAG (modeled available groundwater) that is calculated by TWDB and is based on the DFC (desired future condition). Unreasonable impacts are defined by the BSEACD rules as a significant drawdown of the water table or reduction of artesian pressure as a result of pumping from a well or well field, which contributes to, causes, or will cause:

1. well interference related to one or more water wells ceasing to yield water at the ground surface;
2. well interference related to a significant decrease in well yields that results in one or more water wells being unable to obtain either an authorized, historic, or usable volume or rate from a reasonably efficient water well;
3. well interference related to the lowering of water levels below an economically feasible pumping lift or reasonable pump intake level;
4. the degradation of groundwater quality such that the water is unusable or requires the installation of a treatment system;
5. the Desired Future Condition (DFC) to not be achieved;
6. depletion of groundwater supply over a long-term basis, including but not limited to chronic reductions in storage or overdraft of an aquifer;
7. a significant decrease in springflow or baseflows to surface streams including a decrease that may cause an established minimum springflow or environmental flow rate to not be achieved; or
8. land subsidence.

The first three of these impacts are generally covered by an evaluation of a pumping test on a well using analytical models. This type of evaluation has been done for the Needmore and Electropurification permit applications. Because it was determined that unreasonable impacts could occur from these wells, special permit conditions were set to minimize or avoid the impacts. The fourth unreasonable impact covers

degradation of groundwater quality which is very difficult to determine, but areas of potential impact have been analyzed for water quality so that future water quality can be compared against a baseline of water-quality data. Land subsidence is not an issue for the Trinity Aquifers because the aquifer material is comprised of noncompressible rock such as limestone and dolomite. The numerical models will be most useful for evaluating impacts to unreasonable impacts 5, 6, and 7 (DFCs, depletion of groundwater supply, and decreases in springflow, respectively). Analyses of aquifer data plus evaluation of the results of the numerical models will help us to refine existing rules and to consider promulgation of additional or amended rules.

Study Area and Model Domain

The study area for the IHM covers the entirety of Hays County plus portions of Travis, Blanco, and Comal Counties (Figure 1). Groundwater districts within the study area include the BSEACD, Hays Trinity GCD (HTGCD), Blanco Pedernales GCD (BPGCD), Southwest Travis County GCD (SWTCGCD), and Comal Trinity GCD (CTGCD). The key areas of focus of the modeling efforts are the portions of Hays and Travis Counties within BSEACD boundaries. The secondary areas of focus are portions of the Trinity Aquifers west of the BSEACD boundaries. These secondary areas are important because most of the water in the Middle Trinity Aquifer within the BSEACD comes from these areas to the west. The IHM can also be used as a tool for the HTGCD as they assess impacts to their portions of the Trinity Aquifers and work to develop policies to protect the aquifers. The outer boundaries of the model are set at considerable distances from the areas of key focus so that uncertainties in the input data and the boundary conditions are minimized in the model results.

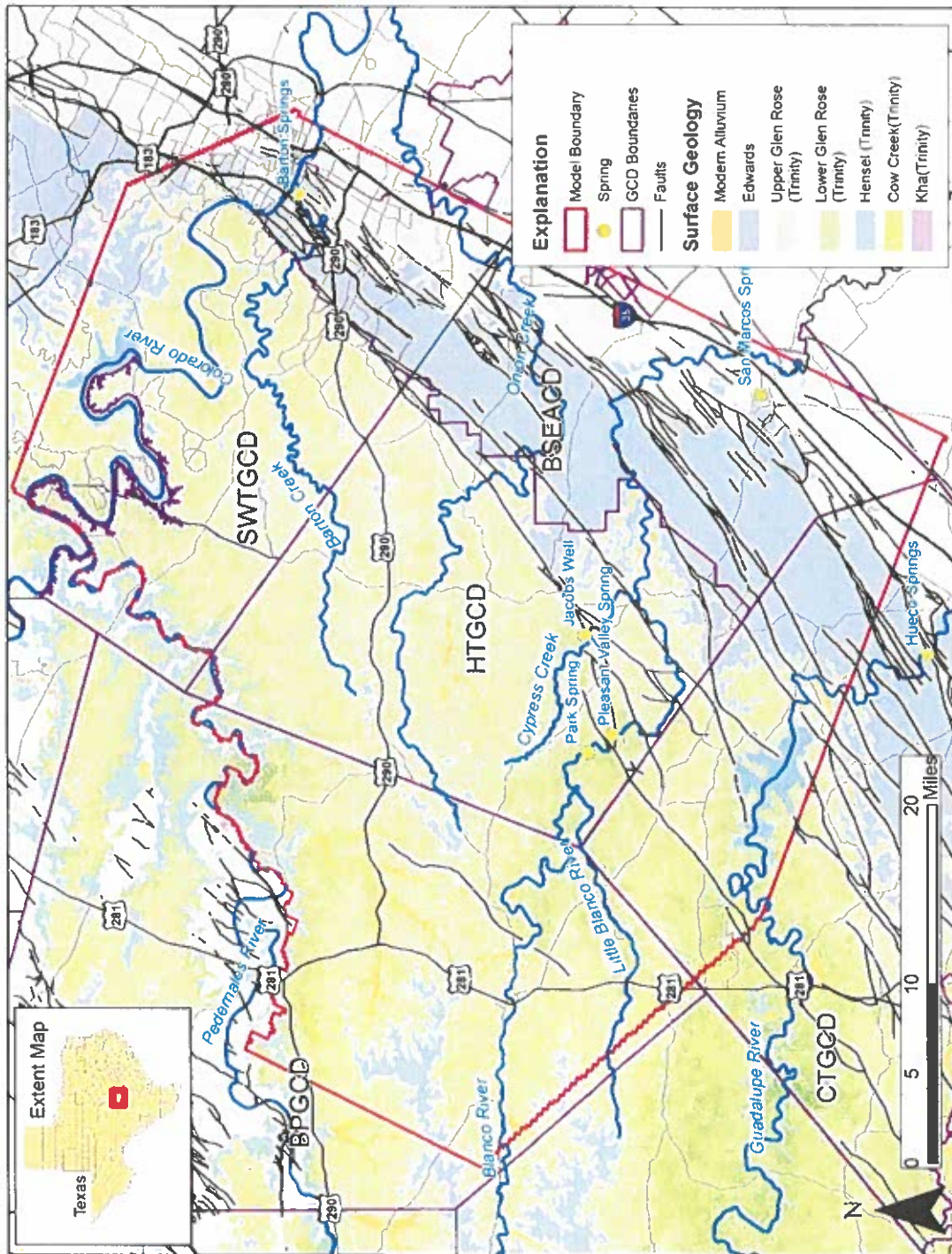


Figure 1-Map of BSEACD In-house Trinity Model domain area

Conceptual Hydrogeologic Model

The IHM was constructed based on a wealth of hydrogeologic data, reports, and studies which have been collected and synthesized by many technical staff, scientists, and researchers working on the Trinity Aquifers over many decades. This has culminated in a conceptual model of the Trinity Aquifers which provides an overall understanding of how the aquifer functions as a system and provides the foundation for the IHM. Presented below is an abbreviated summary of some components of this conceptual hydrogeologic model to provide relevant context for policymaking discussion. The full conceptual hydrogeologic model report will be published later in 2022 after the IHM has undergone peer review by a technical advisory committee.

The Trinity Aquifers are considered to be three distinct aquifers. From top to bottom they are: the Upper Trinity Aquifer, comprising the Upper Glen Rose geologic unit; the Middle Trinity Aquifer, comprising the Lower Glen Rose, Hensel, and Cow Creek limestone; and the Lower Trinity Aquifer, comprising the Sligo and Hosston formations. Of the three aquifers, the Middle Trinity is most targeted for groundwater pumping due to its generally higher productivity and better water quality. Currently the IHM simulates the Middle Trinity Aquifer and excludes the upper and lower aquifers from the model domain. As more data becomes available on the upper and lower aquifers it may become possible to incorporate these units into the IHM at some point in the future.

A schematic cross section of the conceptual model of the Trinity Aquifers is presented in (Figure 2). Groundwater generally flows from west to east across most of the IHM domain, which is approximately the same direction that the geologic units are dipping (Figure 2). The majority of recharge into the Middle Trinity comes from either regional flow from upgradient portions of the aquifer in Blanco and Gillespie Counties, or from losing surface water streams in the Blanco and upper Onion Creek basins within the HTGCD boundaries (Martin et al., 2019).

Downgradient and east of these recharge areas, Trinity aquifer units drop downward across the Balcones Fault Zone and the aquifer transitions from unconfined conditions with aquifer units outcropping on the surface, to confined conditions with aquifer units being buried by several 100's up to over 1,000 ft of overlying rocks (Figure 2). All the Middle Trinity within the BSEACD boundaries is in this confined portion of the aquifer, which depends almost entirely on upgradient flow from the unconfined portion to the west for recharge. Within the confined portion of the Trinity, wells have a significantly thicker saturated column (feet of water above the producing aquifer unit within the well borehole) than the unconfined portion, which means that significantly more drawdown would need to occur in the confined area to fully dewater the aquifer than in the unconfined area.

Artesian springs discharging from the Middle Trinity aquifer account for a large percentage of surface water flow within the Blanco River basin and are ecologically and economically important for the region. The largest of these springs are Jacobs Well Spring (JWS), discharging in the Cypress Creek tributary of the Blanco, and Pleasant Valley Spring (PVS) discharging into the main Blanco River channel upstream of the city of Wimberley (Figure 1). During times of extreme drought, flow from these springs accounts for close to 100% of Blanco River flow in the Wimberley area. Downstream of Wimberley the Blanco River flows over the Edwards Aquifer recharge zone where it is an important source of recharge for both the Barton Springs and San Marcos Springs (Johnson et al. 2012). Previous studies have shown that the Blanco River

Within the District, non-exempt pumping accounts for 73 percent of total estimated groundwater pumping in the Trinity Aquifer (Table 1). This contrasts with the Edwards, where non-exempt pumping accounts for 94 percent of total estimated pumping. Total estimated Trinity pumping (both exempt and non-exempt) is 636 million-gallons-per-year (MGY) compared to 2,719 MGY in the Edwards.

Table 1-Summary of Edwards and Trinity permitted and estimated exempt pumping from the BSEACD 2021 Annual report (BSEACD 2021)

Edwards Aquifer – Estimated Exempt Wells Production		Trinity Aquifer – Estimated Exempt Wells Production	
Average Annual Volume per Exempt Well (gpy)	104,573	Average Annual Volume per Exempt Well (gpy)	104,573
Total Est Volume of Exempt Well Production (gpy) *	105,618,730	Total Est Volume of Exempt Well Production (gpy) *	120,363,523
<i>Est # of wells</i>	1010	<i>Est # of wells</i>	1151
<i>cfs</i>	0.45	<i>cfs</i>	0.51
<i>% of Permitted Production</i>	3.88%	<i>% of Permitted Trinity Production</i>	22.9%
<i>Permitted Edwards Production(gpy)</i>	2,719,277,544	<i>Permitted Trinity Production (gpy)</i>	525,881,557

*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

The largest non-exempt Middle Trinity permit holders in the BSEACD are Needmore LLC (289 MGY permitted) located in the southwestern portion of the district, and Onion Creek Country Club (127 MGY permitted) located in south Austin near Manchaca. These two permits account for more than 50 percent of total permitted Trinity volume in the District. The number and location of exempt Trinity wells is less certain due to inconsistent registering and reporting of domestic wells, especially for wells drilled before 2003 when Texas began digitally storing data on newly drilled wells in an online database. Most registered exempt wells, including wells drilled in the last 10 years, are concentrated along the southwestern portion of the District (Figure 3), likely because of better groundwater quality and a shallower depth to Trinity strata, making it less costly to drill a well. The majority of both exempt and non-exempt pumping in the IHM study area is within the HTGCD upgradient and west of the BSEACD. Within HTGCD the Trinity Aquifers are the only groundwater supply available. It is estimated that there are 1,224 MGY exempt pumping and 1,279 MGY permitted non-exempt pumping as of 2020, which is significantly higher in both categories than the BSEACD Trinity pumping (HTGCD 2020).

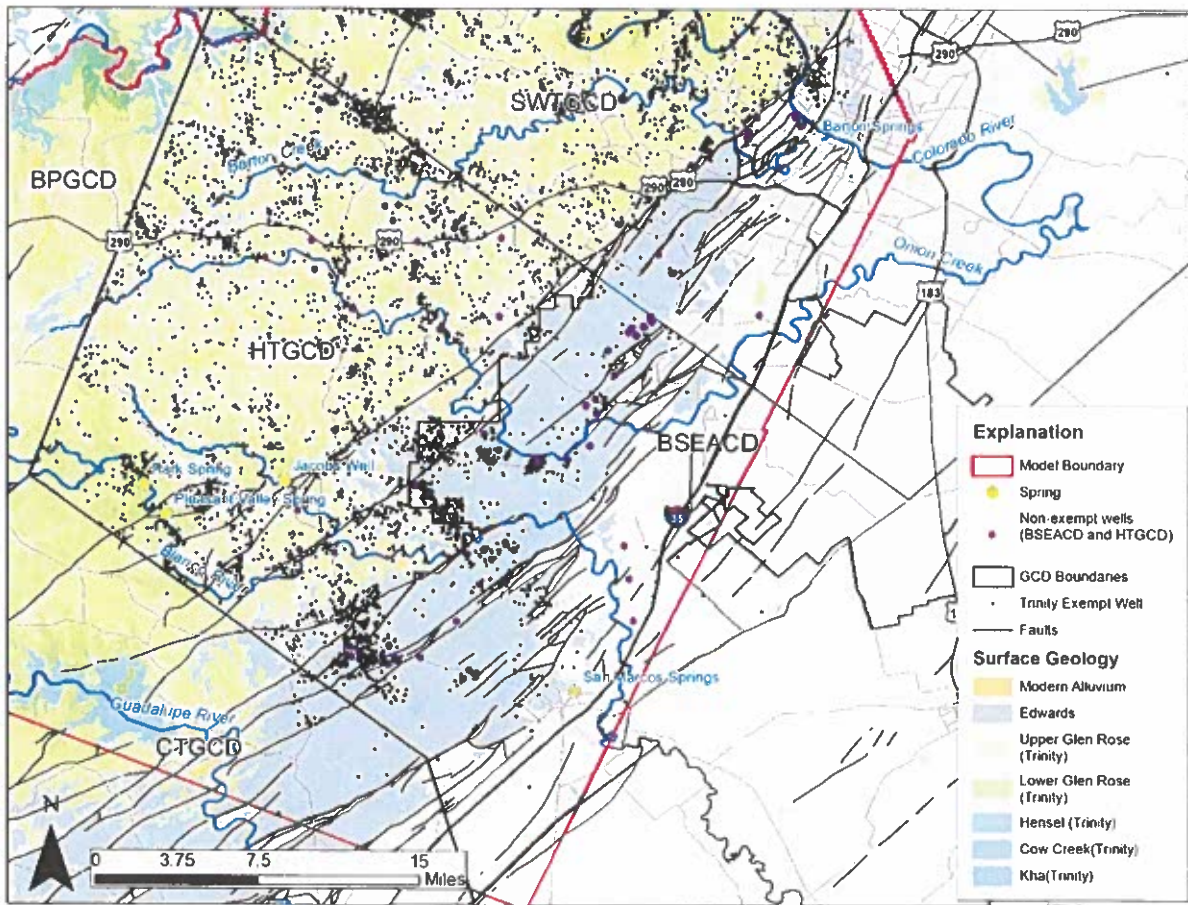


Figure 3- Map of non-exempt and known registered exempt wells within the IHM study area.

Preliminary IHM Results

The following section is a brief summary of results for three different predictive model scenarios created from the IHM. In the predictive models, we run the calibrated in-house model forward in time to make predictions of how the groundwater system will behave if subjected to different stresses (i.e. variations in pumping and/or recharge). Thus, they provide valuable tools for policymakers wishing to understand how the different decisions they make may impact long-term aquifer conditions. The following predictive models simulate a 50-year time period from 2021-2071 subjected to different pumping regimes. All model results presented here should be considered preliminary and are subject to change during the ongoing model development process.

Scenario A: Baseline Model

The baseline model takes a 13-year cycle of recharge and repeats that cycle until the end of the 50-year predictive simulation period is reached (3.8 cycles). This 13-year recharge period was derived from historic

precipitation data between 2008-2020, which included both a prolonged dry climatic period (2009-2014) and a prolonged wet climatic period (2015-2020). For well pumping, a 12-month cycle of 2020 pumping amounts is duplicated for each year of the predictive model (i.e., scenario A assumes that pumping from 2021-2071 will remain at 2020 levels). The baseline model is used as a comparison point for the other predictive modeling scenarios. The modeled impacts to drawdowns and springflows presented in the scenarios B and C below are reported in relation to scenario A, not the absolute modeled drawdown. This allows a more reasonable evaluation of how a given change to pumping will impact model results than taking the absolute drawdown within a single modeling scenario.

Scenario B: High Capacity Well Field Close to Western District Boundary

Scenario B simulates aquifer response to a high-capacity well field pumping 2.5 million gallons-per-day (MGD) in the western area of the BSEACD close to the Rolling Oaks subdivision. Pumping is split evenly between six wells over the 50-year simulation period.

Modeled drawdowns from scenario B reached a maximum of 210 ft near the center of the well field compared to the baseline scenario. The cone of depression from the pumping center propagated north into Travis County, south to the southern boundary of Hays County, and west into HTGCD (Figure 4). Modeled drawdowns in the well field are within a range of drawdowns observed during the 2016 Electro Purification LLC (EP) aquifer test, which pumped at similar rates at the same location as the wells in this model scenario (Hunt and Smith, 2018).

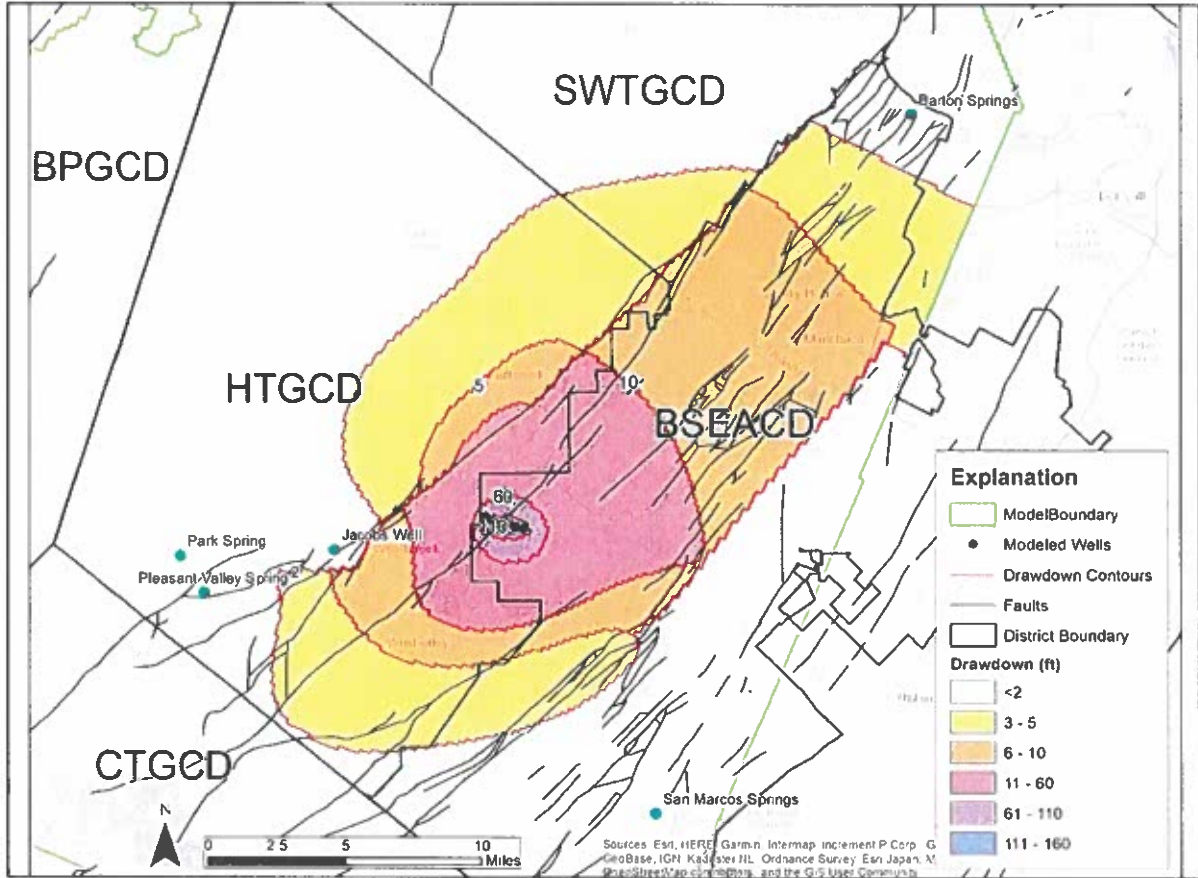


Figure 4- Scenario B: Simulated 50-year Cow Creek drawdown from a hypothetical high capacity well field located in the western portion of the District. Total well field pumping is 2.5 MGD split evenly between six wells.

Scenario C: Hays County Trinity pumping increases following TWDB projected demand growth

Scenario C simulates an area-wide increase in Trinity pumping following TWDB’s projected rate of water demand increases for Region K and Region L within Hays County. The simulation period is from 2021-2071. In both the HTGCD and the BSEACD, district-wide Trinity pumping was increased by a factor of 2.7 of 2020 total estimated pumping (exempt plus non-exempt) as reported in each GCD’s respective FY 2020 annual report (HTGCD 2020; BSEACD 2021). The sum total increase in pumping over the 50-year simulation period was 4,700 MGY for HTGCD and 1,100 MGY for the BSEACD.

Scenario C modeling results indicate widespread drawdown across most of Hays County extending into parts of Travis and Comal Counties (Figure 5). The largest drawdowns were modeled in central Hays County toward the western BSEACD boundary coincident with the large cone of depression simulated in scenario B.

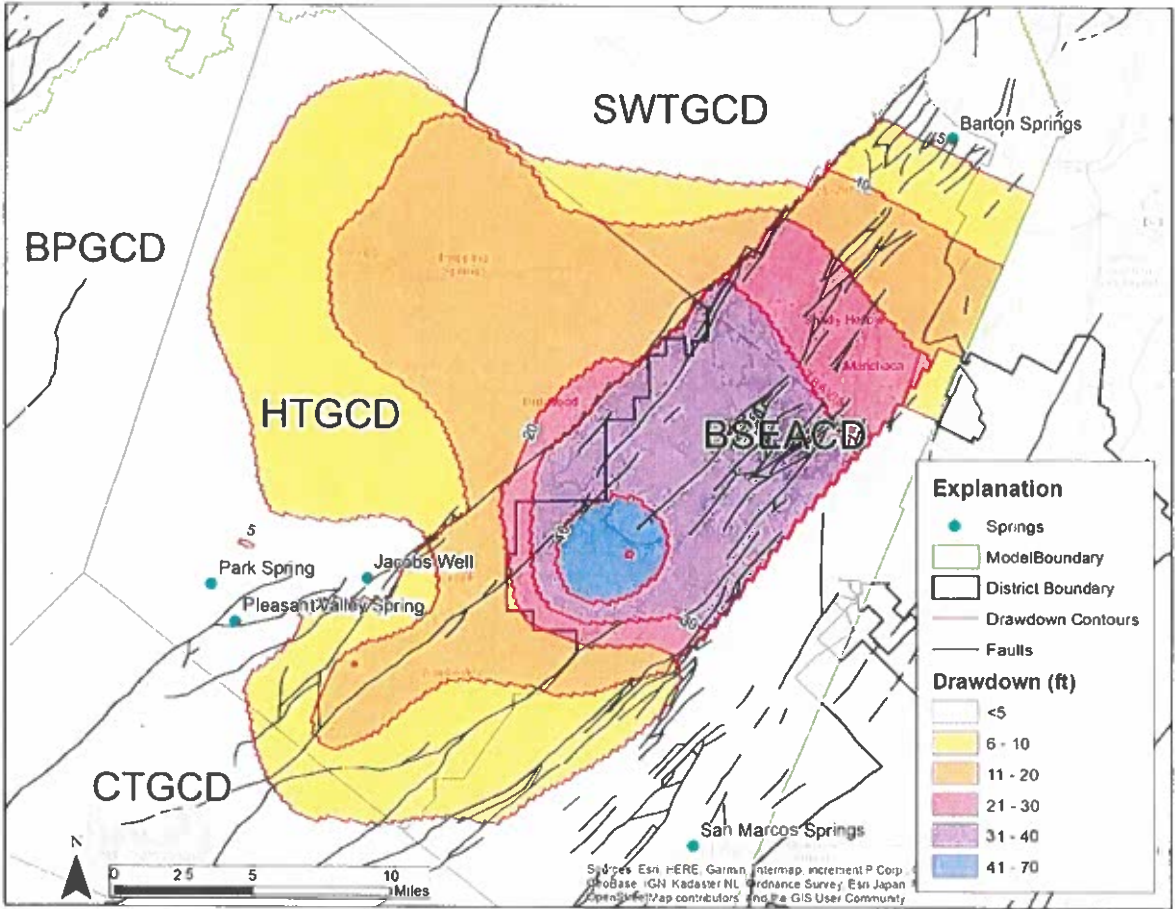


Figure 5- Scenario C: Simulated 50-yr Cow Creek drawdown if Trinity Aquifer production increases at same rate of projected demand growth from 2021 TWDB state water plan in Hays County (HTGCD and BSEACB).

Model Results Summary: Average Drawdowns and Spring Impacts

Total simulated JWS flow over the 50-year simulation period was reduced by 57% in scenario B and 39% in scenario C (Figure 6, Table 2). Total spring flow in the Blanco Basin (including JWS) was reduced by 5% and 9% for scenarios B and C, respectively.

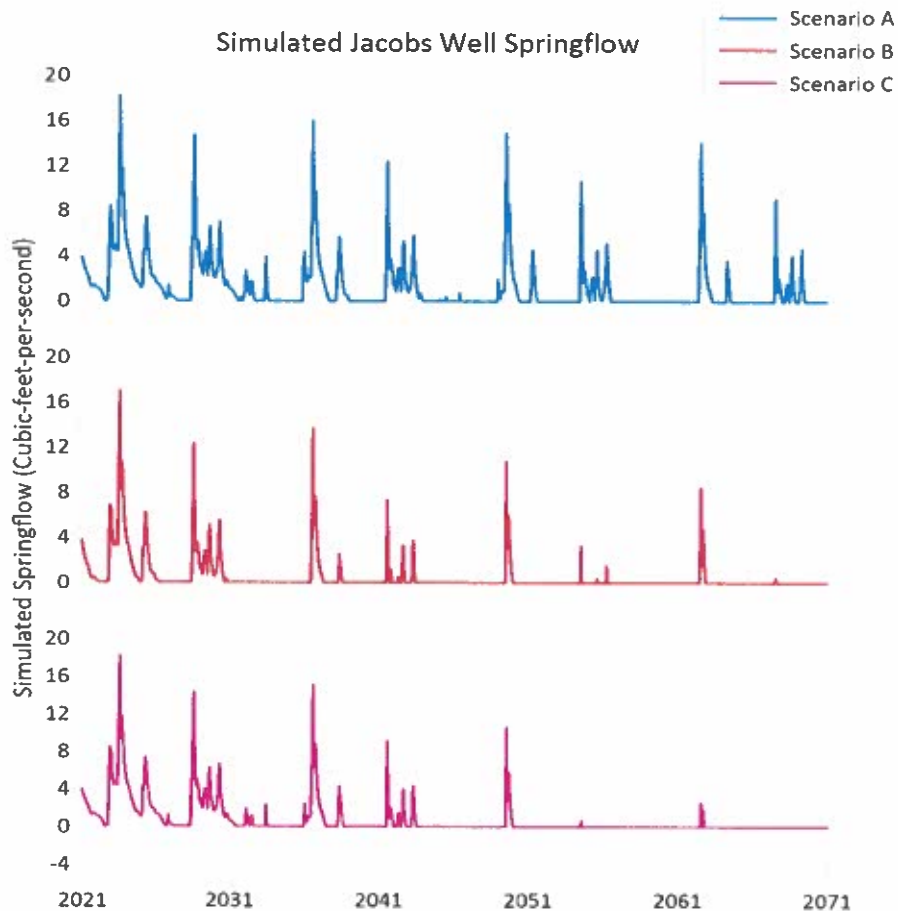


Figure 6- Simulated Jacobs Well Springflow for three different modeling scenarios from 2021-2070: Scenario A) Baseline (no additional pumping stresses added after 2021), Scenario B) Large capacity well field in western portion of BSEACD pumping at a rate of 2.5 MGD split between six wells, Scenario C) Increased Trinity pumping over time based on TWDB state water plan estimated water demand growth from 2020-2070 (TWDB 2021).

Table 2- Modeled springflow reduction and drawdown over 50-year simulation period for modeling scenarios B and C. All values reported as differences from the baseline scenario A model at the end of the 50-year simulation period.

	Scenario B	Scenario C
<i>Simulated Reduction in Jacobs Well Spring Flow</i>	57%	39%
<i>Simulated Reduction in Total Blanco Spring Flow</i>	5%	9%
<i>Maximum drawdown (feet)</i>	212.0	51.0
<i>Average BSEACD district-wide drawdown (feet)</i>	6.6	14.7

Maximum drawdown was 212.0 and 51.0 feet for scenarios B and C, respectively. Average drawdown across the District was 6.6 and 14.7 feet for scenarios B and C, respectively (Table 2).

Discussion of Model Results and Implications for Trinity SY policymaking

Preliminary results of the IHM indicate that significant and widespread drawdowns are likely to occur in response to large increases in pumping within the BSEACD and the HTGCD (Figure 4, Figure 5). Scenario B and scenario C present two different pumping regimes over time and space. Scenario B focuses a large amount of pumping within a relatively small well field, with wells being “turned on” at the beginning and pumping continuously throughout the 50-year modeling period. In contrast, scenario C simulates a pumping increase distributed over a wide area, which starts small but steadily increases over the 50-year modeling period, eventually surpassing the scenario B pumping increase.

While scenario C was removing significantly more groundwater than scenario B by the end of the 50-year modeling period (912.5 MGY versus 5,800 MGY for scenarios B and C respectively), there was a much higher maximum drawdown modeled locally in scenario B (212 ft and 51 ft in scenarios B and C respectively). This demonstrates a key difference between local and regional impacts. While average district-wide drawdown was significantly lower in scenario B, wells nearby the modeled well field would be more likely to suffer unreasonable impacts because the pumping is localized instead of wide-spread. Thus, it is not only the quantity of water, but also the distribution of pumping that is important for evaluating the impacts of pumping on an aquifer.

Average simulated drawdown across the BSEACD was 6.6 ft and 14.7 ft for scenarios B and C respectively over the 50-year simulation period. Given that currently the BSEACD desired future condition (DFC) for the Trinity Aquifers is 25 feet of average drawdown by the year 2070, these model simulations predict that neither scenario would cause the current DFC to not be achieved (UI #5). Within the confined BSEACD portion of the aquifer, wells generally have a saturated column of hundreds of feet above the Middle Trinity Aquifer producing units. Thus, significantly more drawdown would need to occur than the average drawdowns simulated in these two scenarios before aquifer dewatering would occur. This does not mean, however, that large scale pumping will not cause large drawdowns that locally impact wells (UI #s 1-3).

Drawdown averaged across the entire district is a poor metric for local groundwater impacts. It will be critical to continue using aquifer testing and analytical modeling, in addition to numerical models, to evaluate local-scale impacts to wells from proposed pumping. It should also be noted that these modeling scenarios do not include a drought-of-record within the 50-year simulation period. It is likely that simulated drawdowns from pumping would be considerably worse if superimposed on drought-of-record

recharge conditions. In future modeling scenarios we are planning to model the combined impact of increased pumping and another drought-of-record.

In both scenarios B and C, modeled springflow in JWS was significantly impacted by the simulated increases in pumping (Table 2). In these scenarios, the number of times JWS stopped flowing, and the duration of no-flow periods increased significantly (Figure 6). These modeling results suggest that large-scale pumping within the confined BSEACD areas of the aquifer may have considerable impacts to upgradient springflow in the unconfined areas of the aquifer (within HTGCD boundaries). This has implications for UI #7 regarding springflow impacts in the BSEACD rules, and should be an important consideration for Trinity Sustainable Yield policymaking discussions. However, it should also be noted that large-scale pumping increases in the HTGCD, especially in areas close to springs, will likely have a greater impact than equal pumping increases in downgradient pumping within the BSEACD. Therefore, protecting Middle Trinity springflow will require cooperation between the BSEACD and the HTGCD to manage this shared resource.

Modeled JWS springflow was impacted significantly more than the other modeled springs by scenario B high-capacity wellfield pumping (Table 2). This was because JWS was the closest spring to the pumping center and thus its spring catchment was more susceptible to capture from pumping. This demonstrates that the location of a well is a major factor for its potential to capture springflow, and should be an important consideration for planners and policymakers hoping to minimize springflow impacts from pumping. This concept could be the basis for delineation of a groundwater management zone restricting development of high-capacity wells or well fields in areas where these wells would be likely to impact upgradient springflow.

Conclusions

Preliminary results of the in-house model indicate that high rates of pumping in the BSEACD can decrease water levels over a large portion of the Trinity Aquifers and can lead to decreased springflow in upgradient artesian springs within the HTGCD. The location of major pumping centers, and the overall distribution of pumping also appears to be a strong controlling factor on aquifer impacts due to pumping. Almost all recharge into the confined BSEACD portion of the aquifer comes from upgradient in the unconfined HTGCD portion of the Trinity, and increased pumping within the HTGCD is likely to capture a portion of that recharge. Thus, cooperation between the HTGCD and the BSEACD is essential for minimizing impacts to springflows and water levels in both districts. Further runs of the model need to be made to determine if any of these impacts can be considered unreasonable based on the BSEACD's rules for unreasonable impacts and to evaluate the impacts of severe drought, and definitions for some of the unreasonable impacts may need to be refined. The IHM is a valuable tool for informing policymaking discussion and helping to better inform the Trinity sustainable yield rulemaking process.

Future Work

Development of the IHM is an ongoing and iterative process that involves adding complexity, refining existing model conceptualizations, and setting up different predictive model runs depending on the needs of stakeholders and policymakers. The following two predictive scenarios are planned in the short-term in 2022 to help guide the Trinity Sustainable Yield policymaking discussion:

- o Drought of record recharge scenario, both with current pumping regime and superimposed onto increased pumping regimes.

- Large pumping centers in different locations such as upgradient of JWS in the HTGCD, or further south within the BSEACD confined zone.

In the longer term, we will continue to improve and refine model construction and calibration and incorporate lessons learned from development of other models currently in development such as BRAAT or the new TWDB Hill Country GAM. In the future, as new data becomes available and our understanding of the Trinity is improved, we will continue to update the model to reflect these new insights to provide the best tool possible to inform Trinity Aquifer decision making and protect this precious resource.

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Item 6

Director's Reports

Directors' Reports.

Directors may report on their involvement in activities and dialogue that are of likely interest to the Board, in one or more of the following topical areas:

- **Meetings and conferences attended or that will be attended;**
- **Committee formation and updates;**
- **Conversations with public officials, permittees, stakeholders, and other constituents;**
- **Commendations; and**
- **Issues or problems of concern.**

Item 7

Adjournment