

Brazos Valley Groundwater Conservation District

Public
Hearing for
Transport
Permit
Applications

June 18, 2024

Executive Summary

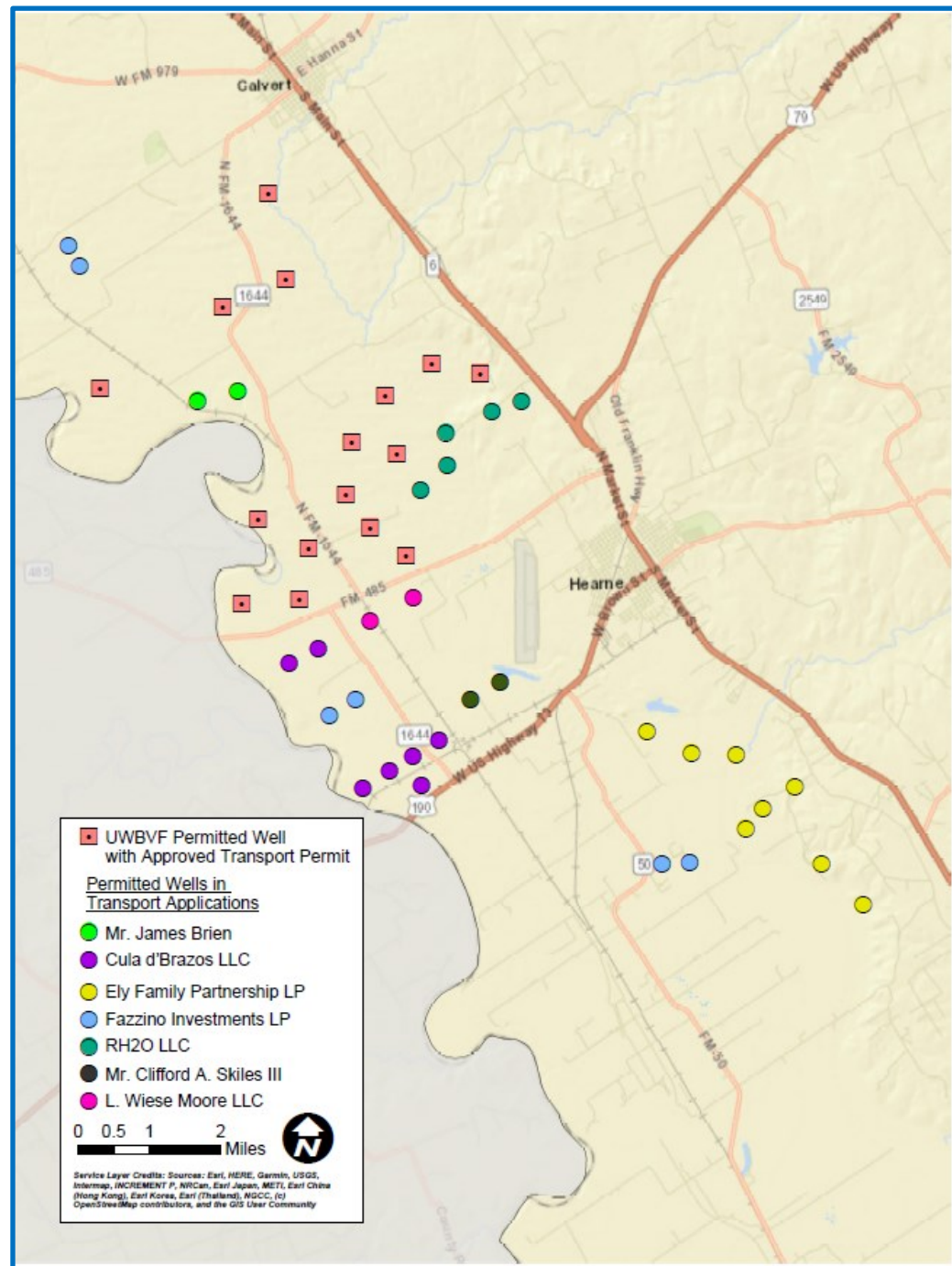
- The transport permit applications address the requirements of BVGCD Rule 10.3
 - Transport permit applications were deemed administratively complete by BVGCD on March 21, 2024
- The BVGCD Board has requested additional technical review to address items in Rule 10.3(b)

Introduction

- **Transport Permit Applications**
- **Transport Permit Modeling**
 - Model Update
 - Calvert Area Fault Update
 - Update to GMA 12 S-19 MODFLOW Well File
- **BVGCD Desired Future Conditions (DFC)**
- **Effects of Simulated Pumping on BVGCD Permitted and Registered Simsboro Wells**

Transport Permit Applications

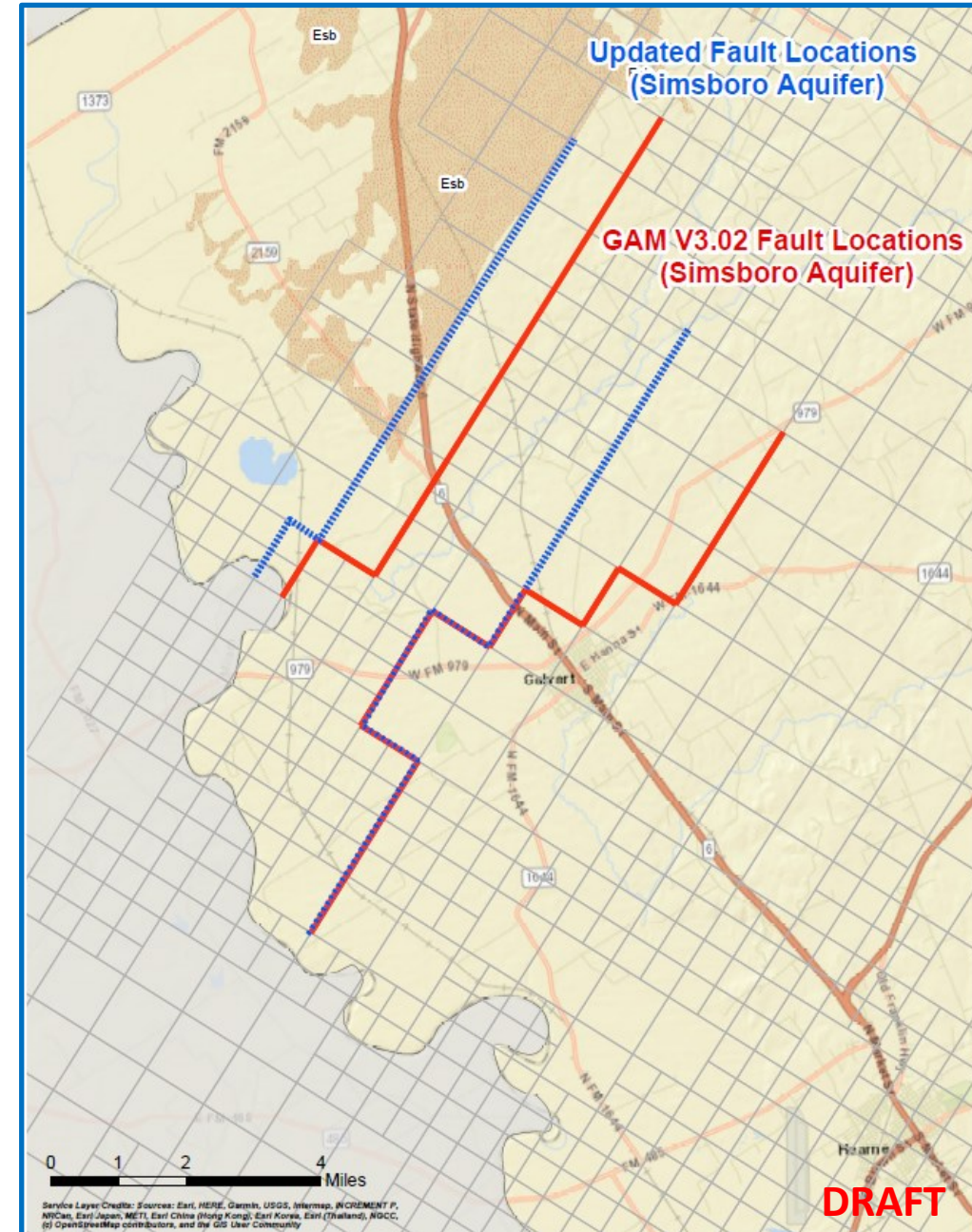
- Mr. James Brien
- Cula d'Brazos LLC
- Ely Family Partnership LP
- Fazzino Investments LP
- RH2O LLC
- Mr. Clifford A. Skiles III
- L. Wiese Moore LLC



Assumptions for the S-19G3 Well File

- **Upwell Brazos Valley Farm**
 - 5,000 afy is divided evenly between 12 agricultural wells beginning in 2011 and held mostly constant through 2070
 - All other Upwell permitted production is set to 0 from 2029 to 2070
 - Allowing for transport pumping to be added in subsequent runs
- **Municipal Production based on 2070 Water Demand in the 2022 State Water Plan**
 - Current permitted production is the maximum amount
 - Permits greater than 2070 demand ramp up to 2070
 - Permits less than 2070 demand ramp up to 2060
 - held constant from 2060 through 2070
 - Municipal permits issued after S-19 are included in S-19G3 with pumping starting in 2029
- **Vista Ridge Well Field**
 - Simsboro pumping added to bring total combined Carrizo and Simsboro production to 50,000 afy from 2022 to 2070
 - Decrease Carrizo Pumping from 15,000 ac-ft to 9,100 ac-ft in 2024
 - Increase Simsboro Pumping from 35,000 ac-ft to 41,000 ac-ft in 2024

Fault Update to GAM V3.02

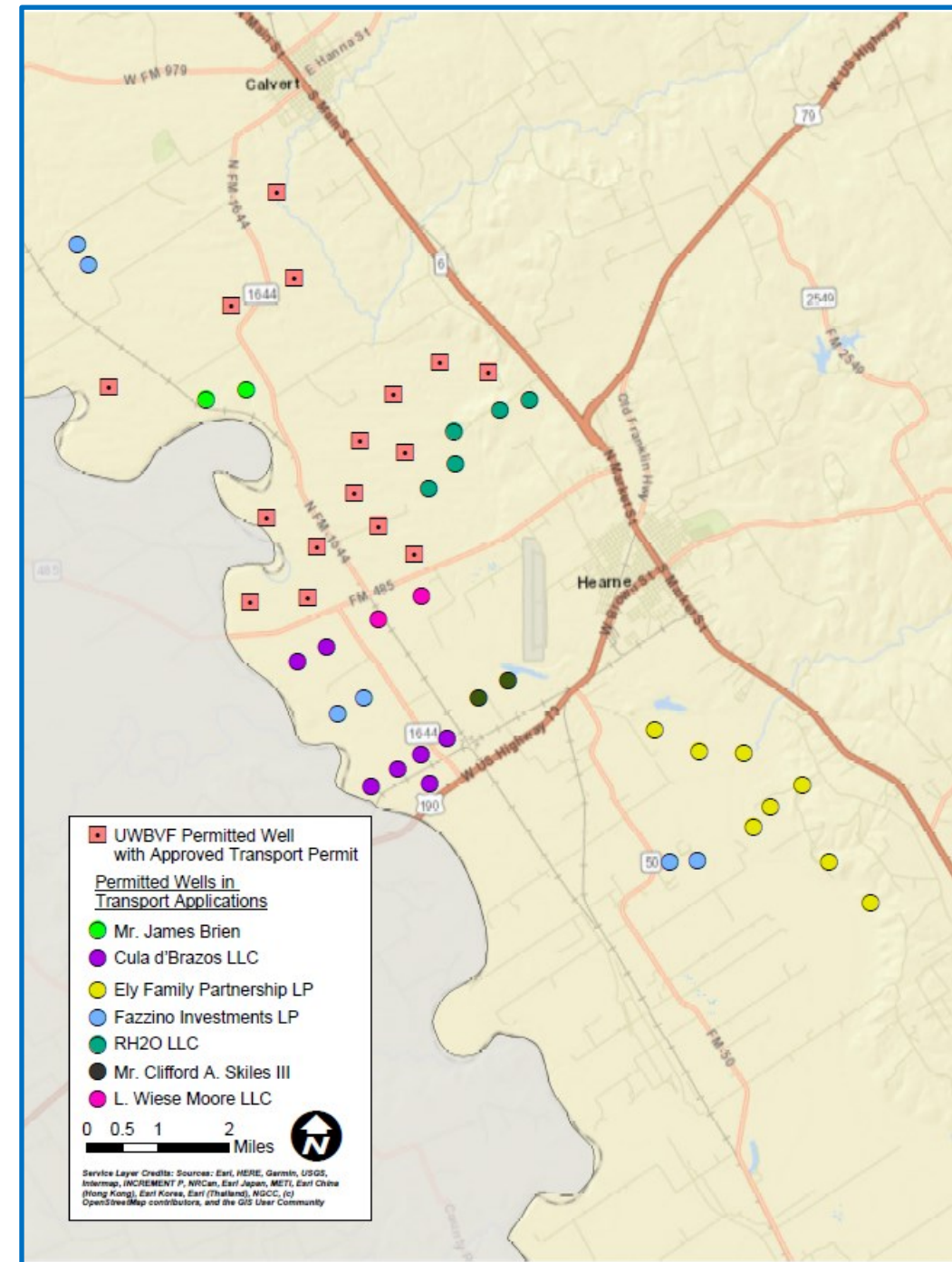


Transport Pumping Scenarios

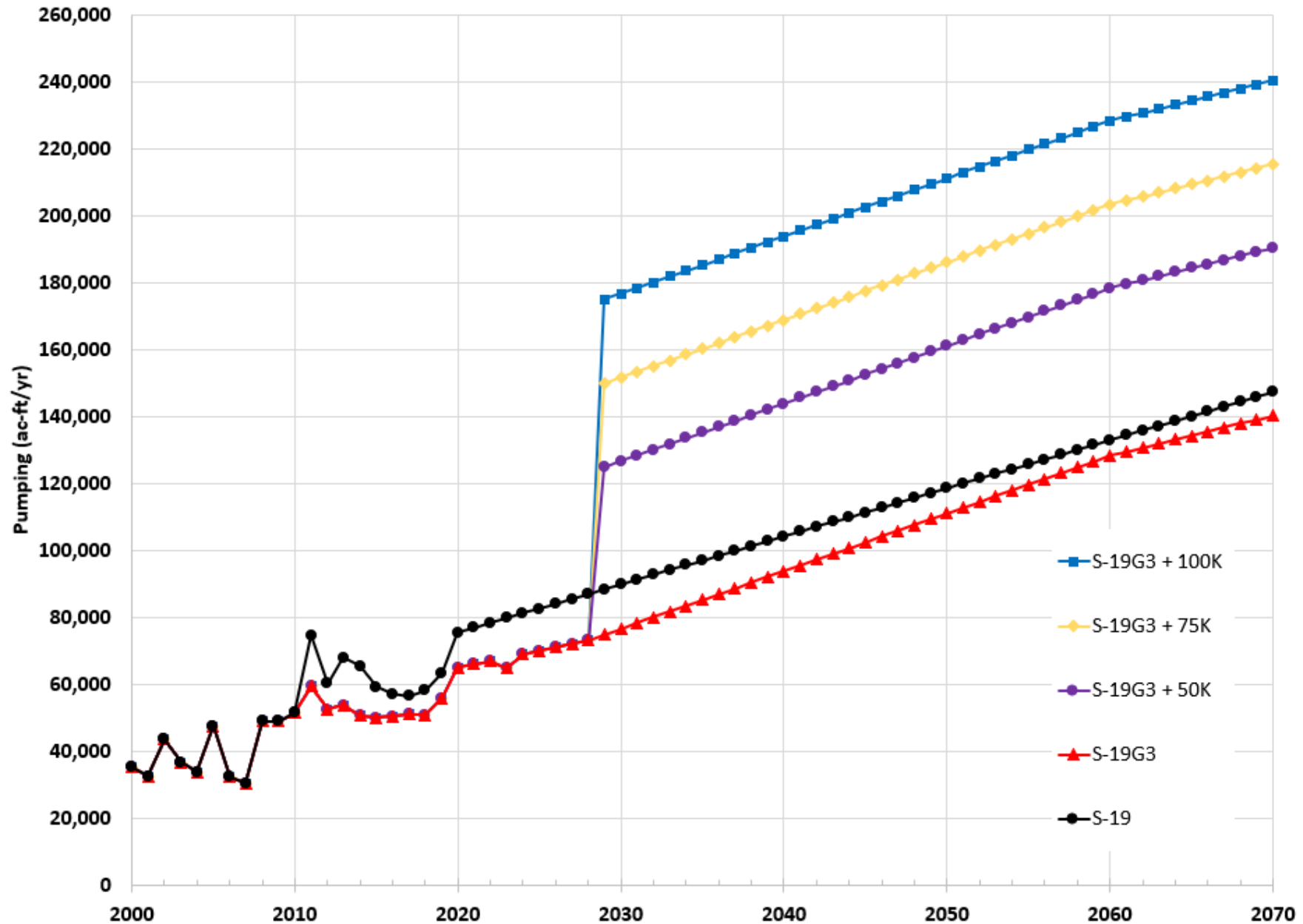
- S-19G3 is base well file
- S19G3 + 50,000 ac-ft (UWBVF Wells)
- S19G3 + 75,000 ac-ft (UWBVF & Wells in Transport Permit Application)
- S19G3 + 100,000 ac-ft (UWBVF & Wells in Transport Permit Application)
- Pumping Period is 30 years in each scenario (transport permit term)

BVGCD Permit Holder	Well Number	BVGCD Permit Number	Maximum Annual Production (ac-ft/yr)
UW Brazos Valley Farm, LLC	CS1	BVDO-0254	4,839
UW Brazos Valley Farm, LLC	CS2	BVDO-0255	5,322
UW Brazos Valley Farm, LLC	CS3	BVDO-0256	5,322
UW Brazos Valley Farm, LLC	Well B	BVDO-0292	4,068
UW Brazos Valley Farm, LLC	Well C	BVDO-0293	2,001
UW Brazos Valley Farm, LLC	Well G	BVDO-0294	2,776
UW Brazos Valley Farm, LLC	PS1	BVDO-0295	3,164
UW Brazos Valley Farm, LLC	PS2	BVDO-0296	1,937
UW Brazos Valley Farm, LLC	PS3	BVDO-0297	3,099
UW Brazos Valley Farm, LLC	PS4	BVDO-0298	2,905
UW Brazos Valley Farm, LLC	PS5	BVDO-0299	1,937
UW Brazos Valley Farm, LLC	PS6	BVDO-0300	2,195
UW Brazos Valley Farm, LLC	PS8	BVDO-0301	2,260
UW Brazos Valley Farm, LLC	PS9	BVDO-0302	3,680
UW Brazos Valley Farm, LLC	PS10	BVDO-0303	1,937
UW Brazos Valley Farm, LLC	PS11	BVDO-0304	2,557

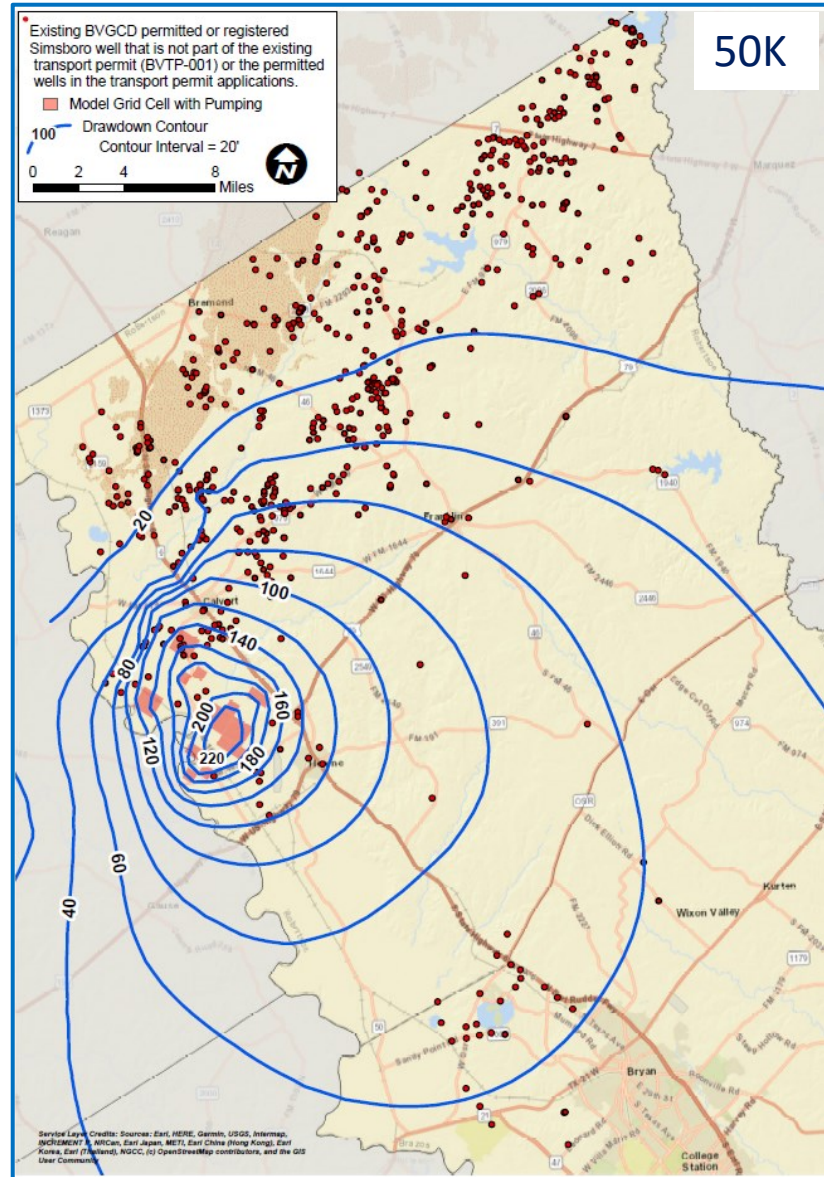
- UWBVF wells that are part of an existing transport permit (BVTP-001)



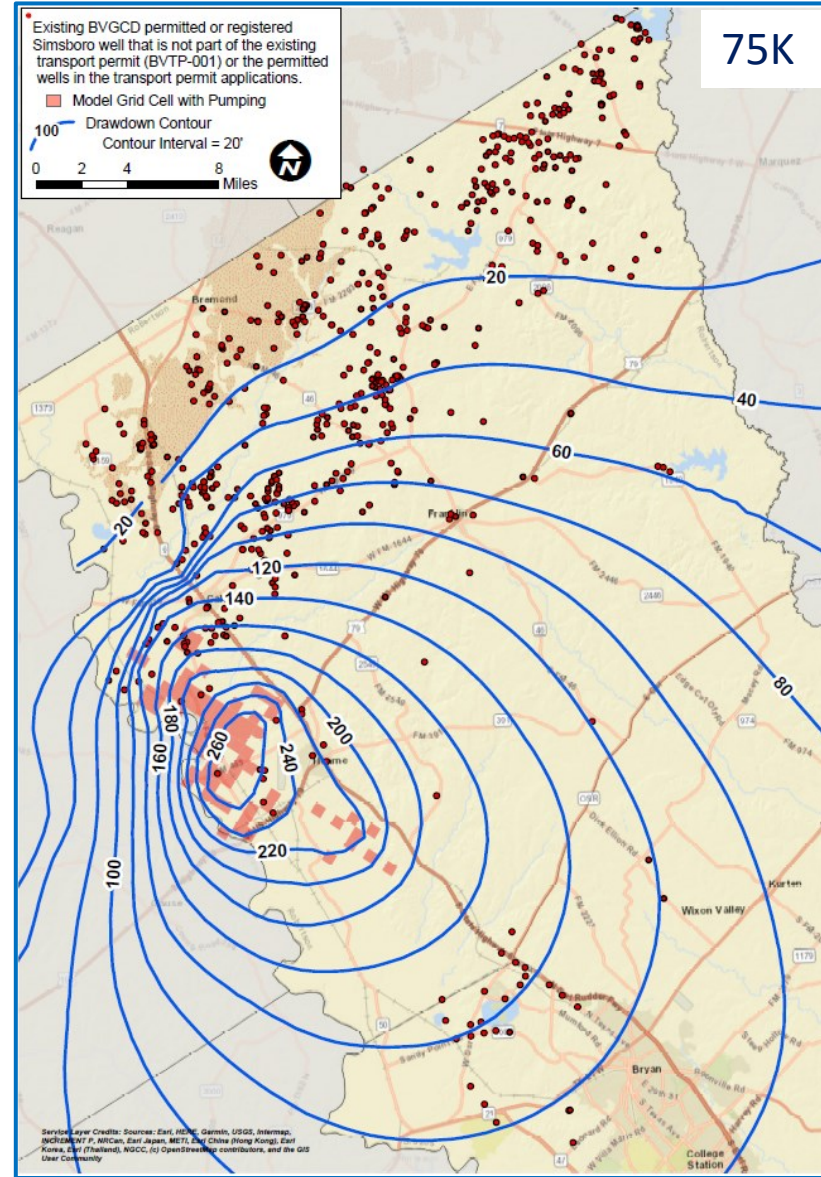
Comparison of the Transport Pumping Scenarios



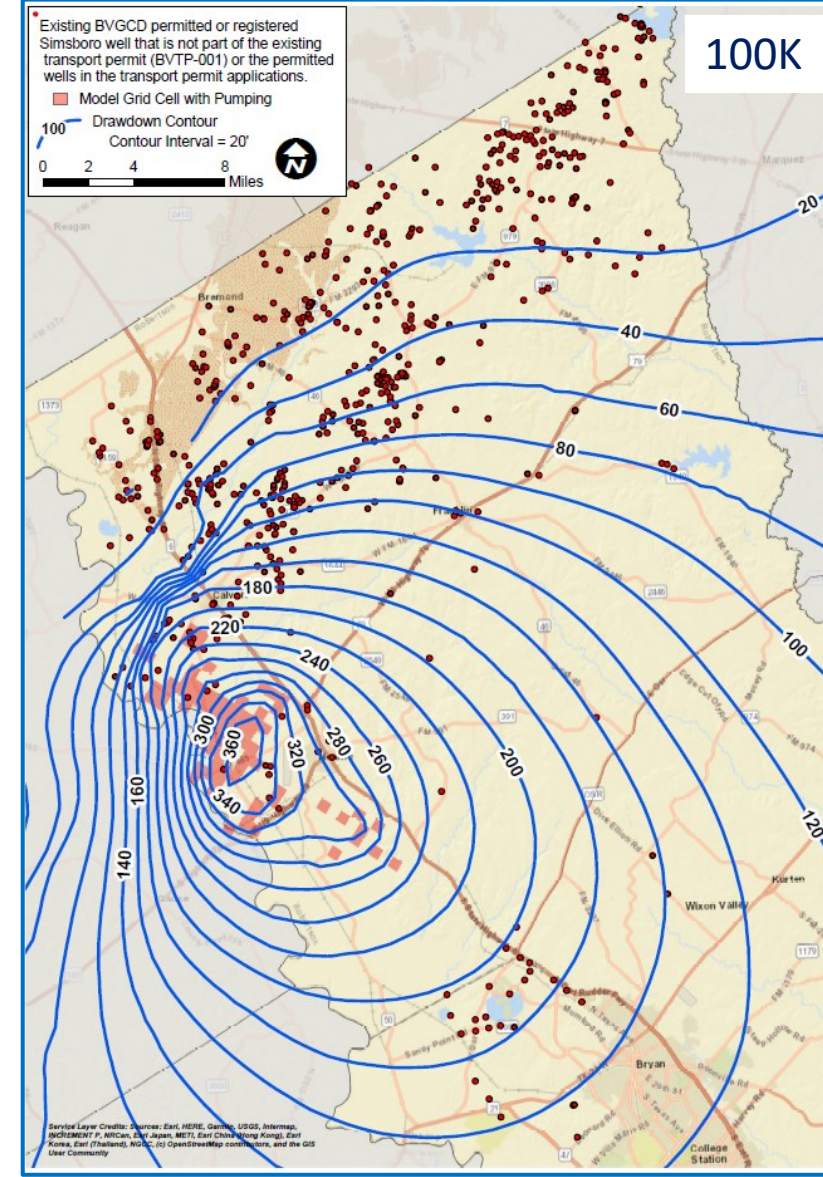
Simulated Simsboro Drawdown in 2059 Based on the Transport Pumping Scenarios



50K - UWBVF wells under existing transport permit (BVTP-001)

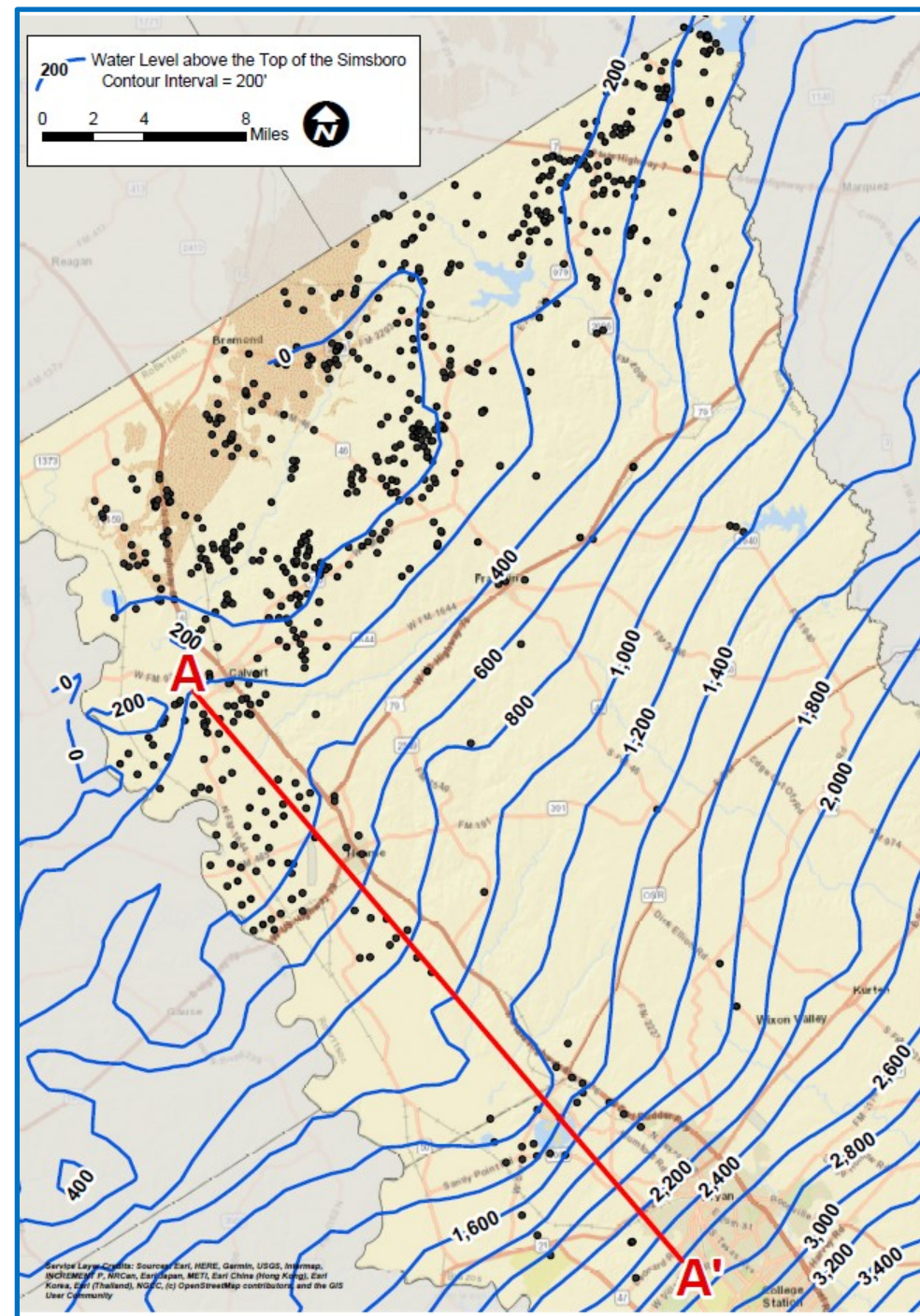


75K - UWBVF wells under existing transport permit (BVTP-001) and the permitted wells in the transport permit applications

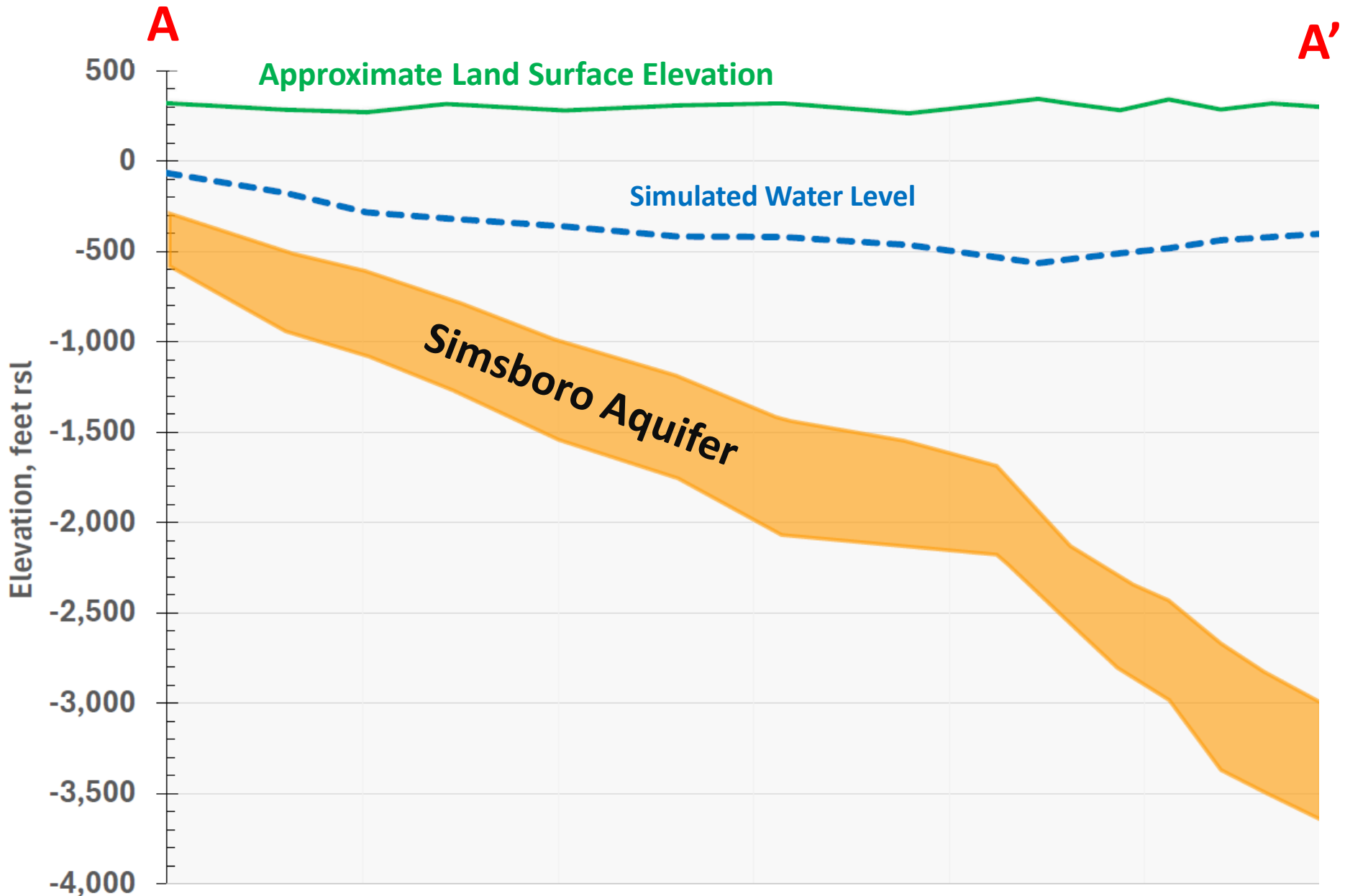


100K - UWBVF wells under existing transport permit (BVTP-001) and the permitted wells in the transport permit applications

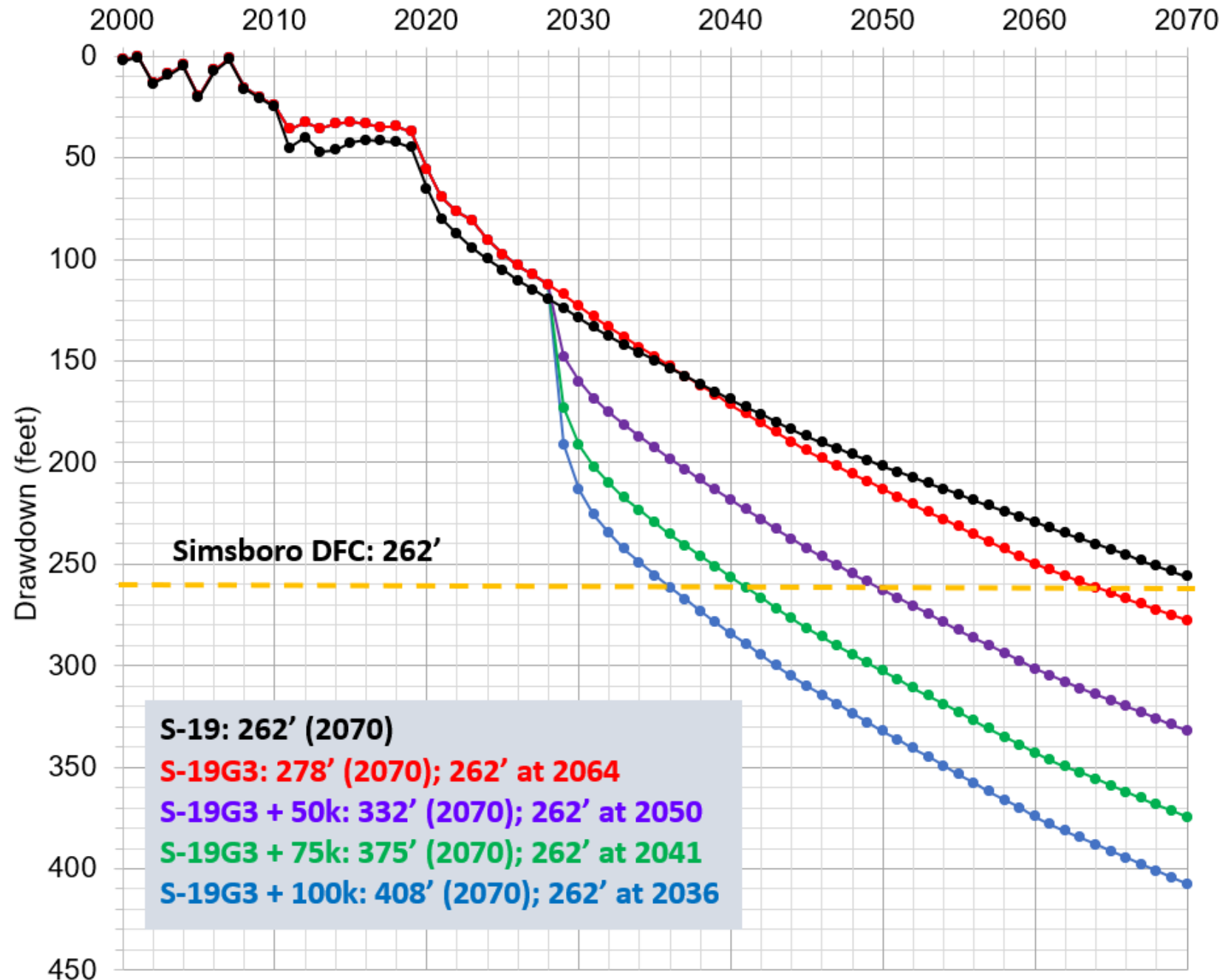
Simulated Water Level above the Top of the Simsboro Aquifer in 2059 Based on the 100k Transport Pumping Scenario



Schematic Cross-Section of the 2059 Water Level in the Simsboro Aquifer Based on 100k Transport Permit Application Pumping Scenario

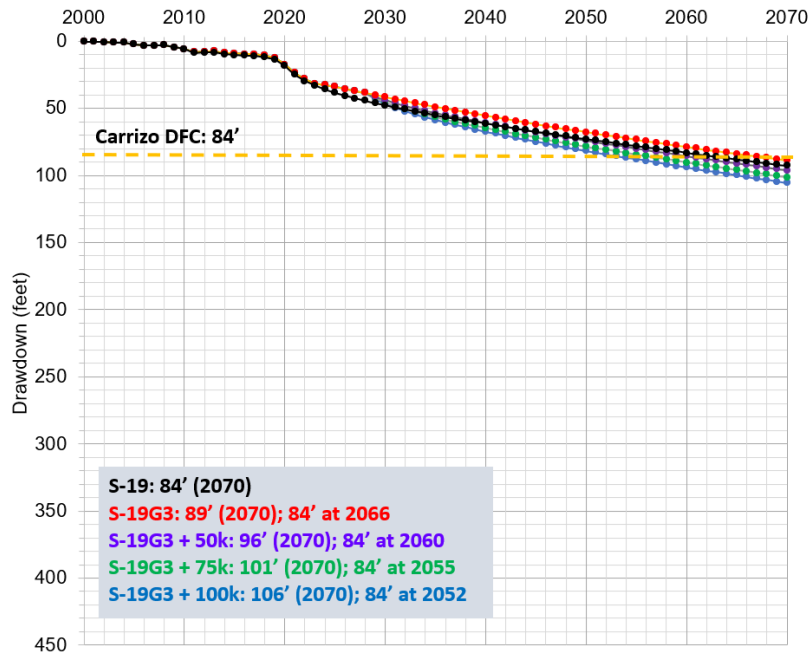


Average Simsboro Drawdown 2000 – 2070 compared to current DFC



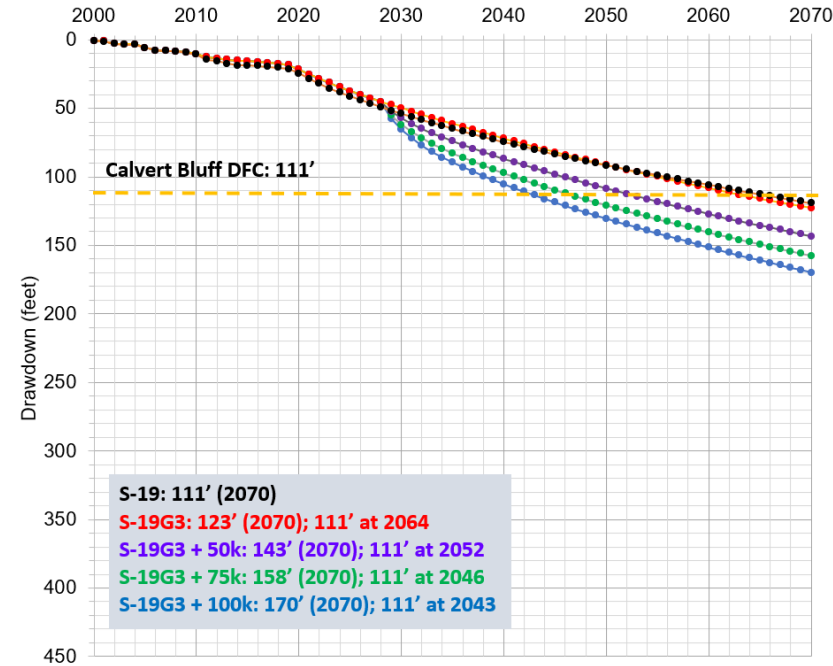
Average Drawdown 2000 – 2070 compared to current DFCs in other aquifers

Carrizo



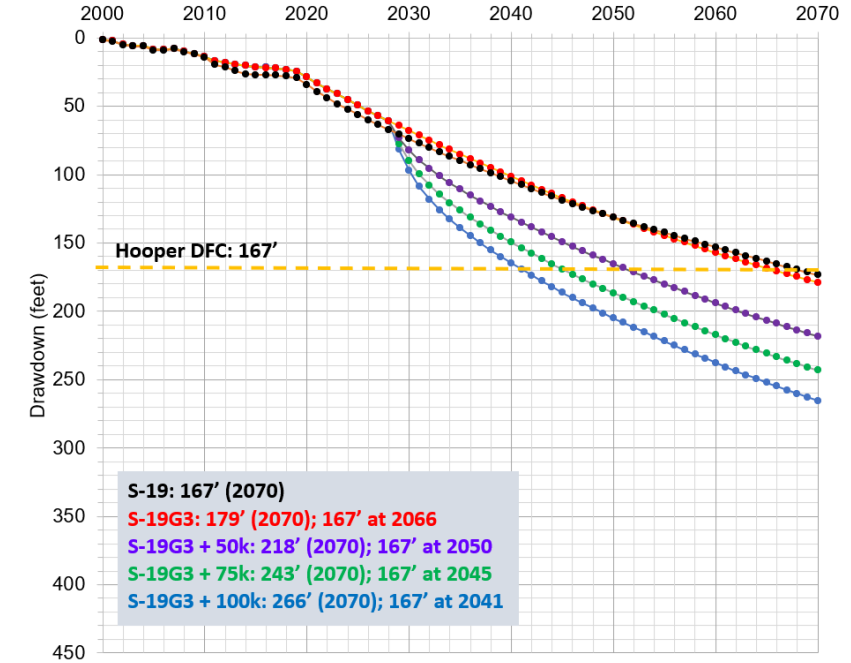
Average Carrizo Drawdown 2000 - 2070

Calvert Bluff



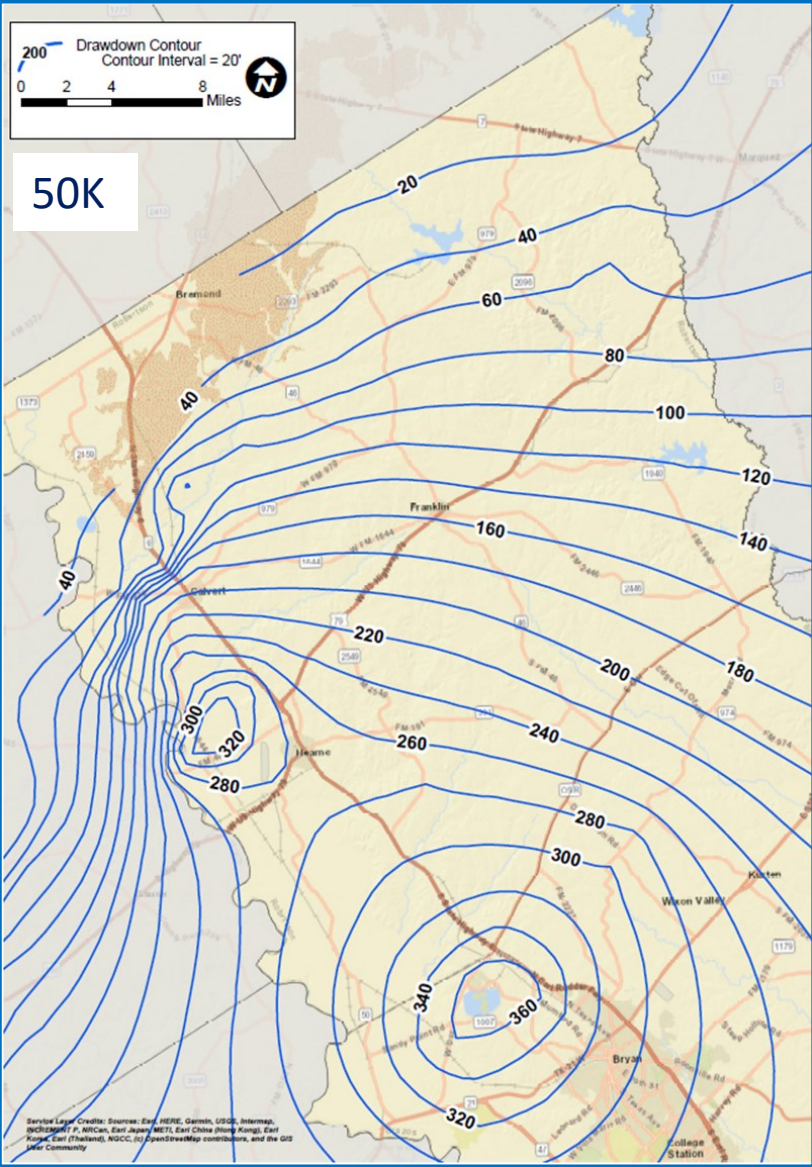
Average Calvert Bluff Drawdown 2000 - 2070

Hooper

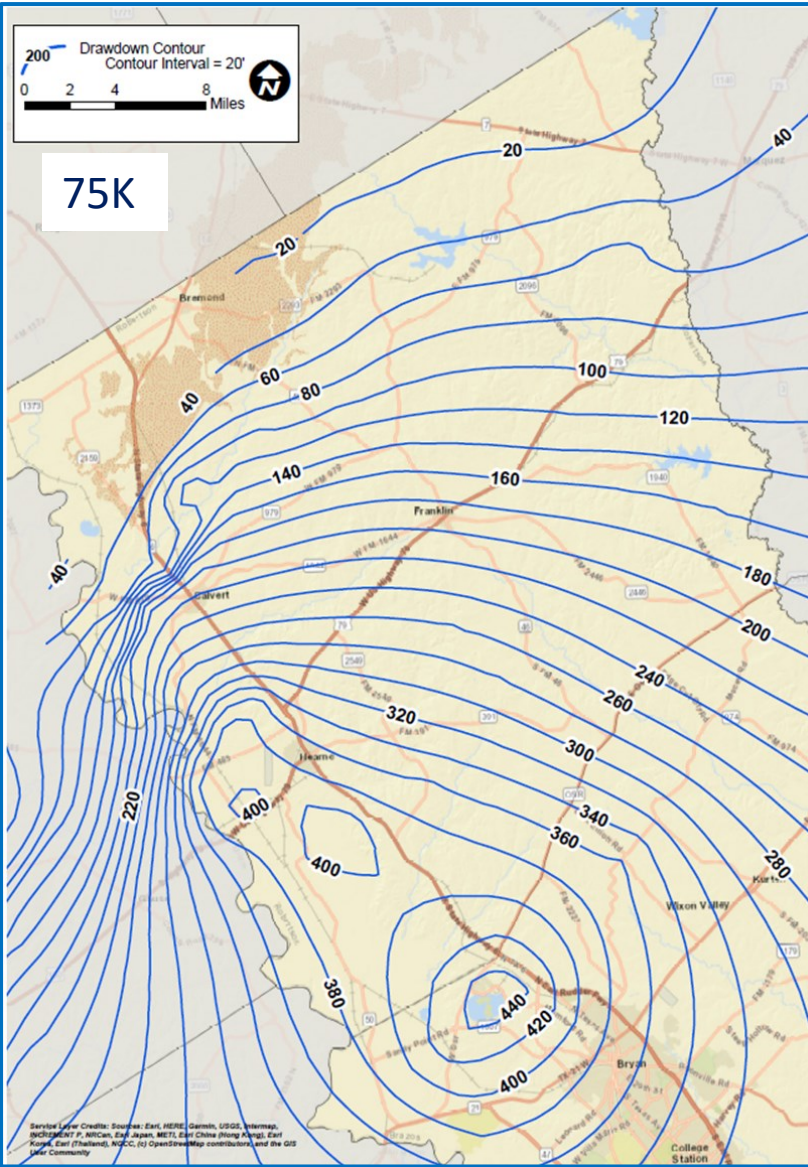


Average Hooper Drawdown 2000 - 2070

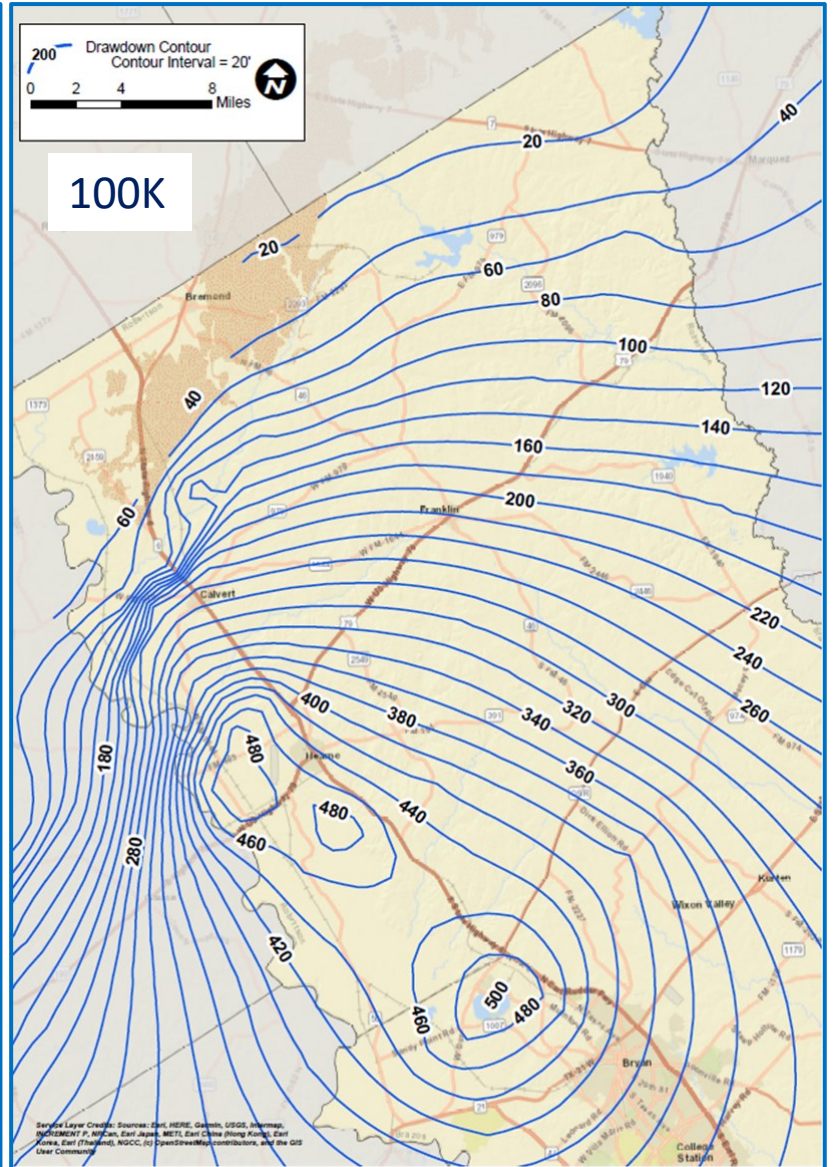
Simulated 2028 to 2059 Drawdown from All Pumping



50K - UWVBF wells under existing transport permit (BVTP-001)



75K - UWVBF wells under existing transport permit (BVTP-001) and the permitted wells in the transport permit applications

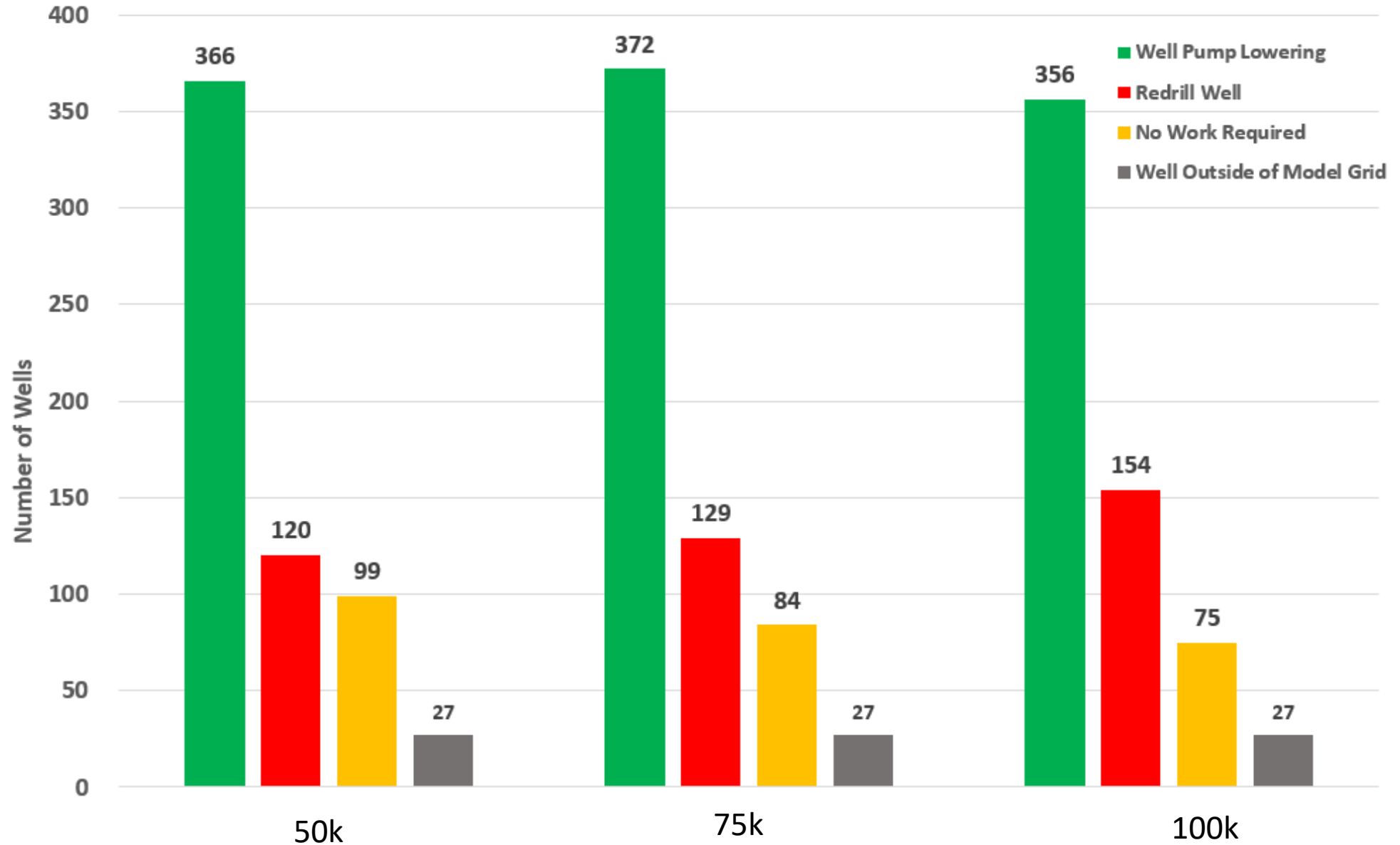


100K - UWVBF wells under existing transport permit (BVTP-001) and the permitted wells in the transport permit applications

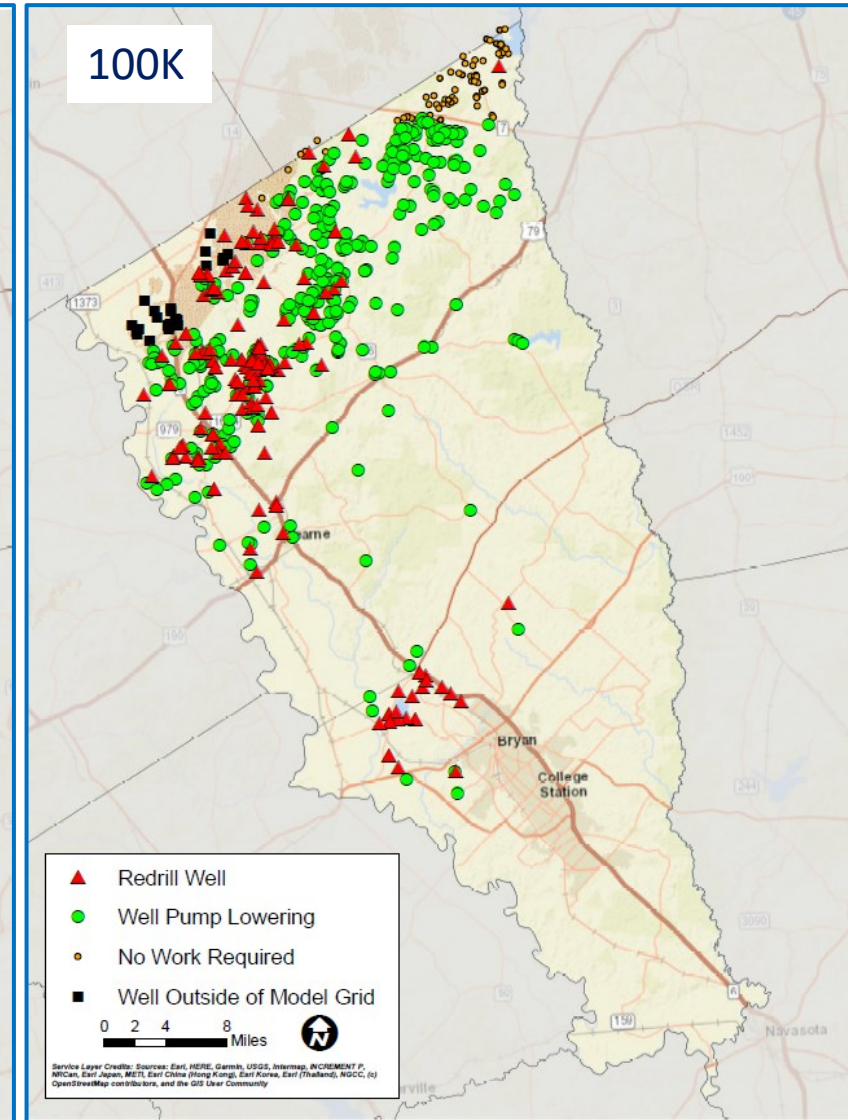
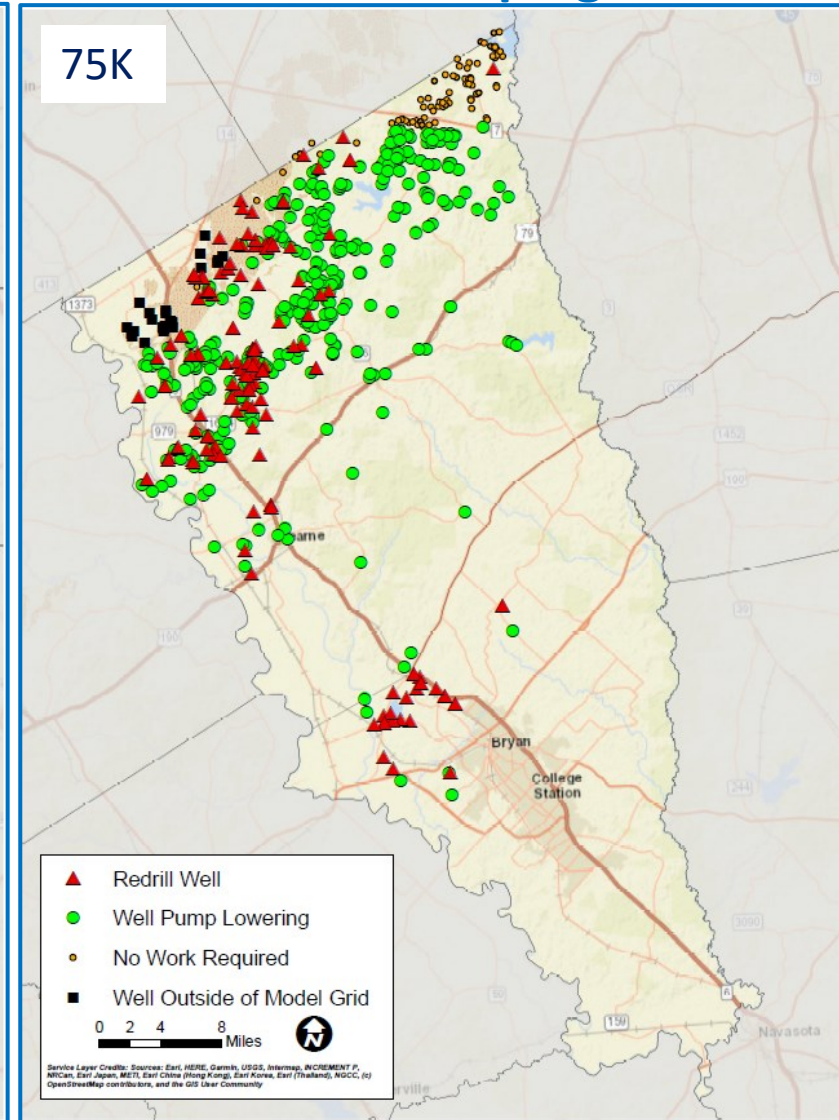
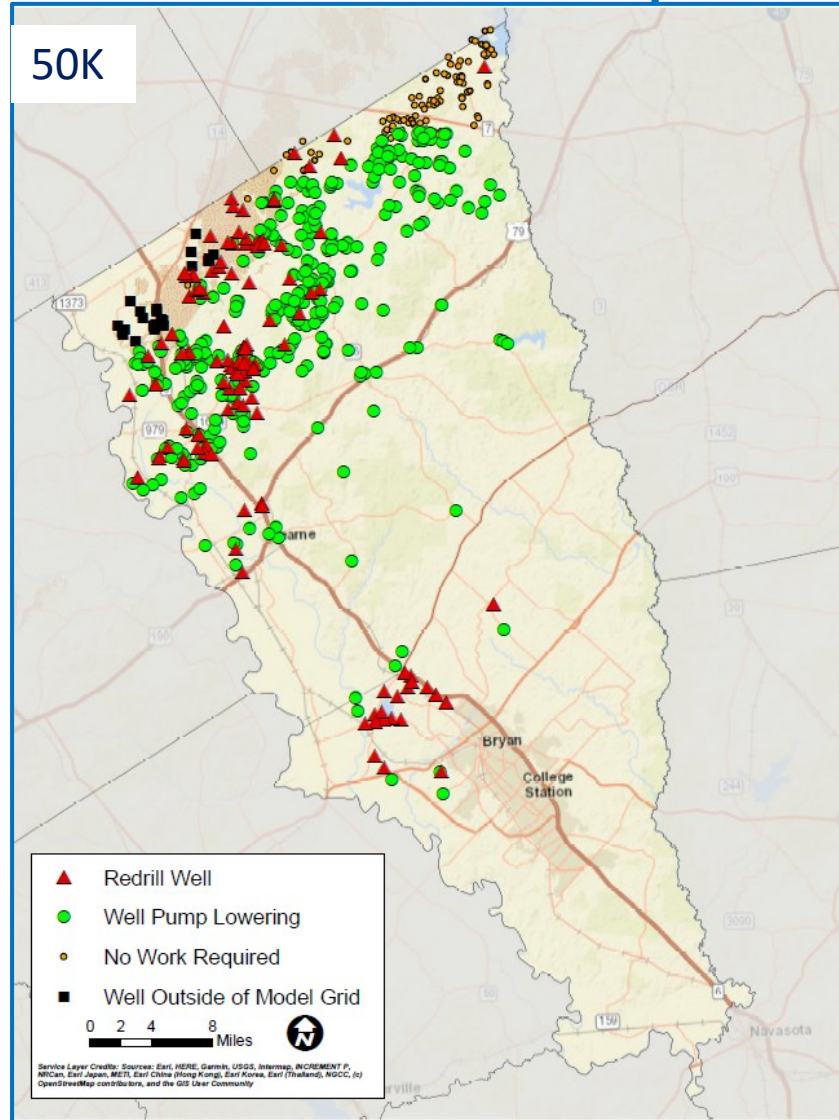
Effects of Simulated Pumping on BVGCD Permitted and Registered Simsboro Wells

- 612 BVGCD permitted and registered Simsboro wells
- Assessment does not allocate responsibility for impacts among all the groundwater producers in the Simsboro Aquifer.
- Timing and magnitude of pumping have potential impacts on allocation of responsibility and on when and if wells may require mitigation.
- Analysis compares the simulated water level elevation in 2059 to well construction and pump data (as available or estimated) and estimates whether a pump will need to be lowered or whether a well will need to be redrilled based on that single estimate of water level elevation.
- Analysis does not include age of wells, depreciation of wells and pumps, or standard maintenance and pump replacements.
- Analysis is preliminary and limited.

AGS Estimate of the Number of BVGCD Permitted or Registered Simsboro Wells that will need to be Redrilled or have the Pump Lowered Based on All Pumping and Simulated 2059 Water Levels



AGS Estimate of the Locations of BVGCD Permitted or Registered Simsboro Wells that will need to be Redrilled or have the Pump Lowered Based on All Pumping



Support Slides

Redrill criteria include:

- Liner - redrill if 2059 water level elevation is below liner elevation - required head above pump estimate.
- Screen - 2059 water level below middle of screened interval.
- Only Total Depth - 2059 water level below total depth + required head above pump estimate.

Pump lowering criteria include:

- Water level is 50 feet below base case of 2028 water levels in S-19G3:
 - assume both pump lowering and pump and motor rebuild
- Water level is 20-49 feet below base case of 2028 water levels in S-19G3:
 - assume additional column only
- Water level is less than 20 feet below base case of 2028 water levels in S-19G3:
 - no pump lowering is required

Analysis Limitations:

- Approximately 27 BVGCD permitted and registered Simsboro wells are located outside of the GAM model grid and do not have a 2059 water level estimate.
- There are potentially up to 33 wells included in the redrill category with anomalous data.
 - Wells may have a different well total depth, aquifer designation, and/or water level than what is used in the AGS estimate development.