

NOTICE OF OPEN MEETING

Notice is given that a **Regular Meeting** of the Board of Directors of the Barton Springs/Edwards Aquifer Conservation District will be held at the **District office**, located at 1124 Regal Row, Austin, Texas, on **Thursday, September 13, 2018**, commencing at **6:00 p.m.** for the following purposes, which may be taken in any order at the discretion of the Board.

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. **Routine Business**
 - a. **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.)*
 1. Approval of Financial Reports under the Public Funds Investment Act, Directors' Compensation Claims, and Specified Expenditures greater than \$5,000. **Not for public review**
 2. Approval of minutes of the Board's August 9, 2018, Regular Meeting and Public Hearing. **Not for public review at this time**
 3. Approval of out-of-state travel for Brian Smith and Brian Hunt to attend the Geological Society of America (GSA) Annual Meeting in Indianapolis, Indiana from November 4 to 7. **Pg. 18**
 4. Approval of order declaring unopposed candidates and cancelling director elections for Precincts 2 and 5 on the general election date November 6, 2018. **Pg. 19**
 - b. **General Manager's Report.** *(Note: Topics discussed in the General Manager's Report are intended for general administrative and operational information-transfer purposes. The Directors will not take any action unless the topic is specifically listed elsewhere in this agenda for consideration.)*
 1. **Standing Topics.**
 - i. Personnel matters
 - ii. Upcoming public events of possible interest
 - iii. Aquifer conditions and status of drought indicators

2. Special Topics. *(Note: Individual topics listed below may be discussed by the Board in this meeting, but no action will be taken unless a topic is specifically posted elsewhere in this agenda as an item for possible action. A Director may request an individual topic that is presented only under this agenda item be placed on the posted agenda of some future meeting for Board discussion and possible action.)*

- i. Review of Status Update Report – at directors’ discretion. **Pg. 26**
- ii. Update on certain projects and activities of individual teams. **Pg. 31**
- iii. Update on the Barton Springs/Edwards Aquifer Habitat Conservation Plan Incidental Take Permit Number TE10607C- 0.
- iv. Update on activities related to the Travis County ILA.
- v. Update on Board committee activity.
- vi. Update on the procedural matters relating to the Needmore Water LLC permit application.
- vii. Update on the procedural matters relating to the Electro Purification LLC permit application.

4. Discussion and Possible Action.

- a. Discussion and possible action related to the District’s concepts for Aquifer Storage and Recovery Rules and to direct staff to draft such rules. **Pg. 45**
- b. Discussion related to assessment of progress made towards achievement of the District Goals set for FY 2018. **Pg. 50**
- c. Receive update and legal analysis from Sledge Law Group on legislation from the 85th Texas Legislature and discuss legal strategy for the 86th Texas Legislature. **NBU**

5. 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;
- Board committee updates;
- Conversations with public officials, permittees, stakeholders, and other constituents;
- Commendations; and
- Issues or problems of concern.

6. 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

Routine Business

a. 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.)

- 1. Approval of Financial Reports under the Public Funds Investment Act, Directors' Compensation Claims, and Specified Expenditures greater than \$5,000.**
- 2. Approval of minutes of the Board's August 9, 2018, Regular Meeting and Public Hearing.**
- 3. Approval of out-of-state travel for Brian Smith and Brian Hunt to attend the Geological Society of America (GSA) Annual Meeting in Indianapolis, Indiana from November 4 to 7.**
- 4. Approval of order declaring unopposed candidates and cancelling director elections for Precincts 2 and 5 on the general election date November 6, 2018.**



**Barton Springs
Edwards Aquifer**
CONSERVATION DISTRICT

MEMORANDUM

TO: ALICIA REINMUND-MARTINEZ
FROM: BRIAN SMITH AND BRIAN HUNT
SUBJECT: OUT OF STATE TRAVEL
DATE: 9/7/2018

We are requesting permission to attend the Geological Society of America annual conference in Indianapolis, Indiana, November 4-7, 2017. This is a major conference for geologists and attendance often exceeds 7,000 people. We have had two abstracts accepted for the conference that cover work the Aquifer Science team has done on dye tracing and studies of the Trinity Aquifers. There are a number of sessions on karst hydrogeology and we will be attending a wide variety of talks related to the work we do at the District.

The cost of the trip is within our budget for training and professional development. Below is an estimated breakdown of costs:

Estimated budget per person

Registration	\$ 420
Airfare	\$ 360
Hotel (4 nights)	\$ 795
Shuttle etc	\$ 40
Per diem (4 days)	\$ 216
	<hr/>
	\$ 1,831

ORDER CANCELLING GENERAL ELECTION

BARTON SPRINGS/EDWARDS AQUIFER CONSERVATION DISTRICT'S ORDER DECLARING UNOPPOSED CANDIDATES FOR DIRECTOR PRECINCTS TWO (2) AND FIVE (5); CANCELLING NOVEMBER 6, 2018 GENERAL ELECTION IN SINGLE MEMBER DISTRICTS PRECINCTS TWO (2) AND FIVE (5); REPEALING CONFLICTING ORDERS; AND PROVIDING FOR OTHER MATTERS IN CONNECTION WITH THE CANCELLATION

WHEREAS, the Board of Directors ("Board") of the Barton Springs/Edwards Aquifer Conservation District ("District or "BSEACD") on August 9, 2018, adopted an order calling a general election to be held on November 6, 2018 (the "Election"), for the purpose of electing directors from the District director Precinct numbers two (2) and five (5); and,

WHEREAS, the Board entered into contracts for election services with Travis and Hays Counties for conducting the election (the "Contracts"); and

WHEREAS, Texas Election Code Sections 144.005 and 144.006, establish deadlines for filing applications for a place on the ballot and for receiving declarations of write-in candidacy for the Election which have now expired; and

WHEREAS, Dana Christine Wilson, the District's duly designated Custodian of Records and Agent to the Board Secretary ("Agent"), in the Election has certified in writing to the Board that Blayne Stansberry is the sole candidate for election to the Director position of Precinct 2 in the General Election, and Craig Smith is the sole candidate for election to the Director position of Precinct 5 in the General Election; and

WHEREAS, the Board hereby finds and determines that the candidates whose names are to appear on the ballot in said election for Director are unopposed, there are no declared write-in candidates, and no propositions are to appear on the ballot for said Election; and

WHEREAS, Texas Election Code, Chapter 2, Subchapter C, authorizes the Board, upon receipt of certification that candidates for an election are unopposed, to declare the unopposed candidates to be elected and, further authorizes the Board to cancel that part of the General Election.

NOW, THEREFORE, IT IS ACCORDINGLY FOUND, DECLARED, AND ORDERED BY THE BOARD OF DIRECTORS OF THE BARTON SPRINGS/ EDWARDS AQUIFER CONSERVATION DISTRICT THAT:

SECTION 1. The facts and matters set forth in the preamble of this Order are hereby found to be true and correct.

SECTION 2. In accordance with Texas Election Code Section 2.053(a), the following unopposed candidates in the General Election in Precincts two (2) and five (5) are hereby declared duly elected to the respective office shown and shall be issued a certificate of election following the date on which the Election for Directors was to have been held:

- Director Precinct 2, Blayne Stansberry
- Director Precinct 5, Craig Smith

SECTION 3. Pursuant to Texas Election Code Section 2.053(b), the part of the General Election applying to the directors of Precincts two (2) and five (5) ordered by the Board for November 6, 2018, shall not be held and is hereby canceled and the District's Agent is hereby directed to cause a copy of this Order to be posted on Election Day at all polling places that would have been used in such Election. The District's Agent is hereby authorized to take any further actions authorized by or necessary under the Texas Election Code or other law to cancel the November 6, 2018 General Election for the District.

SECTION 4. The Board further finds that the cancellation of the Election makes it unnecessary for the District to continue participating in the Contracts with Travis and Hays Counties and hereby authorizes and directs the District to notify the parties to the Contracts of the cancellation of the Election and to notify the parties that the District will no longer be participating in the Contracts. Representatives of the District, including the District's Agent, are hereby authorized to take any additional steps necessary to fulfill the District's obligations under the Contracts, if any, and to terminate the Contracts, if necessary, in a manner consistent with this Order. All orders of this Board in conflict with the provisions of this Order are hereby repealed to the extent of such conflict.

SECTION 5. Should any section, paragraph, sentence, clause, phrase, or word of this Order be declared unconstitutional or invalid for any purpose by a court of competent jurisdiction, the remainder of this Order shall not be affected thereby, and to this end the provisions of this Order are declared to be severable.

SECTION 6. It is hereby found and determined that the meeting at which this Order was passed was open to the public as required by Section 551.001 *et seq.*, Texas Government Code, and that advance public notice of the time, place, and purpose of said meeting was given.

SECTION 7. This Order shall take effect immediately upon its passage.

PASSED AND APPROVED THIS 13TH DAY OF SEPTEMBER, 2018.

**BARTON SPRINGS/EDWARDS
AQUIFER CONSERVATION DISTRICT**

President, Board of Directors

ATTEST:

Secretary, Board of Directors

[SEAL]

ORDEN PARA CANCELAR LA ELECCIÓN GENERAL

ORDEN DEL DISTRITO DE CONSERVACIÓN DEL ACUÍFERO BARTON SPRINGS Y EDWARDS EN LA QUE SE DECLARAN LOS CANDIDATOS ÚNICOS PARA DIRECTORES DE LOS DISTRITOS ELECTORALES DOS (2) Y CINCO (5); SE CANCELA LA ELECCIÓN GENERAL DEL 6 DE NOVIEMBRE DE 2018 EN LOS DISTRITOS ELECTORALES DOS (2) Y CINCO (5) CON UN SOLO CANDIDATO; SE REVOCAN ÓRDENES CONFLICTIVAS; Y SE DISPONEN OTROS ASUNTOS RELACIONADOS CON LA CANCELACIÓN

CONSIDERANDO QUE, el 9 de agosto de 2018 la Junta de Directores (“Junta”) del Distrito de Conservación del Acuífero Barton Springs y Edwards (Barton Springs/Edwards Aquifer Conservation District, el “Distrito” o “BSEACD”) aprobó una orden en la que se convocaba una elección general a celebrarse el 6 de noviembre de 2018 (la “Elección”), con el propósito de elegir a los directores de distrito de los distritos electorales números dos (2) y cinco (5); y,

CONSIDERANDO QUE, la Junta estableció contratos de servicio con los condados de Travis y Hays para que llevaran a cabo la elección (los “Contratos”); y

CONSIDERANDO QUE, las Secciones 144.005 y 144.006 del Código Electoral de Texas, establecen fechas límite para la presentación de solicitudes de un lugar en la boleta y para recibir las declaraciones de los candidatos agregados por escrito a incluir en la Elección, que ahora han vencido; y

CONSIDERANDO QUE, Dana Christine Wilson, la debidamente nombrada por el Distrito como Encargada de los Registros y Agente ante la Secretaría de la Junta (“Agente”) para la Elección, ha certificado por escrito ante la Junta que Blayne Stansberry es la única candidata para el puesto de Director del Distrito Electoral 2 en la Elección General y que Craig Smith es el único candidato para el puesto de Director del Distrito Electoral 5 en la Elección General; y

CONSIDERANDO QUE, por medio de la presente la Junta considera y determina que los candidatos cuyos nombres deben aparecer en la boleta de dicha elección para Director son únicos, que no hay candidatos agregados por escrito declarados y que no aparecerán proposiciones en la boleta de dicha Elección; y

CONSIDERANDO QUE, el Subcapítulo C del Capítulo 2 del Código Electoral de Texas autoriza que la Junta, al recibo de la certificación que indica que los candidatos de una elección son únicos, declare que se elijan a los candidatos únicos, y además autoriza a la Junta a cancelar esa porción de la Elección General.

POR LO TANTO, LA JUNTA DE DIRECTORES DEL DISTRITO DE CONSERVACIÓN DEL ACUÍFERO BARTON SPRINGS Y EDWARDS DETERMINA, DECLARA Y ORDENA QUE:

SECCIÓN 1. Por medio de la presente se declara que los hechos y asuntos establecidos en el preámbulo de esta Orden son verídicos y correctos.

SECCIÓN 2. En virtud de la Sección 2.053(a) del Código Electoral de Texas, por medio de la presente se declara que los siguientes candidatos únicos de los Distritos Electorales dos (2) y cinco (5) de la Elección General son debidamente elegidos para los puestos respectivos indicados, y se emitirá un certificado de elección después de la fecha en la que se iba a celebrar la elección de directores:

- Directora del Distrito Electoral 2, Blayne Stansberry
- Director del Distrito Electoral 5, Craig Smith

SECCIÓN 3. En virtud de la Sección 2.053(b) del Código Electoral de Texas, la porción de la Elección General que se refiere a los directores de los distritos electorales dos (2) y cinco (5) que la Junta ordenó celebrarse el 6 de noviembre de 2018, no se celebrará, y por medio de la presente se cancela y se instruye a la Agente del Distrito que el día de la elección publique una copia de esta Orden en todos los lugares de votación que se hubieran usado para tal Elección. Por medio de la presente se autoriza a la Agente del Distrito a emprender cualquier medida

adicional autorizada por el Código Electoral de Texas o por otra ley, o requerida en virtud de estos, para cancelar la Elección General del Distrito del 6 de noviembre de 2018.

SECCIÓN 4. La Junta además considera que la cancelación de la Elección rinde innecesario que el Distrito continúe participando en los contratos con los condados de Travis y Hays, y por medio de la presente autoriza e instruye al Distrito para que notifique a las partes de los contratos la cancelación de la Elección y que les notifique que el Distrito ya no participará en los contratos. Por medio de la presente se autoriza a los representantes del Distrito, incluida la Agente del Distrito, a tomar cualquier medida adicional requerida para cumplir con las obligaciones del Distrito derivadas de los contratos, si corresponde, y a terminar los contratos, si es necesario, en una manera congruente con esta Orden. Por medio de la presente se revocan todas las órdenes de esta Junta que entren en conflicto con las disposiciones de esta Orden, en la medida en que exista tal conflicto.

SECCIÓN 5. Si un tribunal de jurisdicción competente declara inconstitucional o inválido cualquier sección, párrafo, oración, cláusula, frase o palabra de esta Orden, el resto de esta Orden no se verá afectada por esto, y con este propósito se declara que las disposiciones de esta Orden son separables.

SECCIÓN 6. Por medio de la presente se considera y determina que la reunión en la que se aprobó esta Orden estuvo abierta al público, como lo dispone la Sección 551.001 y *siguientes* del Código Gubernamental de Texas, y que se notificó con anticipación al público la hora, el lugar y el propósito de dicha reunión.

SECCIÓN 7. Esta Orden entrará en vigencia inmediatamente después de su aprobación.

APROBADA Y CONFIRMADA ESTE DÍA 13TH DE SEPTIEMBRE DE 2018.

**DISTRITO DE CONSERVACIÓN DEL
ACUÍFERO BARTON SPRINGS Y EDWARDS**

Presidente de la Junta de Directores

DOY FE:

Secretario de la Junta de Directores

[SELLO]

**CERTIFICATION OF UNOPPOSED CANDIDATES
CERTIFICACIÓN DE CANDIDATOS ÚNICOS**

To: Presiding Officer of Governing Body
Al: Presidente de la entidad gobernante

As the authority responsible for having the official ballot prepared, I hereby certify that the following candidates are unopposed for election to office for the election scheduled to be held on November 6, 2018.

Como autoridad a cargo de la preparación de la boleta de votación oficial, por la presente certifico que los siguientes candidatos son candidatos únicos para elección para un cargo en la elección que se llevará a cabo el 6 de noviembre, de 2018.

List offices and names of candidates:
Lista de cargos y nombres de los candidatos:

Office(s) Cargo(s)	Candidate(s) Candidato(s)
Director (<i>Director</i>) Precinct (<i>Precinto</i>) 2	Blayne Stansberry
Director (<i>Director</i>) Precinct (<i>Precinto</i>) 5	Craig Smith

Dana Christine Wilson
Signature (Firma)

Dana Christine Wilson
Printed name (Nombre en letra de molde)

Elections Administration / Agent to Board Secretary
Title (Puesto)

9/7/2018
Date of signing (Fecha de firma)

(Seal) (*sello*)

Instructions for certification of unopposed candidates:

The authority responsible for preparing the ballot must certify the unopposed status to the authority responsible for ordering the election. This document is filed with the presiding officer of the political subdivision. The governing body must meet, accept this certification, and issue an order or ordinance declaring the election cancelled and the unopposed candidates elected. To complete the cancellation process, a copy of the order or ordinance canceling the election must be posted on Election Day at each polling place that would have been used in the election. See sample Order of Cancellation and outlines for additional instructions.

An election* may be cancelled if:

- 1) The election is one in which a declaration of write-in candidacy is required; and
- 2) No opposed at-large race is on the ballot* within that election;*and
- 3) Each candidate whose name is to appear on the ballot* is unopposed, with some exceptions;
This means:
 - In an all at-large election* (with no single-member districts), if there is one or more opposed at-large races, then all the races go on the ballot within that election.*
 - In an election* in which any members of the governing body are elected from single-member districts, an election in a particular district may be cancelled if the candidate is unopposed and the election otherwise meets the above requirements (i.e., there is no at-large opposed race on the ballot).

Note: A general election (for full terms) or a special election (to fill a vacancy in an unexpired term) is considered a *separate election* with a *separate ballot* for purposes of these tests, even if held on the same election date. See our online Cancellation guide for details.

Instrucciones para la certificación de una elección con candidatos únicos:

La autoridad a cargo de preparar la boleta de votación debe certificar los candidatos únicos sin oposición a la autoridad encargada de ordenar la elección. Este documento se debe presentar al presidente de la subdivisión política. La entidad gobernante debe reunirse, aceptar esta certificación y emitir una orden o una ordenanza en la que declara la cancelación de la elección y la elección de los candidatos únicos sin oposición. Para completar el proceso de cancelación, se debe exhibir el Día de la Elección una copia de la orden u ordenanza de cancelación de la elección en todos los sitios de votación que se hubieran utilizado en la elección. Vea el ejemplo Orden de Cancelación y el resumen para más instrucciones.

Una elección* puede ser cancelada si:

- 1) *la elección es una en la que se requiere una declaración de candidatos por escrito en la boleta de votación; y,*
- 2) *no hay oposición para la carrera por acumulación en la boleta* de votación dentro de esa elección* y*
- 3) *Todos los candidatos cuyos nombres deben aparecer en la boleta* de votación no tienen oposición, con unas excepciones;*
Esto significa:
 - *En una elección* por acumulación (sin ningún distrito con miembro único), si se encuentra una o más de una carrera por acumulación con oposición, entonces todas las carreras estarán en la boleta dentro de esa elección*.*
 - *En una elección* en la que cualquiera de los miembros de la entidad gobernante se eligen de distritos con un solo miembro, se puede cancelar una elección en un distrito específico si hay oposición para el candidato y la elección cumple con los requisitos que anteceden (ej. no hay oposición para la carrera por acumulación en la boleta).*

Nota: *Una elección general (con términos completos) o una elección especial (para llenar una vacante de un término no vencido) es considerada como una elección distinta con una boleta distinta con los propósitos de estas pruebas, aunque se lleven a cabo en la misma fecha electoral. Vea nuestra guía de cancelación en línea para más detalles.*

Item 3

Routine Business

- b. General Manager's Report.** *(Note: Topics discussed in the General Manager's Report are intended for general administrative and operational information-transfer purposes. The Directors will not take any action unless the topic is specifically listed elsewhere in this agenda.)*

1. Standing Topics.

- i. Personnel matters and utilization**
- ii. Upcoming public events of possible interest**
- iii. Aquifer conditions and status of drought indicators**

- 2. Special Topics.** *(Note: Individual topics listed below may be discussed by the Board in this meeting, but no action will be taken unless a topic is specifically posted elsewhere in this agenda as an item for possible action. A Director may request an individual topic that is presented only under this agenda item be placed on the posted agenda of some future meeting for Board discussion and possible action.)*

- i. Review of Status Update Report – at directors' discretion.**
- ii. Update on certain projects and activities of individual teams**
- iii. Update on HCP and ITP status.**
- iv. Update on the City of Dripping Springs' application for a TPDES permit.**
- v. Update on the procedural matters relating to the Needmore Water LLC permit application.**
- vi. Update on the procedural matters relating to the Electro Purification LLC permit application.**

STATUS REPORT UPDATE FOR SEPTEMBER 13, 2018 BOARD MEETING

Prepared by District Team Leaders

	Leader, Staff	Date	PROJECT / ACTIVITY DESCRIPTION	STATUS/COMMENTS
GENERAL MANAGEMENT TEAM				
	Alicia Reinmund-Martinez			
	ARM	9/7/2018	Meetings, Training, Presentations, and Conferences	External Meetings Attended: Alliance Regional Water Authority, SWTCGCD Board Meeting. Other meetings: Cally Fryer, Teleconference calls: Kirk Holland, Conferences/Seminars: TAGD Summit in San Antonio.
Summary of Significant Activities	ARM	9/7/2018	Ongoing Special Projects, Committees, and Workgroups	Ongoing Special Projects: Continued to work with Team leaders on results of salary study project. Held conference calls with consultant in planning Year One implementation of HCP. Conducted 2018 Performance Evaluations and prepared salary acknowledgment forms. Field Rules Committee meeting to discuss ASR Rules Concepts and HCP Committee meeting to discuss Year One implementation plans.
	ARM	9/7/2018	Routine Activities and Day-to-Day operations	Routine Activities/Day-to-Day Operations: provided general oversight of staff activities and oversight of day-to-day operations; approved admin documents; prepared agendas and backup for Board meeting; prepared GM report and assigned tasks; held one Planning team meeting; served as liaison between Board and staff. Consultation with Attorney on: EP and Neeshome permit application, September 13 meeting agenda, and possible changes to Employee Policy Manual. Other Activities: Consultation with Legislative Consultant in planning Board work session.
ADMINISTRATION TEAM				
	Data Christine Wilson			
Accounts Receivable - A	DCW	9/7/2018	Permittee accounts carrying a past due balance:	All accounts currently in good standing.
Accounts Receivable - B	DCW	9/7/2018	Annual permit fees, Annual billings, 1st quarter billings, September monthly billings, and Transport fee invoices mailed out on August 14th.	67 annual invoices for \$19,998; 29 quarterly invoices for \$68,424; 14 monthly invoices for \$25,951; and 2 transport invoices for \$124,000. Grand total billed is \$238,374 + Co/A/WU \$217,625 quarterly payment for a total of \$455,998.
Accounts Receivable - C	DCW	9/7/2018	Drought Management Fees	First fee assessment will be in October (fees don't kick in until after first two full months of drought.)
Annual Report / Appendix B of the District Management Plan	VE/DCW	9/7/2018	Currently preparing for the annual report and possibly new formatting.	This includes compiling appendix B for the annual report which references the management plan. We are also incorporating the HCP into the reporting in these two documents.
Audit - 2018 - TML/Payroll Specific	DCW	9/7/2018	Preparing the annual workers' compensation payroll audit through R Dylong & Associates in Rockwall TX for the Texas Municipal League (TML) who handles our workers' compensation insurance policy (along with all of our other District insurances, excluding health policies)	This audit uses completely separate figures than the usual and customary District quarterly figures. This audit uses calendar year (tax) quarters so it requires a separate assessment. This audit is done by Gary Goforth. This is completed via telephone calls, which is customary and usual.
Audit Specific - MD&A	DCW	9/7/2018	Preparing the Management Discussion and Analysis, a required component of the audit report.	The MD&A is a very important part of the audit report. It provides an overview of the previous year of operations, contains useful information, and touches on the upcoming year and future projects.
Audit Specific - Montemayor	DCW	9/7/2018	Currently preparing for the annual financial audit which includes closing the books for FY 2018, among many other tasks.	Expect to begin the audit in some time in October.
Budget for FY 2019	DCW	9/7/2018	Initial FY 2019 Budget and Fee Schedule	Proposed budget 2019 version was presented to the Board August 9th, and approved. Now is posted on District website.
Conservation Credits Analysis, and Overpumpage	SD	9/7/2018	Analysis in process.	Currently organizing late fees and late meter readings for the past fiscal year. This analysis is not completed until late late September/early October after the August meter readings have been received which is in September (due on the 1st but not all are submitted on time).
Election General - November 2018	DCW	9/7/2018	CANCEL Directors - General Election November 6, 2018	Since our directors for precincts 2 and 5 have no opposition, we will be cancelling the election at the board meeting.

	Leader, Staff	Date	PROJECT / ACTIVITY DESCRIPTION	STATUS/COMMENTS
End-of-Year File Packaging and Creation of New Files	TR/SD/DCW	9/7/2018	Annual formality.	Year-end tasks in preparation of records retention, and also the annual financial audit.
Financial Reporting - Website	DCW	9/7/2018	Most current, available financial reports to be posted.	Balance Sheet, Profit and Loss Statements, and Check Registers through July 2018 have been posted on the District website.
Travis County LA	DCW	9/7/2018	Creating tracking spreadsheet for labor and in-kind support.	
TEXpers Annual Membership	DCW	9/7/2018	TEXpers renewal (Texas Association of Public Employee Retirement Systems)	Renewal amount is based on assets, specifically the total market value of our retirement funds which include 3 main categories (guaranteed contracts once known as short-term investments, mutual funds/equity, and mutual funds/fixed income) for a total investment amount/market value. Currently in process. (Dues usually run less than \$20.)
REGULATORY COMPLIANCE TEAM <i>Vanessa Escobar</i>				
Grage Tract	KBE, VE	9/6/2018	Well Drilling Authorization	Grage Tract LP has submitted two well drilling authorization applications for two additional new wells to be drilled on their property to further assess the production capabilities and water quality of the Lower Trinity Aquifer. These applications are administratively complete as of 8/31/18. Notice was published on 9/4/18 and the comment period will end on 9/24/18. A public hearing is to be scheduled for the 9/27/18 Board Meeting.
Rutherford North	KBE, VE	9/6/2018	Test Well Permit	Giles Water Resources Corp submitted two test well applications for the Rutherford North property. They are requesting to drill one middle Trinity and one Lower Trinity well to assess the production capabilities and water quality of the formations. Those applications are under review. Staff met with the consultant hydrogeologist who informed staff that due to complication with Trinity wells, the well would be constructed to final completion and used for monitoring wells after tested. We have asked him to fill out a monitoring well application.
Electro Purification	KBE, VE	9/6/2018	Production Permit	EP has submitted 7 modification applications and 1 production permit application on 7/13/17. The production request is for 912,500,000 million gallons a year (2.5 MGD) to be produced from the Middle Trinity Aquifer for the purposes of Wholesale Public Water Supply. The General Managers Preliminary Finding was sent out of the applicant on 2/20/18. A 90-day external review period was granted to allow the applicant to provide additional required materials such as a compliance monitoring plan for the avoidance of unreasonable impacts. The GM's Position Statement became available on May 20, 2018. The public comment period runs from June 4th - June 25th. The District hosted public information session on June 18, 2018 from 6-8pm at Winberley Community Center. The 20 day comment period closed on June 25th. Staff received more than 300 comments and 12 request for a contested case. On July 12, The Board made a decision to send the matter to SOAH for hearing. The date for the preliminary hearing at SOAH is September 17th 2018. This will be a hearing to decide which parties have standing, and the merit of the application will not be heard at this hearing.

	Leader, Staff	Date	PROJECT / ACTIVITY DESCRIPTION	STATUS/COMMENTS
Needmore Water LLC	KBE, VE	9/6/2018	Conversion of a Temporary Permit to a Regular Permit	Needmore Water LLC is currently a Temporary Permit that has been determined to be administratively complete. Public notice was published on 11/29/16 and comment period closed on 12/19/16. The District received a request for a contested case hearing from both the applicant and TESPA. TESPA requested the hearing to go before the State Office of Administrative Hearings (SOAH). BSEACD Board decided that the preliminary hearing to determine party status will be heard by SOAH. The General Manager has provided a Preliminary Decision with recommended Special Provisions, and a Technical Evaluation, that is available on the website www.bseacd.org. A preliminary hearing on party standing was held on 7/31/17 at SOAH. TESPA was granted party status. An initial hearing on the merits of the permit application took place March 5th 2018. As of 6/7/18 the ALJ has ruled in the pending Needmore matter granting Needmore's Motion for Summary Disposition and denying TESPA's motion. The ALJ agreed with Needmore on this point and concluded there are no issues to consider in the SOAH proceeding. The July hearing was cancelled and the ALJ drafted a proposal for decision. The parties requested the ALJ to further clarify the PFD and provide a recommendation on the merits of the application. A public hearing on the application is anticipated to be on the agenda for the 10/25/18 Board meeting, but is contingent on the ALJ's revised PFD.
ASR Rulemaking	KBE, VE	9/6/2018	Rule Making/Technical Workgroup	The Regulatory staff and Aquifer Science staff held a technical workgroup meeting in early December 2017. This meeting was a discussion amongst technical ASR experts, interested ASR users, and District Technical staff. The discussion was focused on regulatory and permitting concepts along with a brief update on current ASR activity within the District. The workshop notes and summary are coming together; staff will provide an update to the Board subcommittee on 9/13/18 Board Meeting.
SH45 SW/ Mopac Intersections	KBE, VE	9/6/2018	Consent Decree/Roadway Projects	Next Site inspection: Distinct staff is coordinating with TxDOT staff on regular visits to the Mopacs project site for geologic inspections. The District's consultant (Dave Fowler) along with staff are looking into scheduling a roadway inspection in mid-September.
Database Development	KBE, VE	9/6/2018	Intera Contract - Database Development	Intera is providing biweekly updates and status reports on their progress. They are currently in the design/prototype phase where the look and feel is still being developed. Intera had a meeting with District staff to discuss the alpha version and has scheduled followup meetings with individual teams over the recent months. To ensure that the project is moving forward in a timely fashion, there is a weekly progress report conference call that staff has with the contractor and various action items are continuously discussed.
General Manager Approved Permits	KBE, VE	9/6/2018	Individual Permits < 2,000,000 gal/yr	Staff received an application for an irrigation well (Matthew Shoeborg). The application is under review.
Limited Production Permits (LPPs)	KBE, VE	9/6/2018	Nonexempt Domestic Wells - Annual Meter Readings	Annual meter readings are due by September 5th of each year. Staff has been working on processing those incoming reports and is working to improve the response rate from these permittees.
Drought Stage- No-Drought	KBE, VE	9/6/2018	Drought Compliance Monitoring and Enforcement	Alarm Stage Drought was declared on July 12, 2018 and curtailments become effective on August 1, 2018. Letters and emails to all permittees have been sent out for notification of drought. Staff has been assisting permittees as they call in with questions related to drought curtailment requirements.

	Leader, Staff	Date	PROJECT / ACTIVITY DESCRIPTION	STATUS/COMMENTS
EDUCATION & OUTREACH TEAM				
Drought well water level issues	All staff	9/7/18	Water Conservation and Water Quality Protection https://bseacd.org/education/water-conservation/	Staff have received several reports of well issues and have investigated each case. Reports are coming from the western portion of the new territory. With lower water levels and high water use (summer irrigation), shallow wells with no storage tanks can have yield issues. Staff have repeated site visits to wells that have previous water levels on record to compare water levels then and now and investigate localized impacts. Additional research to generate a cross-section from available geophysical logs and known well construction in the southwestern portion of the Shared Territory was compared to observed water levels. An eNews article and direct communication with well owners in the area have reinforced the benefits of storage tanks for low yielding wells and the neighborhood-level coordination of water use during droughts.
Travis County ILA	RG, LC, BH, JV, BAS	9/7/18	Data processing and program prep	Travis County ILA: Data compilation has begun for the focus area. Data downloads, extraction, and processing have been the main tasks. Staff have been working to georeference newly available geology datasets, extract water level data from the TWDB GW database, generate a planning map for a fall Travis County Neighborhood Site Visit campaign, and compile geophysical logs and well completion info for a cross section.
Augmented Reality Water Quality Teaching Tool	RG	9/7/18	Benthic macroinvertebrates	Phase II of the augmented reality water quality indicator game is nearly complete. Aquatic and riparian habitat cards include native vegetation examples, an aquifer habitat card was added, and final layout of updated animal graphics is complete. Demo decks have been received and the augmented reality application is being refined. The decks will be available to the public for purchase through The Game Crafters website and we'll be able to purchase through a wholesale option. A demo of the game to the Board will be in the near future!
Cave Sim	RG, JV	9/7/18	Potential collaboration on education trailer	As part of Austin Cave Festival, the Colorado-based company, Cave Sim, brought their educational cave trailer. The trailer has cave passages equipped with sensors on "sensitive features" to teach about caves, habitat, recharge, and cultural heritage. Since Cave Festival, several groups have met to discuss the potential of having an Austin-based version that highlights the Central Texas groundwater resources, cave species, and development challenges. The Water Quality Protection Lands program has scheduled CaveSim for their 20th anniversary celebration on Saturday, Oct. 6 and the District is sponsoring a visit to Dahlstrom Middle School on Tuesday, Oct. 9--attending either of these days would be a great opportunity to see the educational trailer in action. I hope to see you there!
eNews	RG, all staff	9/7/18	August edition	The August edition of the eNews was released on August 31st. It was viewed 1137 times. There continues to be significant increases in new subscribers; 105 people subscribed in the month of August. Articles included teacher wish list supplies info, Trinity Aquifer trends, Travis Co Groundwater Study info, Habitat Conservation Plan Update, ET SOAH Hearing confirmation, Annual Meter Reading Reminder for LPPs, and Director Elections Details.
Internet Traffic Report	RG, JV	9/7/18	Page views and visits to the District Website	The District website had 4,527 total page views by 3,521 unique sessions--increase from last month. Top sites in order of number of views are the home page (1,390), Drought Status (327), Maps (190), Staff (151), Regulatory Well Owner Info (130), and About The Aquifers (113). The District Facebook page now has 712 (up 9 from last month) 'Likes' and responses to posts have been very positive. The most popular FB posts were about tracking rainfall and creek flow (650 views), proper disposal of harmful waste (527 views), and Protect Your Groundwater Day (111 views).
AQUIFER SCIENCE TEAM				
Dye Tracing	BS, BH, JC	9/6/18	Dye tracing	Technical summaries of the recent Onion Creek (contributing zone) are completed. A technical summary of the dye trace to Jacob's Well Spring is pending.

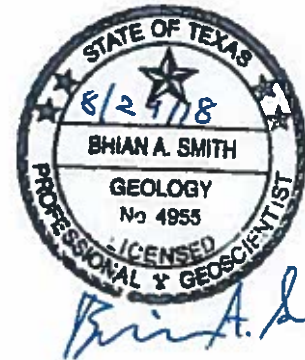
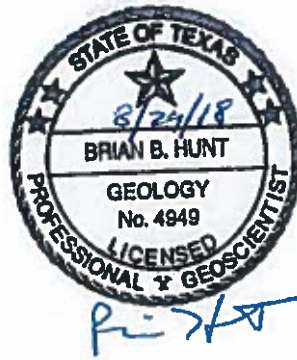
	Leader, Staff	Date	PROJECT / ACTIVITY DESCRIPTION	STATUS/COMMENTS
Central Hays County Groundwater Evaluation	BH, BS, JC	9/6/18	Well and hydrogeology characterization	AS staff have prepared a technical memo stating that there is a potential for unreasonable impacts from pumping of the EP wells at the requested permit amount. Testing of the multipoint well in Rolling Oaks is continuing as well as continued work enhancing the monitor well network in the EP area.
Antioch Cave	BS, BH, JC	9/6/18	Union Creek Recharge Enhancement Project	New equipment to control the Antioch valve were installed in March 2017. A new flow meter was installed in March 2018. The vault functioned as designed during the March 2018 rain event.
Water-Quality Studies	BS, BH, JC	9/6/18	Sampling and analysis of groundwater and surface water	District staff have been collecting groundwater samples for several projects including for the TWDB and the Ruby Ranch ASK pilot project.
Saline Zone Studies	BS, BH	9/6/18	Saline Zone report for TWDB grant	Carollo Engineers completed a draft final report for the RFP grant, which was submitted in TWDB on October 31. Aquifer Science staff completed a report of the multipoint well testing and sampling that is a part of the RFP grant report. A final stakeholder meeting was held on November 28. The final report was submitted to the TWDB and is available on the HSEACD website. The final report was accepted by TWDB in March.
Drought and Water-Level Monitoring	BH, BS, JC	9/6/18	Drought status, monitor wells, and synoptic water level events	On July 12, the District's Board of Directors declared Stage II Alarm Drought. On 9/6/18, the Lovelady well had a level of 471.4, and flow at Barton Springs was 28 cfs.
Information Transfer	BS, BH, JC	9/6/18	Presentations, conferences, reports, and publications	Aquifer Science staff have completed and submitted for review two draft chapters about the Barton Springs segment for a memoir (book) about the Edwards Aquifer to be published in the Fall of 2018. Two abstracts have been accepted for the annual GSA meeting in Indianapolis.
Aquifer Testing	BS, BH, JC	9/6/18	Planning, participation, and review of aquifer tests	EP aquifer testing finished in January 2017. District staff received an application and hydrogeologic report from EP. Staff completed a technical review of EP's production application and produced three technical memos.
Travis County ILA	BS, BH, JC, RG, LC, JV	9/6/18	Hydrogeologic Atlas of Western Travis County	Travis County approved the ILA on 7/3/18 to contribute to studies producing databases and publications characterizing the hydrogeology of Western Travis County.
AD HOC TEAMS				
Technical Team	BAS	9/6/18	Current areas of discussion	Topics of discussion at the technical team meeting in September were drought status, water-level monitoring, Travis County studies, EP hearing schedule, and annual report.
Planning Team	ARM	9/7/2018	Strategic and tactical planning and discussion topics	Meetings held August 14 and September 6.
UPCOMING ITEMS OF INTEREST				
TWCA Groundwater Committee		9/7/2018		
Meeting with COA on HCP implementation		9/7/2018		
Group Health Insurance annual review		9/11/2018		
IT/GCD/BSEACD monitoring collaboration				
HCP Permit Signing Celebration with USFWS officials		9/20/2018	At Wildflower Center 4 pm to 6 pm.	
Hill Country Leadership Summit		9/27/2018		
Regional WQ Planning Group meeting		9/28/2018		
Colorado River Alliance luncheon with Lyle Larsen		10/1/2018		
City of Austin Water Utility - WQ Protection Lands 20th Anniversary Celebration		10/6/2018		
Board Meeting		9/13/18		
Board Meeting		9/27/2018		



Is the BSEACD’s Drought Trigger Methodology Representative of the Middle Trinity Aquifer?

Technical Memo 2018-0829
August 2018

Brian B. Hunt, P.G., Brian A. Smith, Ph.D., P.G.,
and Justin Camp
Barton Springs/Edwards Aquifer Conservation
District



Abstract

Increased drilling and permit requests in the Middle Trinity Aquifer have highlighted the need for increased data collection and evaluation to better manage this limited resource. The purpose of this study is to evaluate the representativeness of the Barton Springs/Edwards Aquifer Conservation District’s (BSEACD) drought trigger methodology (DTM) for the Middle Trinity Aquifer, which relies on indices from the Edwards Aquifer. We reviewed available hydrologic data (streamflow, rainfall), regional drought indices (PHDI, US Drought Monitor), and Middle Trinity water-level elevations of the BSEACD and Hays Trinity Groundwater Conservation District (HTGCD) monitor wells for the period of 2008-2017. These data were compared and correlated to the current DTM used for all aquifers in the BSEACD. We conclude that the BSEACD drought indices reflect regional hydrologic responses to climatic events, and consequently have a good correlation to water levels within the Edwards and Middle Trinity Aquifers. It is our recommendation that the current DTM continue to function as the primary mechanism for making BSEACD drought declarations for all aquifers in the BSEACD.

Introduction

A statutory mandate charges the Barton Springs/Edwards Aquifer Conservation District (BSEACD) with the responsibility of conserving, protecting, and enhancing all groundwater resources within the BSEACD. A drought-trigger methodology (DTM) is an important tool to achieve this goal and ensure drought-management measures are implemented in an effective fashion. The current DTM is described in Smith et al. (2013) and is the basis for the current drought-management policy. Although developed specifically for the Edwards Aquifer, the DTM reflects regional hydrologic responses to drought and consequently was reported to have a good correlation to the Middle Trinity Aquifer in the area (Smith et al., 2013). However, the Middle Trinity Aquifer is increasingly being targeted for groundwater production, and is no longer viewed as an “alternative water supply,” but rather one of the primary aquifers. Thus, it is reasonable to investigate if the current DTM is also representative of hydrologic conditions within the Middle Trinity Aquifer. The purpose of this study is to compile hydrologic data and to evaluate the representativeness of the current DTM to hydrologic conditions observed in the Middle Trinity Aquifer in the study area (Figure 1).

Drought Trigger Methodology

Smith et al., (2013) developed a DTM that utilizes flow from Barton Springs and water levels in the Lovelady monitor well to indicate overall storage and drought status of the Barton Springs aquifer segment of the Edwards Aquifer. The DTM satisfies the guiding principles of: 1) drought declarations can be made with sufficient time to achieve benefits of curtailment and education measures, 2) representative of aquifer-wide conditions, and 3) simple to implement. The BSEACD has six drought stages from non-drought to Stage V Exceptional. At present, historic Edwards and Trinity production permits can be curtailed up to 50% and 30%, respectively.

The Hays Trinity Groundwater Conservation District (HTGCD), to the west of the BSEACD, has four drought stages spanning no drought to Stage IV Emergency. The HTGCD drought management approach consists of a northern and southern region with indices that are based upon river flow rates in the Pedernales and Blanco Rivers. The Palmer Drought Index is referenced as a third drought trigger (HTGCD, 2018a).

Approach and Data Sources

Table 1 provides an inventory of Middle Trinity monitor wells with water-level data from the period of 2008 through 2017. The data were obtained from the HTGCD (HTGCD, 2018b) and the BSEACD (unpublished data). Although Table 1 provides a relatively comprehensive list of Middle Trinity monitor wells in the vicinity with historic data, some were not suitable for inclusion in the evaluation due to their relatively short period of record, sparse data, or questions about the well completion (such as hybrid completions).

Hydrologic data included in the evaluation were: 1) Blanco River at Ranch Road 12 (USGS, 2018); 2) precipitation from Austin's Camp Mabry (NOAA, 2018a); 3) the Palmer Hydrologic Drought Indices for South-Central Texas (NOAA, 2018b); and 4) the US Drought Monitor for Hays County as a percentage of area and drought stage (USDM, 2018).

All data sets were compiled in Microsoft (MS) Excel and then imported into a MS Access database. The data were compiled into multivariate hydrographs for qualitative evaluation. Queries were developed to match data with the same dates from datasets. Those corresponding data sets were then evaluated as scatter plots in MS Excel and fitted with linear-regression trend lines to give a quantitative measure of correlation. The R-squared value recorded is a statistical measure of how close the data are to the fitted regression line. In general, the higher (closer to 1) the R-squared value, the better the linear-regression model explains the data. For this study we assume that R-squared values greater than 0.5 are a good fit of the data to the model.

Results

Figure 2 is a hydrograph showing a variety of data sets from 2008 through 2017. There is a good qualitative correlation from the hydrological indicators and drought indices (lower part of the graph) to select water-level hydrographs of the Middle Trinity and Edwards Aquifers.

Figure 3 is a hydrograph showing select Middle Trinity monitor wells and the Edwards Aquifer drought index well relative to the droughts as indicated by the US Drought Monitor. Hydrographs from the Middle Trinity and the Edwards Aquifers appear to qualitatively correlate very well with each other and drought.

Figures 4-7 are select scatter plots of data with a best-fit linear-regression line. Table 2 provides a summary of R-squared from a variety of hydrologic data from the period of 2008-2017.

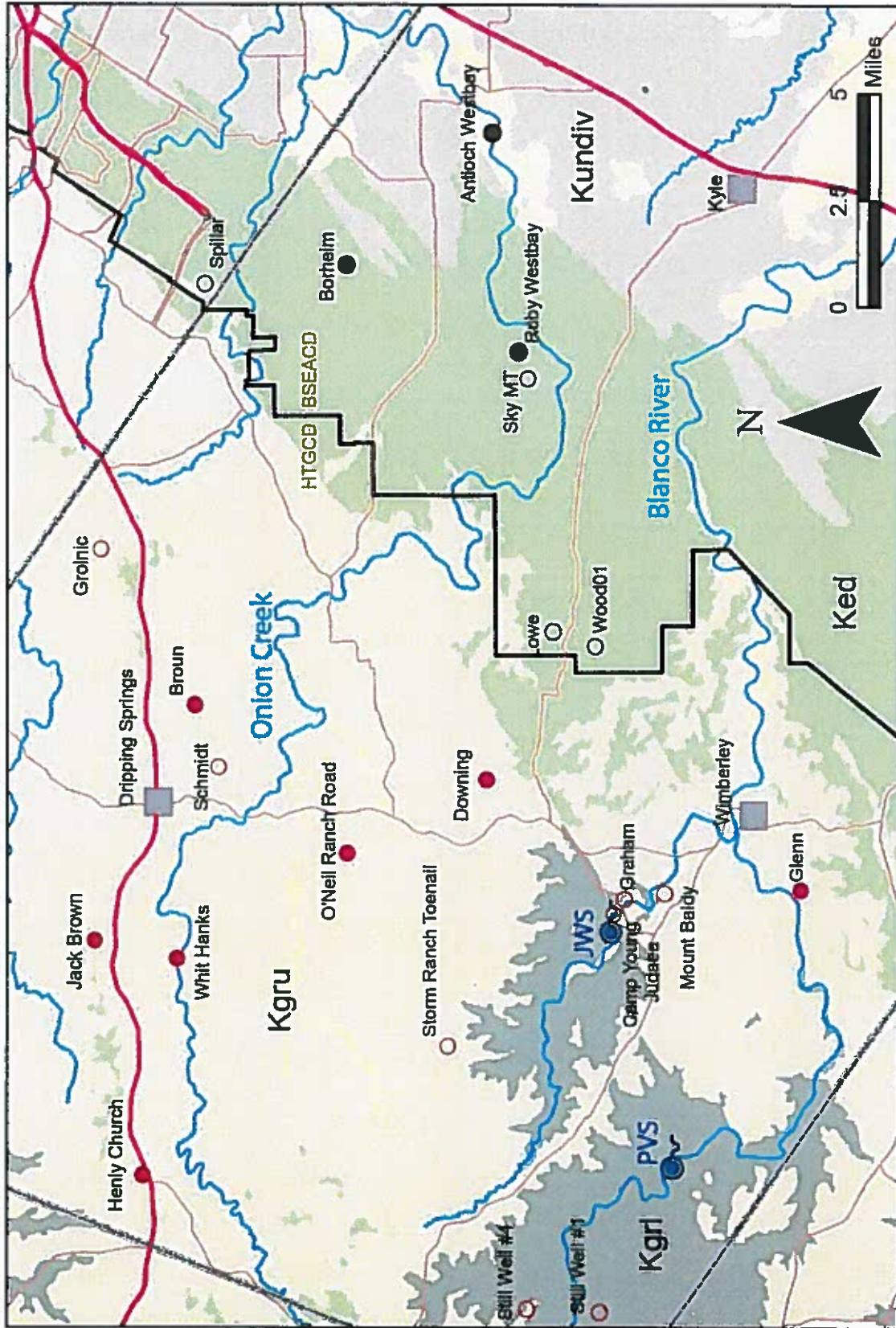
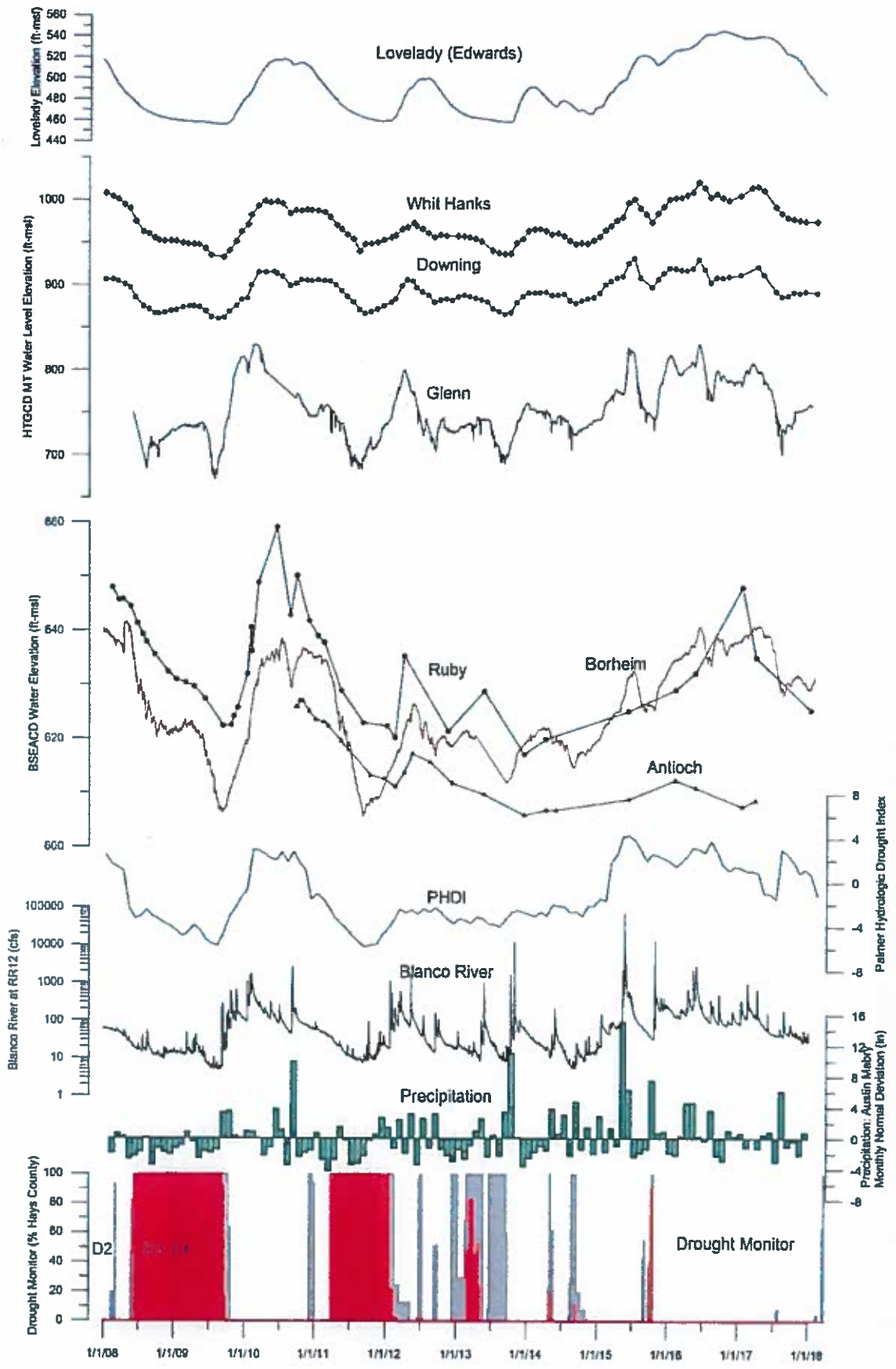


Figure 1. Location and geologic map of the study area showing selected Middle Trinity monitor wells evaluated in this study. Red circles indicate HTGCD monitor wells, while black circles represent BSEACD wells. Filled in circles represent wells evaluated in this study (Table 1). The Edwards Lovelady well is located just off the northeast corner of the map. Ked=Edwards, Kgru= Upper Glen Rose, Kgr1= Lower Glen Rose.

Table 1. Monitor wells in the study area

Name	SWN	Ddlat	Ddlong	LSD (ft.-msl)	GCD	Depth (ft)	Period_of_Record	Strata	County	Data	Comment
Brown	5756519	30.0278330	-98.0533330	1118	HTGCD	280	7/1/2005	Mid Trin	Hays	monthly	
Camp Young Judaea	5764714	30.029480	-98.118800	955	HTGCD	250	7/1/2005	Mid Trin	Hays	monthly	
Downtown	5764502	30.077500	-98.078330	1218	HTGCD	600	1/1/2003	Mid Trin	Hays	daily	TWDB telemetry well
Graham	5764716	30.033330	-98.123890	964	HTGCD	153	10/1/2005	Kcc	Hays	daily	transducer; daily data
Groble	5756505	30.210830	-98.000550	1178	HTGCD	450	12/1/2001	Kgrl	Hays	monthly	
Henly Church	5755401	30.196110	-98.212500	1326	HTGCD	460	1/1/1999	Kcc	Hays	monthly	
Shipton Well	5755405	30.196645	-98.22431	1362	HTGCD	506	1/31/2018	Kcc	Hays	daily	TWDB telemetry well
Jack Brown	5755301	30.212780	-98.133060	1309	HTGCD	510	3/1/2003	Kcc	Hays	monthly	
Mount Baldy	5764705	30.015830	-98.116940	939	HTGCD	400	3/1/1999	Mid Trin	Hays	daily	TWDB telemetry well
Still Well #1 - WH	5762901	30.038060	-98.258630	1079	HTGCD	135	1/1/2006	Kgrl	Hays	monthly	
Still Well #4 -1st WM	5762602	30.063610	-98.257500	1203	HTGCD	240	1/1/2006	Mid Trin	Hays	monthly	
Whit Hanks	5755607	30.184440	-98.139170	1128	HTGCD	372	10/1/2002	Mid Trin	Hays	daily	TWDB telemetry well
Glenn	6808107	29.968783	-98.115626	1080	HTGCD	680	8/5/2008	Mid Trin	Hays	daily	HTGCD transducer
O'Neill Ranch Road	5756710	30.125833	-98.103333	1193	HTGCD	420	12/15/2007	Mid Trin	Hays	monthly	
Drilling Springs WSG	5756702	30.154166	-98.08611	1030	HTGCD		1/28/2015	Kcc	Hays	daily	TWDB telemetry well
Ruby Westbay	5857513	30.066667	-97.933334	815	BSEACD	1120	2/15/2008	Kcc	Hays	quarterly	Multiport well
Antioch Westbay	5858431	30.075833	-97.859167	702	BSEACD	1375	9/25/2010	Kcc	Hays	quarterly	Multiport Well; short POR
Lowe	5764607	30.054833	-98.028209	1069	BSEACD	860	6/10/2015	Kcc	Hays	daily	BSEACD transducer; short POR
Wood01	5764307	30.039986	-98.033022	1067	BSEACD	790	1/28/2015	Kcc, Kgrl	Hays	daily	BSEACD transducer; short POR
Sky Ranch MT	5857507	30.063580	-97.942519	837	BSEACD	1000	11/9/2012	Kcc	Hays	daily	BSEACD transducer; short POR
Bohlein Trinity	5849925	30.125940	-97.903820	786	BSEACD	1000	1/30/2002	Kcc, Kgrl, Kgru?	Hays	daily	BSEACD transducer
Spillar	5849615	30.175032	-97.910404	985	BSEACD	1210	4/23/2013	Kcc, Kgrl, Kgru/Ked?	Travis	daily	BSEACD transducer; Ked communication likely

Figure 2.
Hydrograph
from 2008
through 2017.
Drought
stages
indicated as
D2-D4.



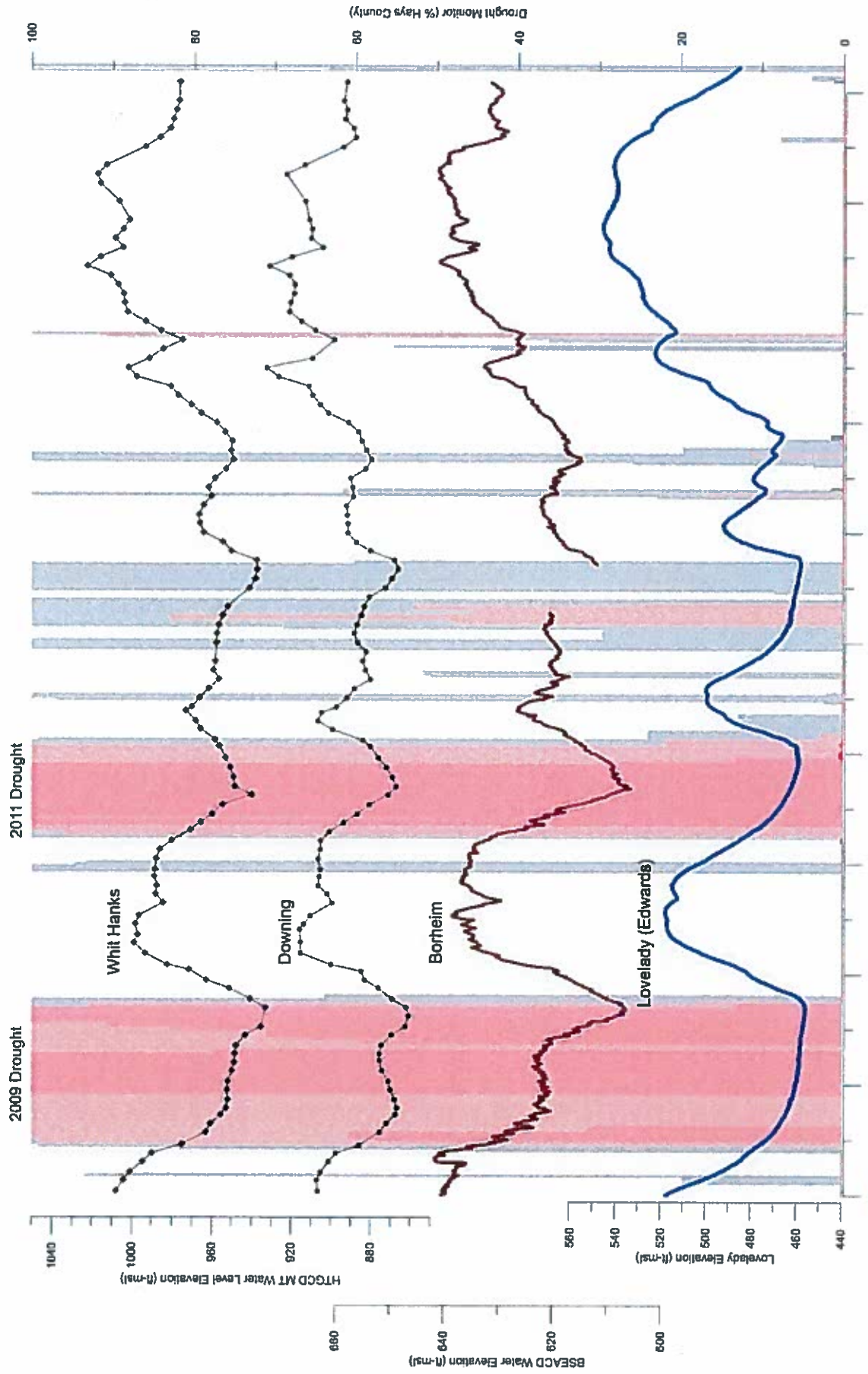


Figure 3. Hydrograph showing select Middle Trinity monitor wells and the Edwards Aquifer drought index well relative to the droughts as indicated by the colored US Drought Monitor stages. Drought stages are indicated as D2 (grey), D3 (orange), and D4 (red).

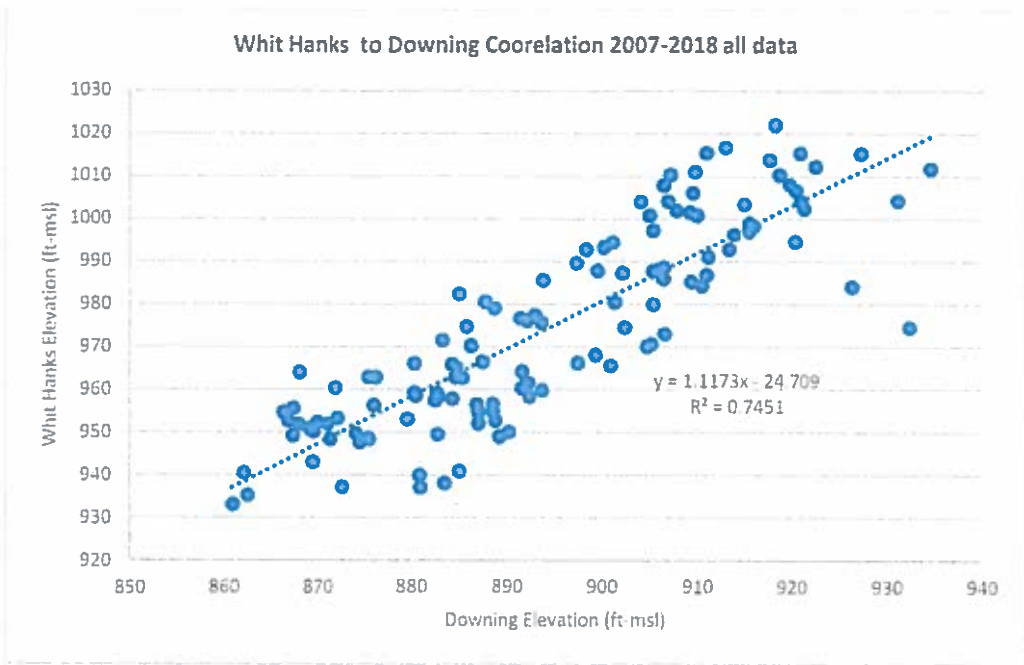


Figure 4. Correlation of water level elevations in the HTGCD Middle Trinity Whit Hanks and Downing monitor wells. Data are monthly measurements from 2008 through 2017. There is an overall good correlation between the data of $R^2 = 0.75$.

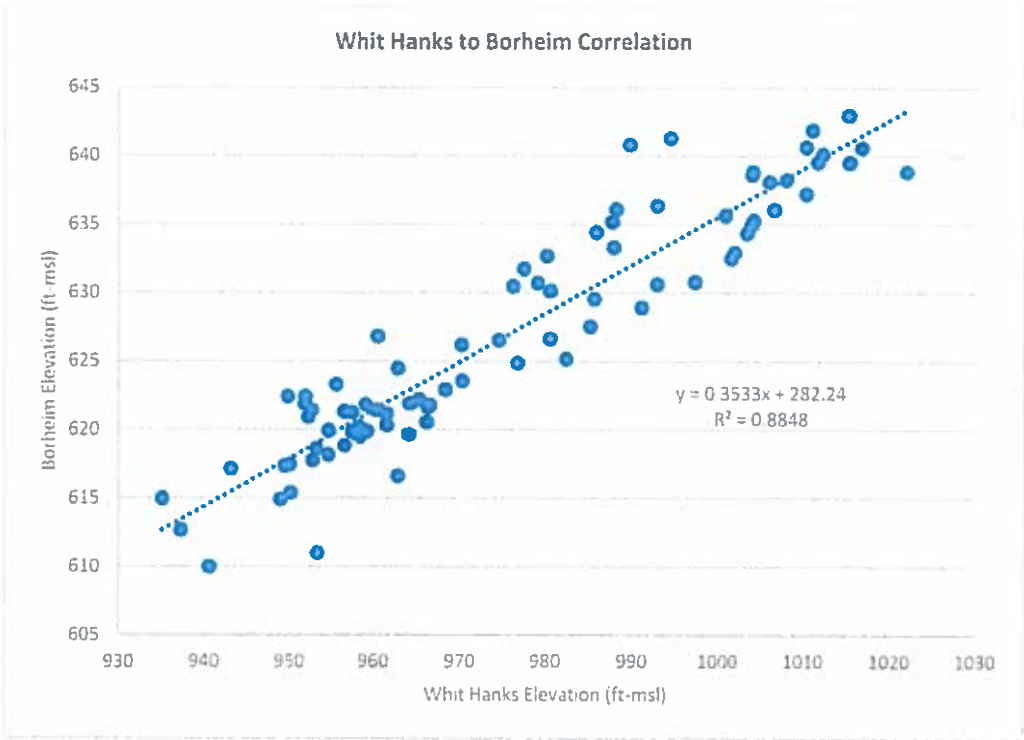


Figure 5. Correlation of water-level elevations in the Middle Trinity BSEACD Borheim well to the Middle Trinity HTGCD Whit Hanks well. Data are monthly measurements from 2008 through 2017. There is an overall good correlation between the data of $R^2 = 0.88$. The Downing well also had a good correlation of $R^2 = 0.66$.

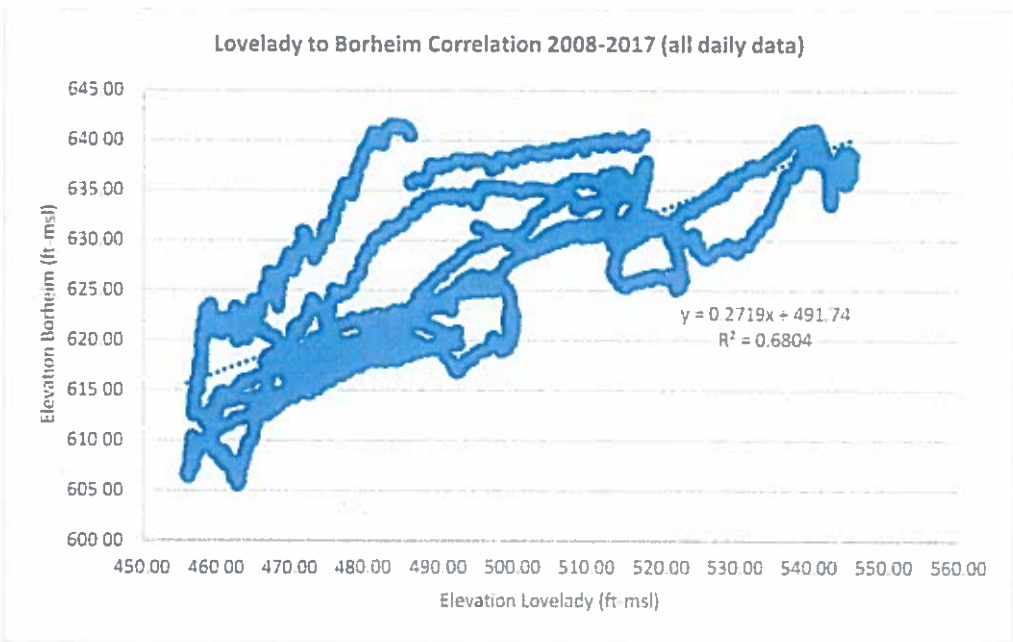


Figure 6. Correlation of water-level elevations in the Edwards Aquifer Lovelady drought trigger monitor well and the Middle Trinity Borheim well. Data represents daily frequency from pressure transducers. There is an overall good correlation of $R^2= 0.68$. The correlation improves to $R^2=0.73$ during Stage IV drought conditions (below 457.1 ft-msl in the Lovelady).

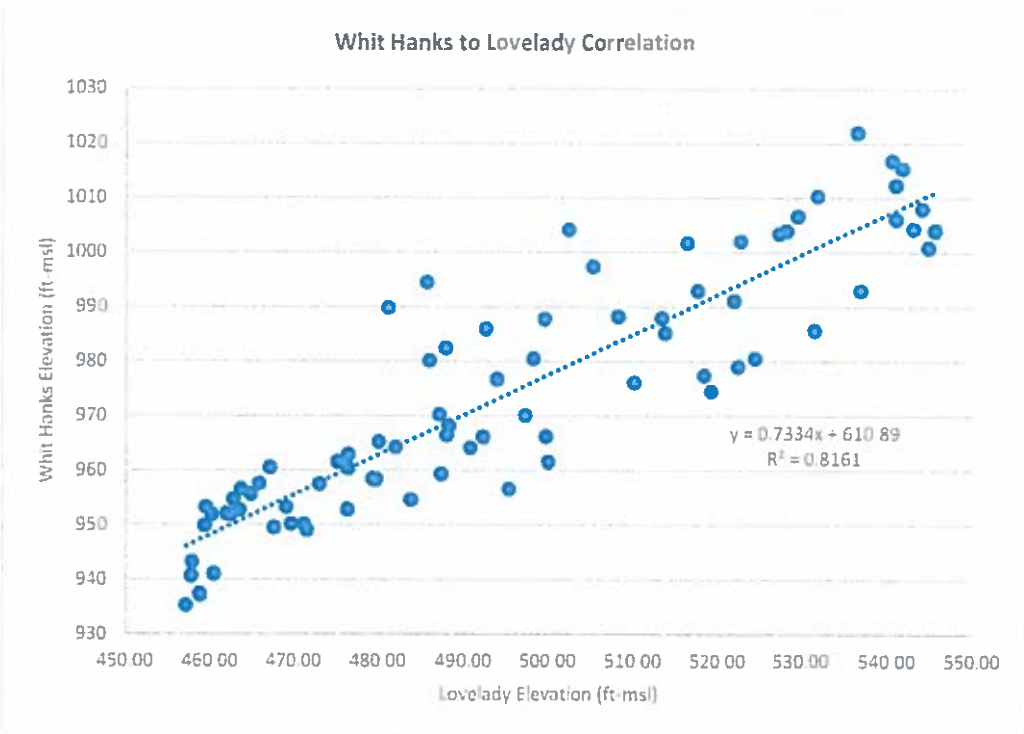


Figure 7. Correlation of water-level elevations in the BSEACD Edwards Aquifer Lovelady drought trigger monitor well and the HTGCD Middle Trinity Whit Hanks well. There is an overall good correlation between the data $R^2= 0.82$.

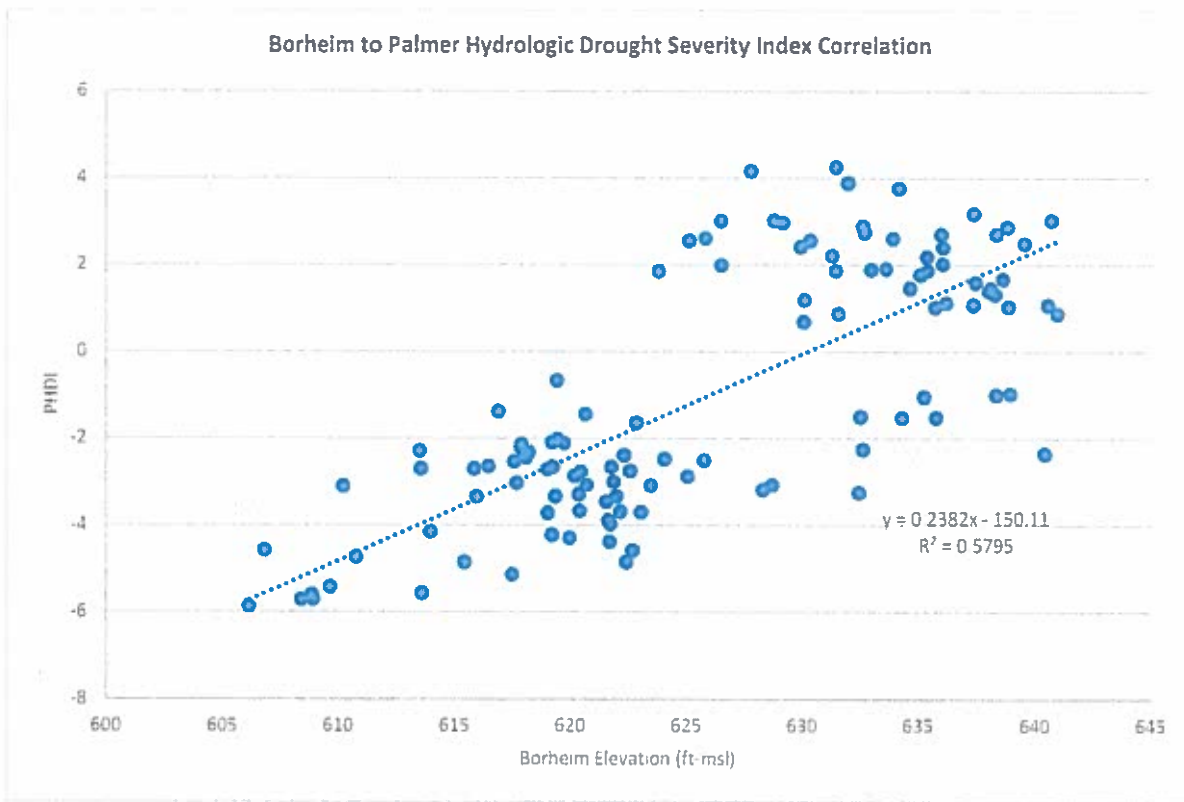


Figure 8. Correlation of water level elevations in the Middle Trinity Borheim well to the Palmer Drought Severity Indices (PHDI). There is an overall good correlation between the data of $R^2=0.58$. Positive PHDI indicates wet (non-drought) conditions. The Lovelady monitor well has a correlation to the PHDI of $R^2=0.69$.

Table 2. Summary of R^2 data correlations from the period of 2008-2017. Number of data indicated in parenthesis. A value of > 0.5 is considered a good correlation for this study and highlighted in blue.

	PHDI	Lovelady	Borheim	Whit Hanks	Downing	Glenn	Lowe**	Woods01**	Sky MT	Spillar	Ruby Westbay
PHDI	1										
Lovelady	0.69 (116)	1									
Borheim	0.58 (115)	0.68 (3685); 0.73 (86)*	1								
Whit Hanks	NA	0.82 (82)	0.88 (89)	1							
Downing	NA	0.62 (82)	0.66 (128)	0.75 (128)	1						
Glenn	0.54 (108)	0.43 (3119)	0.42 (3252)	0.61 (102)	0.68 (103)	1					
Lowe	NA	NA	0.37 (870)	NA	NA	NA	1				
Woods01	NA	NA	0.33 (821)	NA	NA	NA	0.26 (685)	1			
Sky MT	0.60 (23)	0.94 (616)	0.91 (548)	0.86 (19)	0.47 (21)	0.44 (710)	NA	NA	1		
Spillar	0.56 (50)	0.72 (1465)	0.81 (1388)	0.85 (48)	0.86 (46)	0.83 (1495)	NA	NA		1	
Ruby Westbay	NA	0.24 (41)	0.55 (42)	NA	NA	0.08 (34)	NA	NA	NA	0.33 (8)	1
Antioch Westbay	NA	NA	0.16 (24)	NA	NA	NA	NA	NA	NA	0.71 (487)	0.34 (18)

*Below 457.1 ft-msl, Stage IV at Lovelady; **short period of record, influenced by EP aquifer testing; NA= Not analyzed, generally too few data

Discussion

The area west of the Edwards outcrop serves as a recharge zone for the Upper and Middle Trinity Aquifers and as the contributing zone for the Edwards Aquifer. Therefore, rainfall and runoff will have an impact on the Edwards and Trinity Aquifers, as will the lack of rainfall (Hunt et al., 2017).

Despite the heterogeneity in the hydrogeology shown in Figure 1, many of the HTGCD Middle Trinity monitor wells have data with a relatively high degree of correlation to one another across much of the HTGCD, such as the Whit Hanks, Downing, and Glenn wells, among others (Figure 4; Table 2).

There is a demonstrated hydrologic correlation of the Middle Trinity Aquifer in the Hill Country to the Middle Trinity units within the Balcones Fault Zone. Groundwater generally flows west to east within the Middle Trinity in the study area, and structures such as relay ramps between faults may provide lateral continuity of flow (and pressure pulses) into the Balcones Fault Zone and the BSEACD (Hunt et al., 2015). A variety of head, geochemical, and structural data support the lateral hydrologic continuity of the Middle Trinity Aquifer. This is further supported by the similar hydrologic response to wet and dry periods for HTGCD wells in the Hill Country and the BSEACD wells in the Balcones Fault Zone (Figures 3 and 5; Table 2). Although the data support a lateral continuity of flow, the correlation of these confined wells is a pressure response due to regional hydrologic conditions.

Response of the aquifer systems to regional hydrologic changes is well illustrated by the close correlation and similar magnitude of variation of the Middle Trinity wells to the BSEACD (Lovelady) Edwards Aquifer index well (Figures 3, 6 and 7; Table 2). The Edwards Aquifer and the Middle Trinity Aquifer are not in hydrologic communication with each other (e.g. no inter-aquifer communication) in the study area. In fact, studies have shown that these two aquifer systems are (vertically) hydrologically isolated from each other (Smith and Hunt, 2010; Wong et al., 2014; Figure 9). Instead, the strong correlation to one another is the result that both aquifer systems are responding to the same regional hydrologic or climatic conditions such as recharge and drought. This is further illustrated by the correlation of the monitor-well data to regional indices such as the Palmer Hydrologic Drought Index (PHDI, Figure 8; Table 2).

The correlation among the various well data, springs, and drought indices is always not optimal in space and time. Some of the issues in data correlation may be related to sparse data sets and the confounding effects of well completions. In addition, some data discrepancies in correlation of the data may also be related to more localized rainfall and recharge events. Thus, the correlation may be low for the early stages of drought, which are more sensitive to local conditions. The poor correlation ($R^2=0.34$) of the Antioch Multiport well and the Ruby Ranch Multiport well needs to be evaluated further and could be the result of sparse data or perhaps indicate some isolation due to faulting between the two wells.

In summary, when the region experiences severe drought (D4 in Figures 2 and 3), the various data sets from wells appear to be in good correlation no matter their location or aquifer.

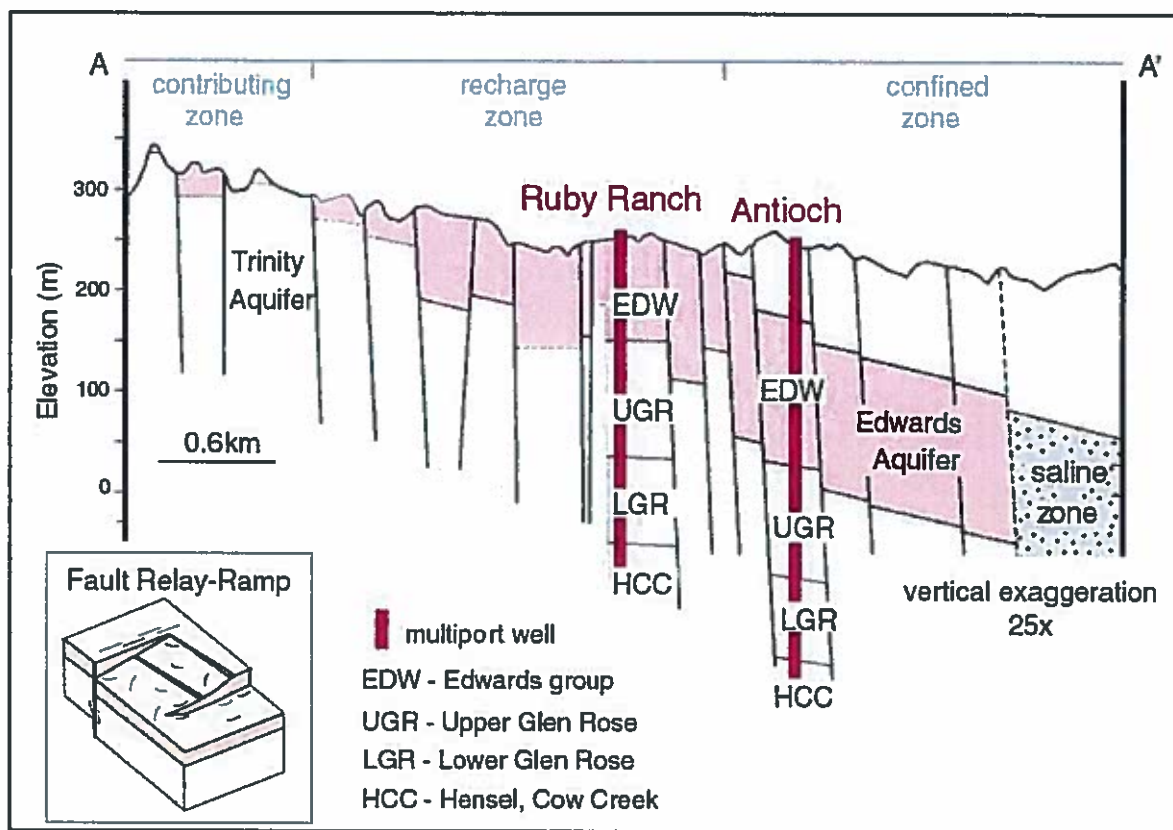


Figure 9. Generalized cross section from west to east showing the location of the Ruby Ranch and Antioch multiport wells (from Wong et al., 2014).

Conclusion

The District's DTM (Smith et al., 2013) reflects regional hydrologic responses to climate and consequently has a good correlation to the Edwards and Middle Trinity Aquifers in the study area. The BSEACD's methodology is therefore representative of the Middle Trinity Aquifer and serves as an overall good indicator of drought for all aquifers in the BSEACD.

Future Work

It is important to continue collecting data and developing new monitor wells throughout the District as the hydrologic conditions can change over time, and pumping from the various aquifers is rapidly increasing. With more data, we may better understand the effects of depletion, interference, and capture within the Trinity Aquifers that may influence future policies, drought determinations and pumpage curtailments.

The Lower Trinity Aquifer was not part of this evaluation. Very little data exists for the Lower Trinity within the BSEACD at this time. It is recommended to identify a potential monitoring well and begin to collect data.

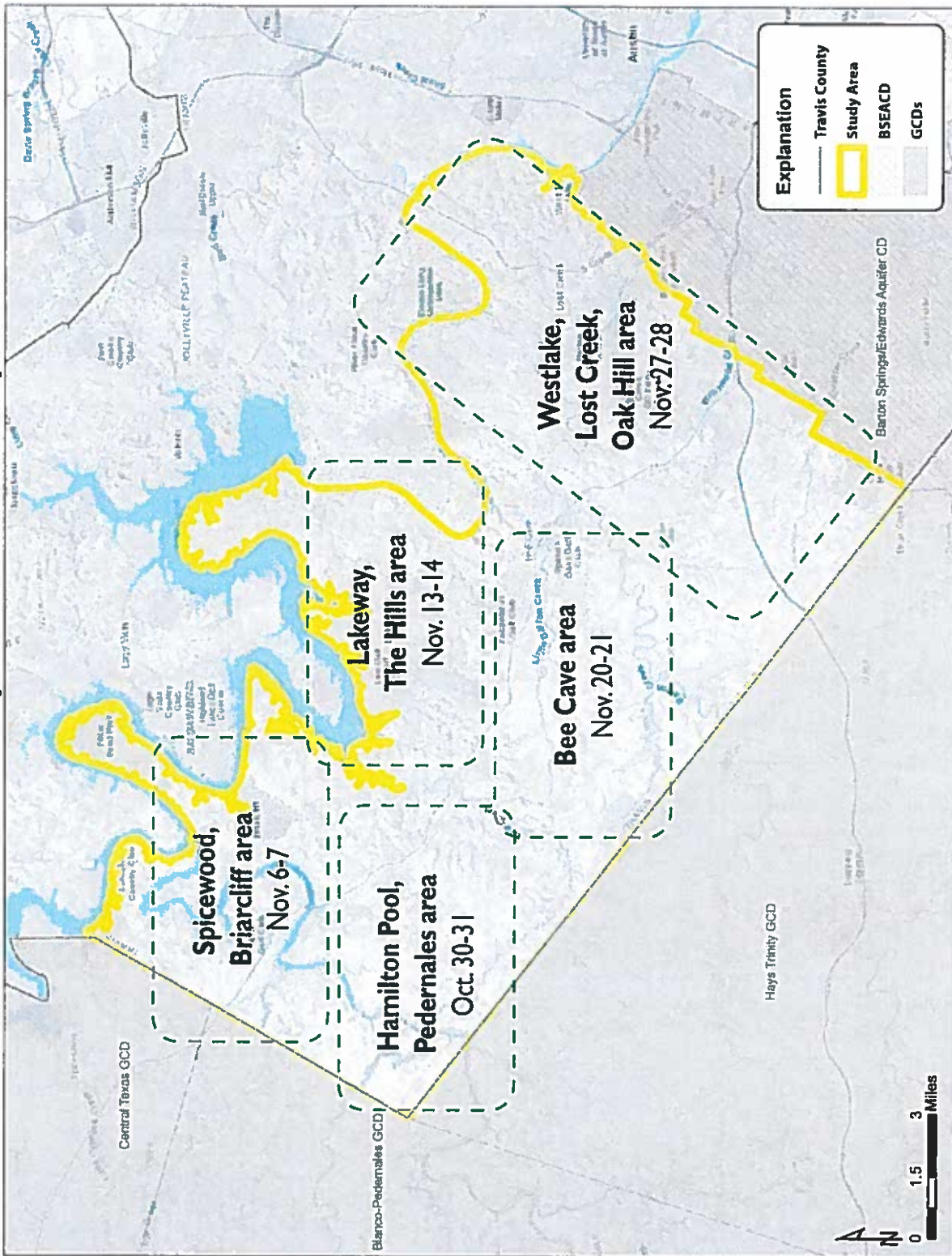
Acknowledgements

We appreciate the review by Jeff Watson, Hydrogeologist for the Hays Trinity Groundwater Conservation District.

References

- (HTGCD) Hays Trinity Groundwater Conservation District, 2018a, District Rules. Effective January 1, 2018. http://haysgroundwater.com/files/Rules/2017_Rules_Final.pdf
- (HTGCD) Hays Trinity Groundwater Conservation District, 2018b, Water Level Monitoring Program. <<http://haysgroundwater.com/monitored-wells-data>>
- Hunt, B.B., B.A. Smith, A. Andrews, D.A. Wierman, A.S. Broun, and M.O. Gary, 2015, Relay ramp structures and their influence on groundwater flow in the Edwards and Trinity Aquifers, Hays and Travis Counties, Central Texas, Sinkhole Conference, October 5-10, 2015, Rochester, Minnesota
- Hunt, B. B., B.A. Smith, M.O. Gary, A.S. Broun, D.A. Wierman, J. Watson, and D.A. Johns, and, 2017, Surface-water and Groundwater Interactions in the Blanco River and Onion Creek Watersheds: Implications for the Trinity and Edwards Aquifers of Central Texas. South Texas Geological Society Bulletin, v. 57, no. 5, January 2017, p. 33-53.
- (NOAA) National Centers for Environmental Information. 2018a, Climate Data Online. <<https://www.ncdc.noaa.gov/cdo-web/>>
- (NOAA) National Centers for Environmental Information. 2018b, Drought Indices and Data <<https://www.ncdc.noaa.gov/temp-and-precip/drought/nadm/indices/palmer/div#select-form>>
- Smith, Brian A. and Brian B. Hunt, 2010, Flow Potential Between Stacked Karst Aquifers in Central Texas: in Advances in Research in Karst Media, eds. B. Andreo, F. Carrasco, J. J. Duran, and J. W. LaMoreaux, 4th International Symposium on Karst, April 26-30, 2010 Malaga, Spain, Springer, pp. 43-48.
- Smith, B.A., B.B. Hunt, W.F. Holland, 2013, Drought Trigger Methodology for the Barton Springs Aquifer, Travis and Hays Counties, Texas, BSEACD Report of Investigations, BSEACD RI 2013-1201, 36 p. + appendices <http://bseacd.org/uploads/Smith-et-al_-2013-BSEACD-Drought-Trigger-Method1.pdf>
- (TWDB) Texas Water Development Board, 2018, Automated Groundwater Level Wells <<https://waterdatafortexas.org/groundwater>>
- (USGS) US Geological Survey, 2018, USGS 08171000 Blanco Rv at Wimberley, TX. https://waterdata.usgs.gov/tx/nwis/uv/?site_no=08171000&agency_cd=USGS&
- (USDM) United States Drought Monitor, 2018, Comprehensive Statistics. <<http://droughtmonitor.unl.edu/Data/DataDownload/ComprehensiveStatistics.aspx>>
- Wong, Corinne I., Kromann, Jenna S., Hunt, Brian B., Smith, Brian A., and Banner, Jay L., 2014, Investigation of Flow Between Trinity and Edwards Aquifers (Central Texas) Using Physical and Geochemical Monitoring in Multiport Wells. Vol. 52, No. 4—Groundwater—July-August 2014 (pages 624–639).

2018 Neighborhood Site Visit Areas Travis County Groundwater Study



Item 4

Board Discussions and Possible Actions

- a. Discussion and possible action related to the District's concepts for Aquifer Storage and Recovery Rules and to direct staff to draft such rules.**

CONCEPTS AND DISCUSSION TOPICS FOR PROPOSED ASR RULES

GENERAL PERMITS – ASR TEST PERMIT

- District will create an ASR Test Permit under General Permits.
 - The ASR Test Permit authorizes a temporary groundwater production volume (if the groundwater is the injection source water and is sourced from within District jurisdiction) for conducting testing (cycle testing, step testing, etc.)
 - Authorization also allows for recovery of test volumes
 - Authorization also includes requirement for accounting of injection and recovery volumes for all sources of injected water.
 - Authorization will expire within specified time period (2 year)
 - Volume shall not exceed 30 million gallons per authorization.
 - Volumes over 10 million gallons will be accessed a production fee (\$0.17/1000 gallons)
 - Variances may be considered (streamline process)
 - One authorization (2 years) per well field.
- Any test that commences shall be allowed to continue or complete testing with fully authorized volume until the District declares Stage 3 Critical Drought. Upon declaring Stage 2 Alarm Drought the applicant will receive notice from the District that any production required for testing must be completed before Critical Stage 3 declaration.
- Recovery of the injected volume (ASR test permit) is allowed during any drought stage. Recovered water shall not be wasted and shall be put to beneficial use if possible, particularly during a declared drought. The applicant is responsible for obtaining required permits and for compliance with all applicable statutes and TCEQ rules associated with the discharge or use of recovered water.
- Permittees with existing alternative sources or permits may inject volumes during any drought stage but will subject to the provisions of that permit.
- Application fee: \$300 plus hourly fee for consultant or work over 80 hrs.
- Provide map of all wells within ½ mile and identify any potential for impacts during testing
- Aquifer Test – reference *Guidelines for Hydrogeologic Reports and Aquifer Testing*. Shall coordinate test and monitoring with District staff.

INDIVIDUAL PERMITS - DRILLING AUTHORIZATIONS AND ASR PRODUCTION PERMITS

Freshwater Edwards Class D Conditional Permit: 2 cfs (472 MG/Y) of fresh Edwards water is available for ASR projects where stored water is recovered and used to supplement or substitute Freshwater Edwards supplies during District-declared drought. Production of Edwards Class D is curtailed 100% during District-declared drought.

- Allow for broader scope of Class D. Provide clarification in rules that streamline the possible applications of ASR and Class D production.
- Allow Class D to be used through Stage 3 Critical Drought with deeper curtailments in Stage 4 and 5 Drought.
- Authorized permit volumes shall be determined based upon factors such as source production well capacity, injection well intake capacity, anticipated injection rates and aquifer storage capacity.
- Hydrogeologic report may be required for Class D production permit.

Additional Withdrawals During High Aquifer Conditions and Alternative Drought Curtailments

- Excess Storage Program – allow the use of Class C Conditional during high times (certain springflow/Lovelady criteria trigger). Program would go into effect if water level/springflow is above

trigger on (date xx) or a rolling average. Permittee could obtain Class C for next FY (streamlined permitting process).

- More Class D in high times (above 2 cfs) if agree to deeper curtailments on Edwards permits during Stage 4 and 5 Drought.

ASR Recovery Well Drilling Application:

- District will create an "ASR Recovery Well Drilling" application and checklist. Checklist will ask for same informational and notice requirements as other individual drilling authorizations (i.e. ownership documents, well design, and well location maps)
- The Recovery Well Drilling Authorization will have ½ mile radius notice requirement.
- Notice and hearing for drilling authorization – allow for hearing but no contested case opportunity.

ASR Operational Permit Application:

- District will create an "ASR Operational Permit" application and checklist. Checklist will ask for:
 - Requested Target Storage Volume and recovery volumes
 - Hydrogeological report requirements will apply for new production wells or volumes
 - Information related to TCEQ authorizations
 - Accounting Plan – description and diagrams
 - Additional detailed checklist items etc.
- ASR Operational Permit will authorize annual volume(s):
 - The production of Fresh Edwards Class D Conditional for the purposes of injection into an ASR system
 - The recovery of a specified volume of stored water
- Unreasonable impact analysis (Hydrogeologic Report required) for injection and recovery.
 - Would need to test for 3 x annual maximum recovery volume
 - Link to all unreasonable impact rules
- Application Fee: Fee will need to be set to cover the cost of staff time and potential contractor review (i.e. may range from \$2,500 – \$3,000). Fee schedule may include hourly rate for over 80 hrs. or consultant review.
- An ASR Operational Permit application will ½ radius notice requirement. Notice shall also be provided to GCDs where source water is derived.

Recovery Amount

- An ASR Operational Permit from the District is required to recover volumes.
- Recoverability analysis will be required per TCEQ and District Rules. A recovery volume will be determined based on this analysis, which shall include details on whether or not the buffer will be preserved in place or withdrawn as part of the operation.
- An ASR permittee will be prohibited from withdrawing more groundwater than the amount injected (all sources) unless they have an active production permit for the native groundwater. An ASR permittee that withdraws more water than injected, is subject to enforcement pursuant District Rule 3-1.3 for groundwater withdraws without a permit.
- A permittee holding an ASR Operational Permit may recover the authorized recovery volume as determined by the recoverability analysis and recovery volume on certificate.
 - May need TSV and maximum annual recovery volume on permit certificate.
 - Recovery volumes may need to be adjusted annually for long-term permits
 - Recoverability analysis may need to be updated or revised after a few years.

- Recovery is not subject to drought curtailments.
- Shall not recover water attributed to natural recharge or floodwater/recharge through improved sinkholes or caves

Permit Certificate – Authorized Volumes and Permit Term

- Proposed Permit term is 1 year (for Class D Production)
- One ASR Operational Permit Certificate
 - Two volumes listed on the permit certificate: 1. Class D production volume (for injection) and 2. Recovery Volume
 - If source water is derived out of District, certificate will reflect only recovery volume

SITE LOCATION

- The District will consider revising the District’s current Rules relating to a 3-mile buffer of the fresh-saline interface. Currently production is only allowed within the three-mile buffer zone of the Saline Edwards Management Zone after some demonstration (test or monitor wells) that the interface will not be impacted.
- A landowner owning the surface property over the “storage radius” owns the water unless ownership has been severed. Therefore, if the storage radius extends beyond ASR permittee property it’s in their interest to have a Wellfield Protection Area agreement with surrounding landowners before approval.
- All ASR wells associated with a single ASR project should be located:
 - Within a continuous perimeter boundary on one parcel or land, or
 - Within two or more adjacent parcels of land under the common ownership, lease, joint operating agreement, or contract

PERMISSIBLE SOURCES OF WATER FOR INJECTION

- ASR projects in the Edwards Aquifer Management Zones and Trinity Aquifer Management Zones (Trinity Aquifer underlying saturated Edwards Aquifer) must comply with TCEQ rules (TAC 331.19, *Injection Into or Through the Edwards Aquifer*).
- For ASR projects not in the Edwards Aquifer Management Zones the injection of water shall comply with the standards set forth under the Federal Safe Drinking Water Act

GROUNDWATER OPTIONS AVAILABLE FOR INJECTION (RECHARGE) STORAGE

- Freshwater Edwards Class D Conditional (i.e. BSEACD Edwards for storage in the Trinity)
 - Class D permits only authorize production during non-drought
 - Maximum of only 2 cfs annually (472 MG/Y) is available for permitting
- Historical Freshwater Edwards (i.e. BSEACD Edwards for storage in the Trinity)
 - This can be produced during drought but production must comply with applicable drought curtailments.
- Non-BSEACD Permitted Edwards (i.e. EAA Edwards stored in Trinity)
 - Must comply with applicable permitting rules and requirements of other GCDs
 - Applicant must provide copies of active permits from other GCDs; subject to those permit conditions

ACCOUNTING AND REPORTING

Metering of ASR Operational Wells.

- All ASR operational wells must be installed with a dedicated meter for measuring the injection and a separate dedicated meter for measuring recovery.
- Digital and bidirectional meters are allowed.

Monthly Reporting.

- An ASR permittee shall submit a monthly meter reading to the District by the 5th of the following month.
- Meter readings shall be submitted for source water produced, water injected (all sources), stored water recovered, and native water produced.

Water Quality Reporting.

- On an annual basis, the ASR permittee is required to perform water quality testing pursuant to TAC 30 331.185 (b).
- Water quality results shall be submitted to the District within 15 days of TCEQ submittal. There may be additional District required constituents for analysis.
- Additional water quality monitoring may be required.

Operations Report.

- Every 5 years after the issuance of an ASR Operational Permit the permittee shall provide the GM with a report that includes:
 - a comparison of project performance with predications submitted with application;
 - a summary of data, information and analyses associated with monitoring during the operation of the project, included water quality, recoverability; and
 - a description of any impacts identified during the operation of the project.

Monitoring Wells.

- Monitoring well(s) will be required for Tier 3 (> 200 M/year) production volumes. The location and completion of the monitoring well(s) shall be coordinated with District staff. For smaller production volumes, additional water quality monitoring may be required in lieu of installing monitoring wells.

WELL CONSTRUCTION STANDARDS FOR ASR OPERATIONAL WELLS

- All ASR Operational wells shall be completed in accordance with TAC 331. 132.
- District Well Construction Standards and any other state, federal, or local requirements that may be more protective.

AMENDMENTS

- Changes to ASR Operational Permit will be considered a minor amendment unless volume increase beyond 20%

FEE SCHEDULE

- ASR Operational application fee will be set to cover cost of District staff time and possible contractor review (i.e. may ranges from \$2,500 – \$3,000). Fee schedule may include hourly rate for over 80 hrs. or consultant review
- Annual production fees (Class D fee currently at \$0.17/ 1,000 gal). Production fee only apply to production of Class D Edwards. No fee for ASR recovery.
- Conservation Credit for Class D or no payment for non-use during drought.

Item 4

Board Discussions and Possible Actions

b. Discussion related to assessment of progress made towards achievement of the District Goals set for FY 2018.

FY 2018 District Goals
Adopted October 12, 2017

Staff Progress Report
September 7, 2018

The following goals were adopted by the Board to guide the District's efforts for Fiscal Year 2018. Each Goal below includes a narrative summary of District activities completed through the fiscal year to demonstrate enough progress toward achievement of a staff assessment of whether each goal was achieved or not.

- 1. Continue to make progress towards ongoing initiatives including: a) preserving and protecting the water quality of recharge to the Edwards and Trinity Aquifers through advocacy for sound wastewater and stormwater management practices, and b) research to progress knowledge of innovative water supply strategies such as desalination, aquifer storage and recovery, and recharge enhancement.**

Lead Team: All Teams

This goal has been achieved.

The following summarizes the work completed in FY 2018 that accomplishes this goal.

a) Advocacy for sound wastewater and stormwater management practices.

Dripping Springs TPDES Permit Application. The staff and the appointed Board committee (Blayne Stansberry and Mary Stone) continued to be active in FY 2018 advocating for permit conditions that are most protective of water quality in Onion Creek which recharges the Trinity and the Edwards Aquifers. Notable activity included:

- Prepared jointly-submitted (BSEACD and HTGCD) comments on the draft permit submitted to TCEQ on November 10, 2017.
- Contributed legal support to the development of draft settlement terms for discussion purposes with other potential protestants and the applicant.
- Participated in numerous meetings with protestants and the applicant to discuss potential settlement terms.

The District requested a contested case and was granted party status after the SOAH preliminary hearing on May 21, 2018. The District, along with multiple other parties, reached a settlement agreement with Dripping Springs. Therefore, the District filed a motion to withdraw as a party to the contested case. Furthermore, per the settlement agreement, Dripping Springs requested to TCEQ that the settlement agreement be incorporated in the TPDES permit. TCEQ amended the permit to include certain components of the agreement.

WPAP Review. Staff reviews and provide comments, where applicable, for Water Pollution Abatement Plans (WPAPs) or other environmental site assessments associated with any permits or authorizations submitted to the TCEQ, COA, small cities, counties, or other political jurisdictions to mitigate potential degradation of the District's groundwater resources. Staff reviews plans to ensure

that identified wells are properly plugged or permitted and that sensitive geologic features are adequately protected or closed.

SH 45 Southwest (SH 45), MoPac Extension, and the District Consent Decree. Pursuant to the District's Consent Decree relating to the SH 45 and MoPac projects, the District staff and the District's engineering consultant, Tom Hegemier, and inspection consultant, Dave Fowler, continued to be directly involved in oversight of construction activities to ensure sedimentation from stormwater runoff that may affect recharge water quality was limited.

The District staff and consultant participated in seven site inspections on SH 45 and four site inspections on the MoPac extension throughout FY 2018 to assess key construction milestones and the impact of significant rainfall events. The inspection findings were documented in inspection reports that were provided to key project personnel with recommendations and suggestions related to project activities.

The staff's area of focus has been primarily related to evaluations of significant geologic features and the assessment of adequate stormwater control designs onsite. Staff continues to provide input and comments on any changed plans related to project activities. Staff intends to continue these efforts throughout the duration of the construction which will carry over into FY 2019.

b) Research to progress knowledge of innovative water supply strategies such as desalination, aquifer storage and recovery.

- District staff and the Carollo team of consultants completed the BSEACD Desalination/ASR Feasibility Assessment Project Report in March 2018. The Carollo team consisted of Carollo Engineers, Inc., ASR Systems Inc., and NewGen Strategies and Solutions. The report was submitted to the TWDB as the final deliverable to the TWDB grant. This study estimated costs for desalination and ASR facilities on the Texas Disposal Systems property.
- District staff and consultant geochemist finalized a report on the hydrogeology of the saline Edwards. Data collected in the multiport well at the Texas Disposal System facility allowed for the detailed hydrogeologic characterization of the various units. This report concluded that desalination and ASR were hydraulically feasible for the saline Edwards Aquifer.
- District staff drafted technical memorandums on the results of the first two phases of the Ruby Ranch Water Supply Corporation's ASR study which uses Edwards water to inject into the Middle Trinity Aquifer for storage. From October through May, District staff participated in the injection portion of the third phase of this ASR study by collecting water quality and quantity data. The third phase of extraction began in July 2018. A separate report on the project, including data analysis, will be submitted to TCEQ in fall 2018.

2. Coordinate District activity to support effective regional groundwater management strategies by improving GCD coordination through the GMA planning framework and supporting other GCD's management of aquifers shared with the District.

Lead Team: General Management Team

GMA 9

District staff attended one GMA 9 meeting in FY 2018 as the designated representative for the District. The meeting was in Bulverde (New Comal County GCD hosted) on January 29, 2018. In that meeting, staff presented the District's Management Plan. Other efforts include:

- Staff worked on a master spreadsheet that summarizes the rules of all the GCDs in GMA 9.
- Staff provided an update to an evaluation of the DFC in GMA 9. A technical memorandum will be presented at the next GMA 9 meeting.

GMA 10

District staff attended six GMA 10 meetings throughout FY 2018. Like GMA 9 efforts, District staff along with consultant, Kirk Holland, participated in a GMA 10 Joint Planning Committee to establish a rule comparison framework. The committee created a detailed rule comparison spreadsheet and prepared a narrative describing general areas of similarities and differences in the rules of member GCDs. The narrative and spreadsheet data are intended to be used to inform GCD boards of other potential regulatory approaches that might be feasible, as part of regional collaboration in the joint planning process.

Additionally, staff spoke at the March 26 meeting in San Antonio on an approach to DFC monitoring using GMA 9 as an example.

GCD Meet and Share Discussion

The District coordinated a roundtable discussion with other GCDs in the Central Texas area to discuss key permitting related topics such as large-scale permit requests, mitigation, DFC monitoring, permitting fees, special conditions, and aquifer testing. The discussion served to provide the group with new ideas and lessons learned from other District's experiences.

3. **Continue effort of implementing procedures that make office operations more efficient, effective, and more transparent including communications and information dissemination, file management, and budget presentation/reporting.**

Lead Team: Administrative Team

This goal has been achieved.

The following projects were completed or substantially advanced during FY 2018 to improve office operations pursuant to this goal:

- A budget template for a Budget Summary Version was created, that includes two pie charts showing total income forecasted and total expenses forecasted for the upcoming fiscal year. Also, additional backup documentation is now being included with the preliminary and the proposed budget versions that are presented to the Board for approval.
- The W-9 vendor files were organized and updated, culling outdated forms and auditing active contract vendors for receipt of the W-9 form; scanning active forms into Quickbooks, and updating Quickbooks for quick access to these scanned forms in the Vendor Center of Quickbooks.
- The District stakeholder lists (holiday invitations, anniversary list, Christmas card list, etc.) have been compiled into an email list with updated contacts, and with the capability to easily add to, update, and distribute via a contact organization application (e.g. icontact or evite.)
- A manual was developed with detailed instructions on managing certain tasks in the absence of the Senior Administrative Specialist, including but not limited to copier maintenance and repair, supplies procurement, postage replenishment, etc.

- A method was developed for calculating CPI to be assessed to the City of Austin Water Use Fee once the fee reaches its statutory cap, through a consultant. This method would still to be vetted from the City of Austin and agreed upon before its application, but that time has not yet occurred.
- 4. Conduct aquifer science studies that will help evaluate unreasonable impacts to the Trinity Aquifers, increase monitoring capabilities of the Trinity Aquifers, and consider alternative drought triggers for the Trinity Aquifers.**

Lead Team: Aquifer Science Team

This goal has been achieved.

Since passage of House Bill 3405, studies have been conducted of the Trinity Aquifers to support policy development and management of the Trinity Aquifers. The following tasks have been completed to achieve the requirements of Goal 4:

- A methodology was developed to determine the potential for unreasonable impacts due to pumping of the Trinity Aquifers. Aquifer-test data from the Needmore and EP sites were used to determine aquifer parameters from which drawdown predictions for various pumping scenarios could be made. For the EP site, this led to the determination of a high potential for unreasonable impacts, which were summarized in the General Manager's Position Statement.
 - A system of monitor wells has been established in the shared territories. This consists primarily of domestic wells for which the well owners have allowed access to District staff to monitor water levels over time. Monitoring has focused on the EP and Needmore areas, and some neighborhoods to the west of San Marcos for which there had not been monitoring previously. Monitoring is also being conducted in a multiport monitor well in the Rolling Oaks subdivision that was installed by the District.
 - With increased pumping from the Trinity Aquifers, it was necessary to evaluate the sensitivity of these aquifers to drought conditions and to determine if the current drought monitoring of the Edwards Aquifer was applicable to the Trinity Aquifers. A technical memo was prepared that concluded that climatic conditions that cause drought issues for the Edwards Aquifer bring about similar effects in the Trinity Aquifers. Therefore, drought trigger levels set for Barton Springs and the Lovelady monitor well also apply to the Trinity Aquifers.
- 5. Prepare educational content and develop programming to raise awareness about the interconnectedness of land stewardship, water quality, and endangered species.**

Lead Team: Education & Outreach Team

This goal has been achieved.

The Education and Outreach team has focused on increasing social media presence, reorganizing and expanding website content, visiting with well owners, and developing an educational game with new technology to highlight the connectivity of land management decisions on water quality.

- The team developed and ran social media posts based on ten of the City of Austin and Texas Agrilife's Grow Green Guides that discuss the least toxic methods to deal with common pests. Posts related to safe treatment of fire ants, mosquitos, and poison ivy were highly successful, each getting between 1,000-1,500 impressions. Home owners were encouraged to protect the quality of runoff from their land by reducing the use of harmful chemicals.
 - The Water Conservation section of the District website was expanded to include water quality protection information. Sections on pest control, native and adaptive plants, rain gardens and waste control were added.
 - Articles in eight eNews bulletins updated the public, well owners, and stakeholders on aquifer news such as aquifer status, habitat conservation plan progress, water quality protection efforts, and District programs. ENews bulletins are sent to 2,574 subscribers.
 - During this year's Well Water Checkup and Neighborhood Site Visits, staff screened well water for nitrate and bacteria (common contaminants that indicate a surface connection) and spoke with well owners about the importance of good septic system maintenance, limited use of harmful pesticides and herbicides, and potential for groundwater-surface water connections in karst systems.
 - Staff are finalizing details on the educational augmented reality game called Creek Quest. The game uses several modes of play to engage a wide variety of audiences in diverse settings. Cards represent the District's two endangered salamanders, six key environmental indicator species, and three habitats. Each animal card shows the corresponding habitat, average size, and pollution sensitivity level. The augmented reality application can be used to visualize the animals' movement and habitat, link to additional information, and verify life cycle pairs (larvae and adult).
- 6. Improve and enhance the organization, accessibility, and dissemination of District data and groundwater management information through: a) development of an integrated database and reporting system, and b) an updated Annual Report format that is simple and informative and satisfies the reporting requirements for the prospective Habitat Conservation Plan and the revised Management Plan.**

Lead Team: Regulatory Compliance Team

Substantial progress has been made on this goal.

- Staff has successfully provided project management oversight for a contract for a database management and reporting system. This final data management system will aid staff in data analysis efforts, data input, permit management, production management, HCP reporting, and annual reporting. To aid in the progress of this project deliverable, staff has maintained regular bi-weekly meetings with the contractor, and developed guidance mockups and checklists for the contractor. There are regularly scheduled updates and budget updates to ensure the project is moving forward in a timely fashion. The database will be completed in Fiscal Year 2019.
- Staff will be working with the General Manager and possibly an outside contractor to support the efforts to design and enhance the format of the annual report. In this immediate year (Fall 2018), a template may be designed in lieu of an actual final report. This is due to the timing and requirements of the Incidental Take Permit from USFWS.

Item 4

Board Discussions and Possible Actions

c. Discussion and possible action related to establishing the District's role, priorities and topics of interest for the upcoming 86th Legislative session.

Item 5

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 6
Adjournment