

Vista Ridge Regional Supply Project

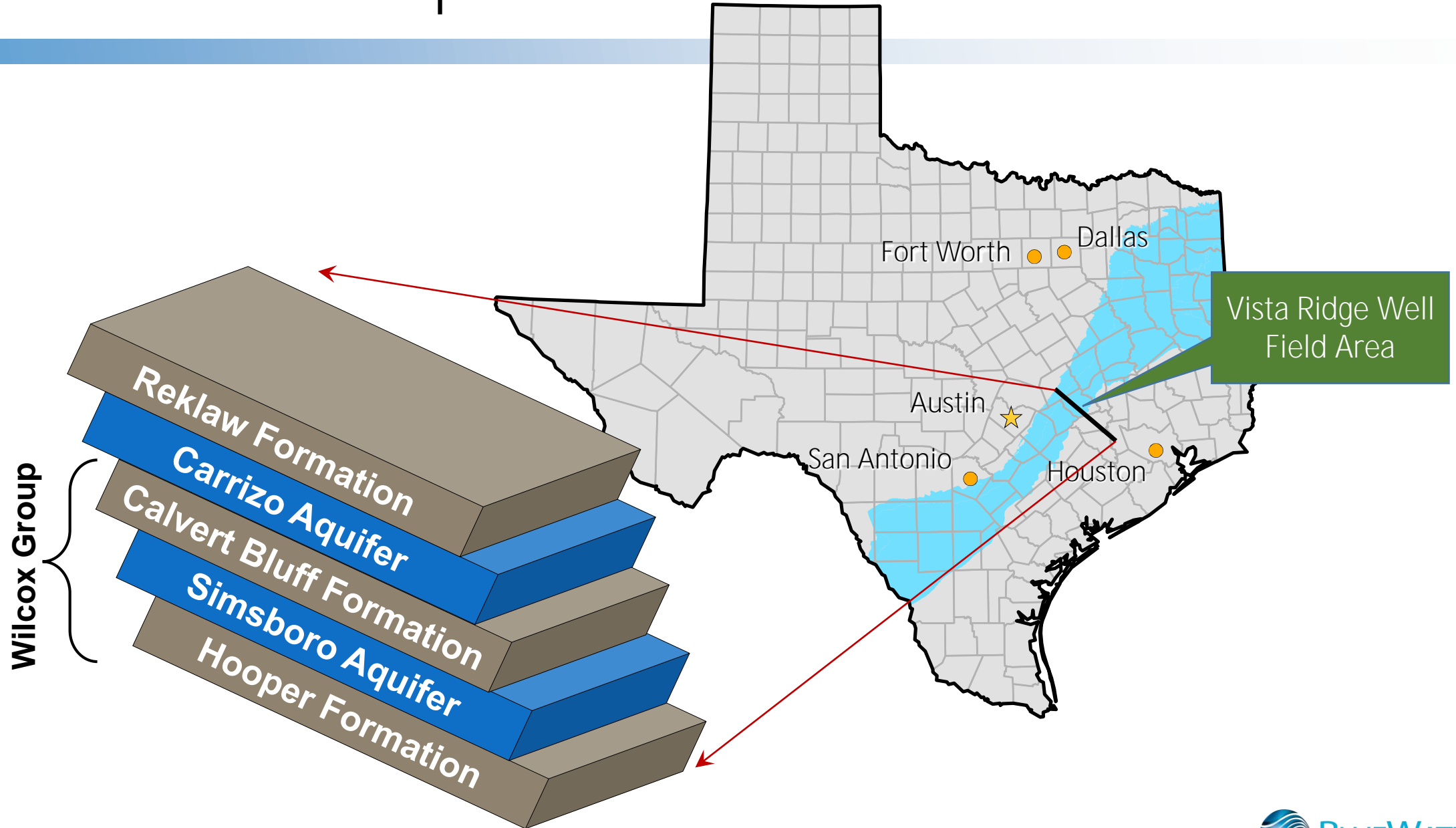
POSGCD Permit Amendment Hearing – October 3, 2019

Presented by James Bené, P.G.
(R. W. Harden & Associates, Inc.)

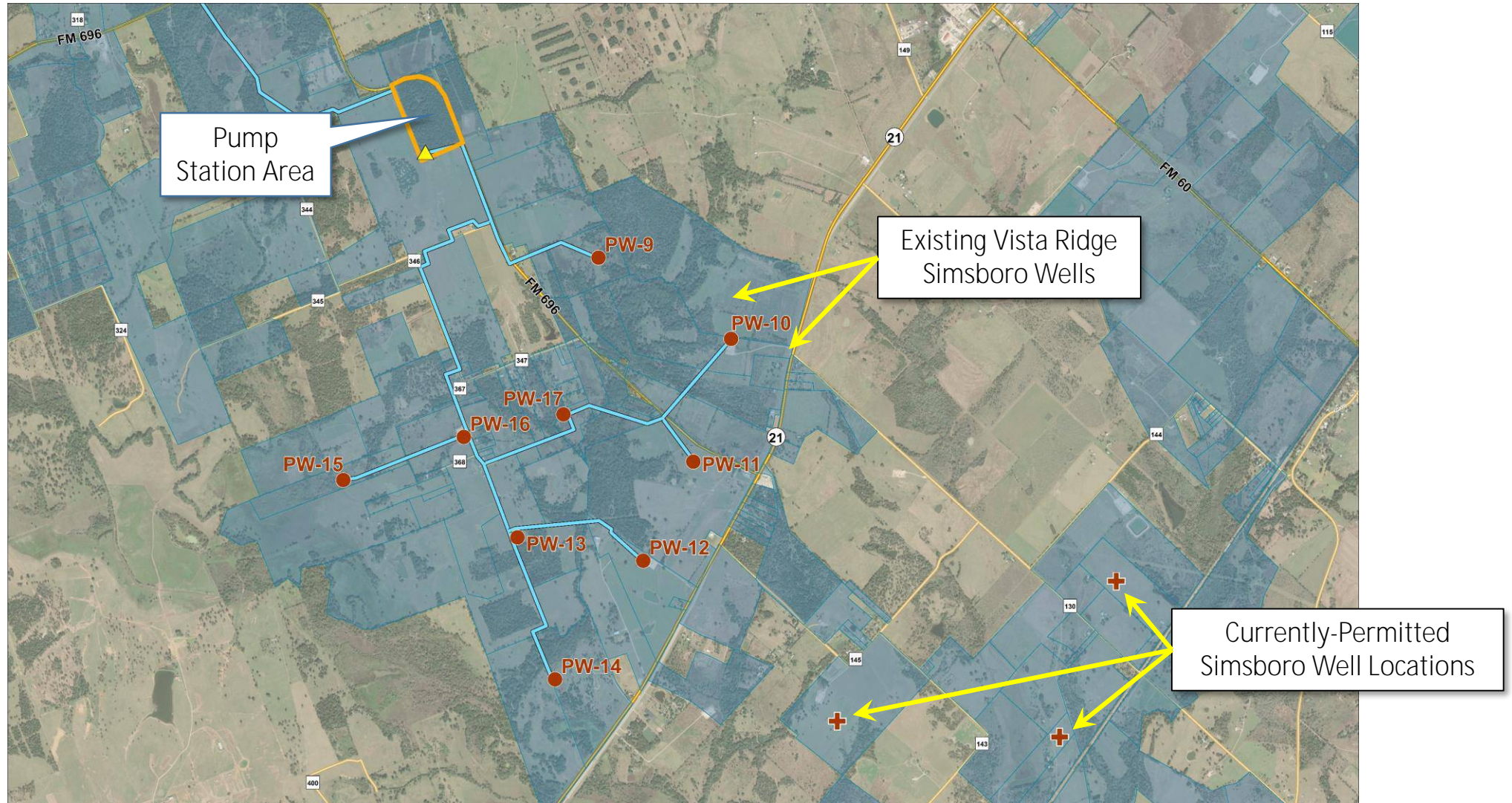
Presentation Outline

- Vista Ridge Well Field Overview
- Modifications to GAM
- Requested Permit Amendments
- Modeling Results

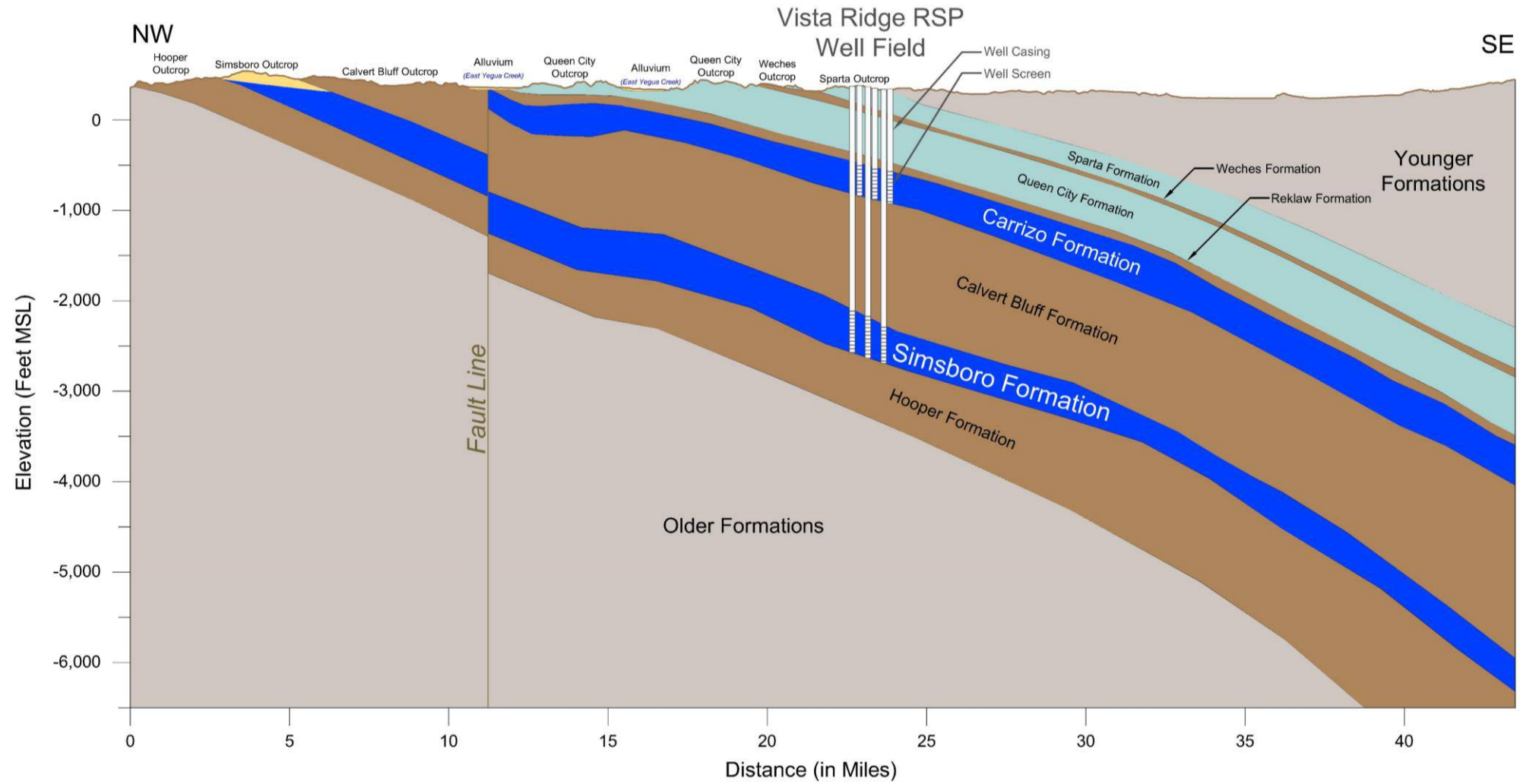
Carrizo-Wilcox Aquifer



Well Field



Aquifer Cross-Section



15x Vertical Exaggeration
Ground level source: USGS National Elevation Dataset (NED)
Fault source: Geologic Atlas of Texas - Austin Sheet (1974)
Formation surface source: Central Carrizo-Wilcox, Queen City, and Sparta Groundwater Availability Model (GAM)

Permit Amendment Requests

- Amendment 1: Relocate Simsboro Well PW-18
- Amendment 2: Increase Simsboro production by 4,842 acft/yr
- Amendment 3: Reinstate 3,000 gpm maximum well production rates
- Amendment 4: Adjust transport permit to be consistent with changes in operating permit

Groundwater Availability Model (GAM)

- Central Texas Carrizo-Wilcox-Queen City-Sparta GAM
- Updated in 2018
- **Updated model doesn't accurately represent** the hydraulic conditions in the Vista Ridge well field area
- GAM corrected to include Vista Ridge pump testing information

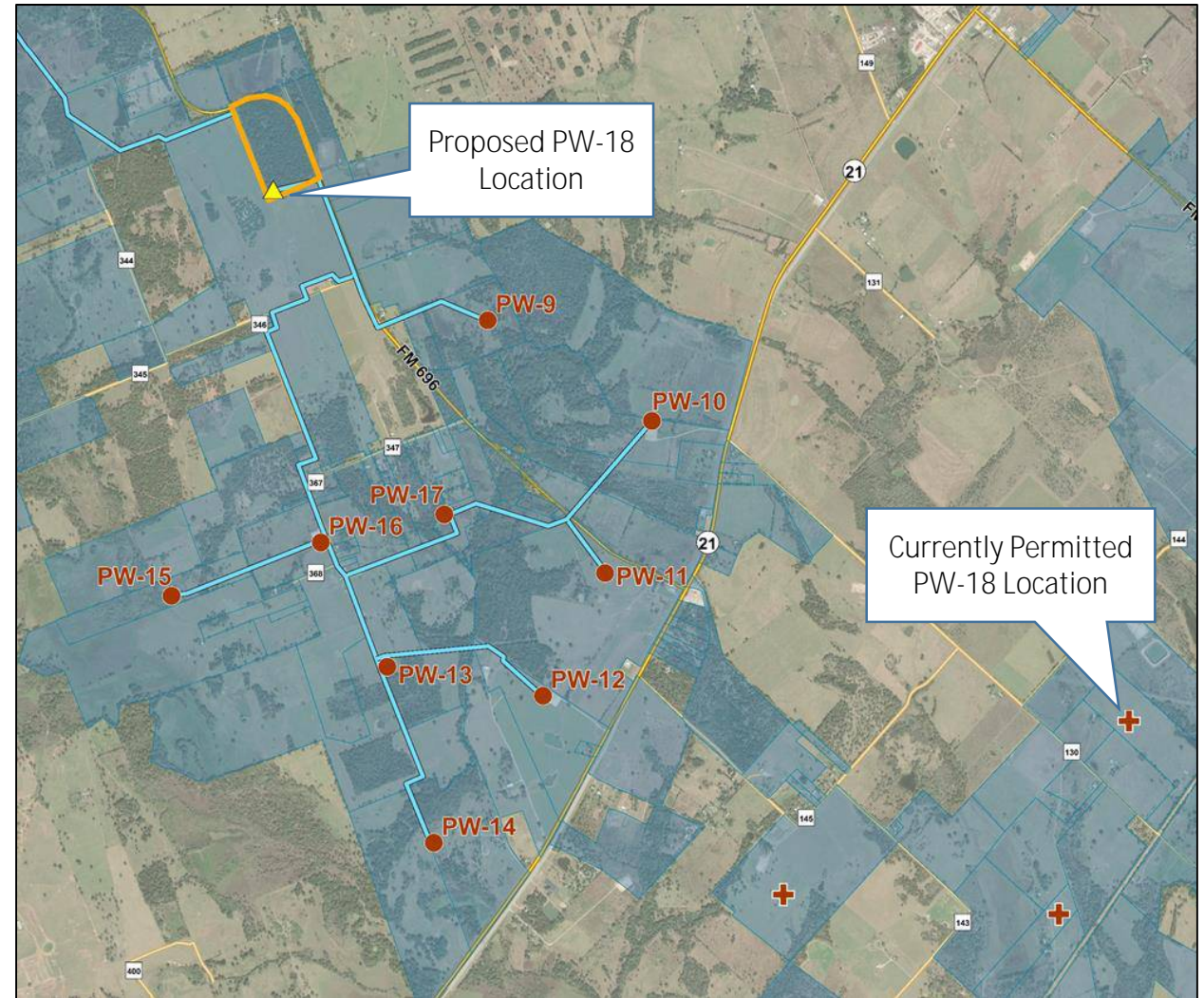
GAM Modifications

- Simsboro Well PW-13 tested in 2015
 - Documented regional Simsboro transmissivity of approximately 110,000 gal/day/ft
- Current GAM includes transmissivity of about 45,000 gal/day/ft to 55,000 gal/day/ft in Vista Ridge area
 - Current GAM over-predicts drawdown by approximately 150 feet in Vista Ridge well field area
- Modified version of the GAM that includes corrected transmissivity used to model aquifer response (MODGAM)

Permit Amendment 1

➤ Amendment 1: Relocate Simsboro Well PW-18

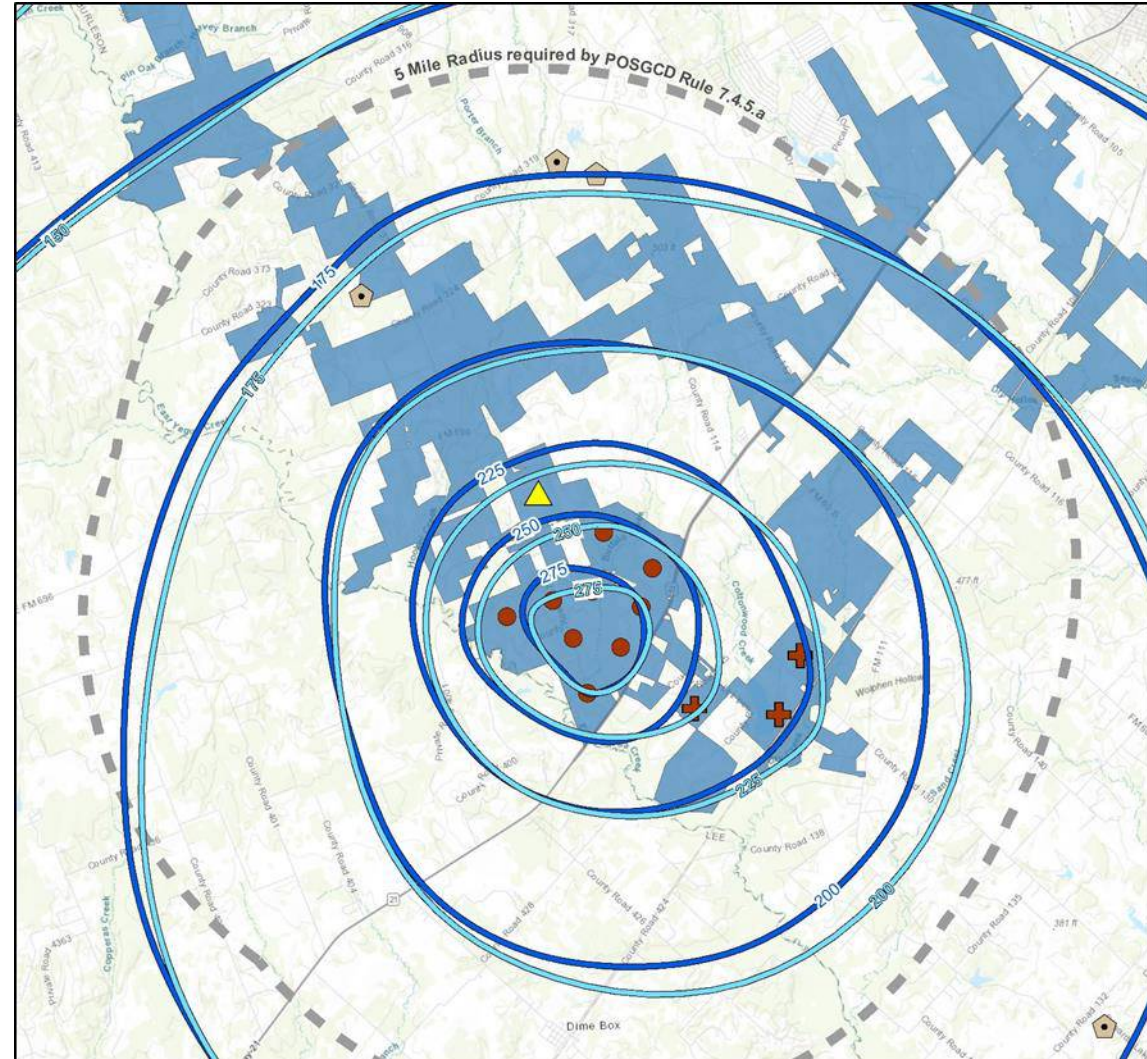
- Permitted location is distant from existing well field
- Requested site is at pipeline collection point and booster station
- Reduced well field footprint
- Increased reliability and efficiency of public supply water system



Model Results (Amendment 1)

Relocate PW-18

- Contours show 30-Year Simsboro Artesian Pressure Decline
- Light contours show drawdown from permitted PW-18
- Dark contours show drawdown from proposed PW-18 site



Permit Amendment 2

➤ Amendment 2: Increase Simsboro Production

- Current permit – 35,993 acft/yr
- Requested – add 4,842 acft/yr for total of 40,835 acft/yr

Increase Annual Simsboro Production

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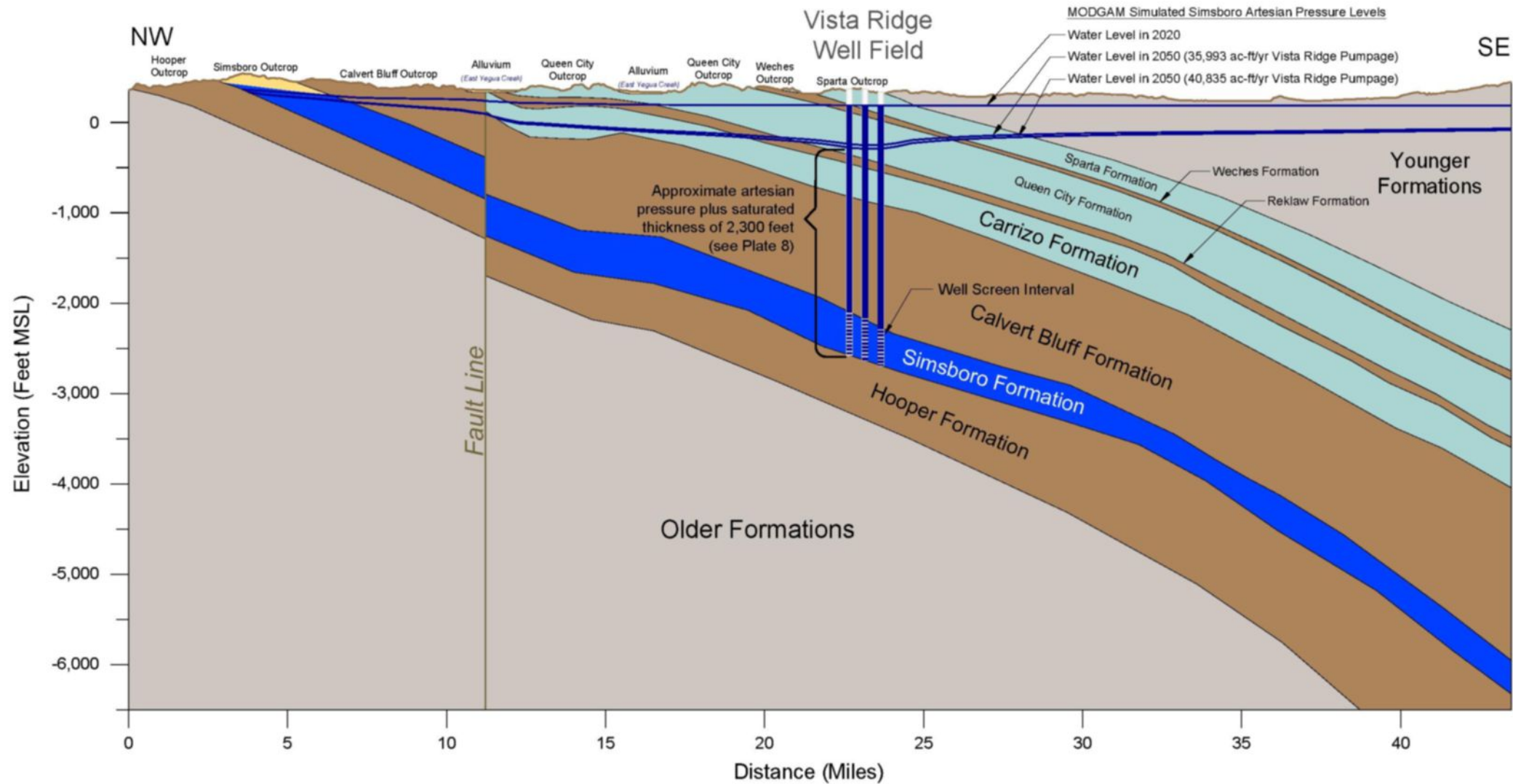
Increase Annual Simsboro Production

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Increase Annual Simsboro Production

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Model Results (Amendment 2)



Desired Future Conditions (DFC)

➤ Average drawdown (2000-2069) due to 40,835 acft/yr Vista Ridge pumpage plus DFC (PS-12) regional pumpage:

- Approximately 282 feet in POSGCD (36 feet below DFC)
- Approximately 156 feet in GMA-12 (72 feet below DFC)

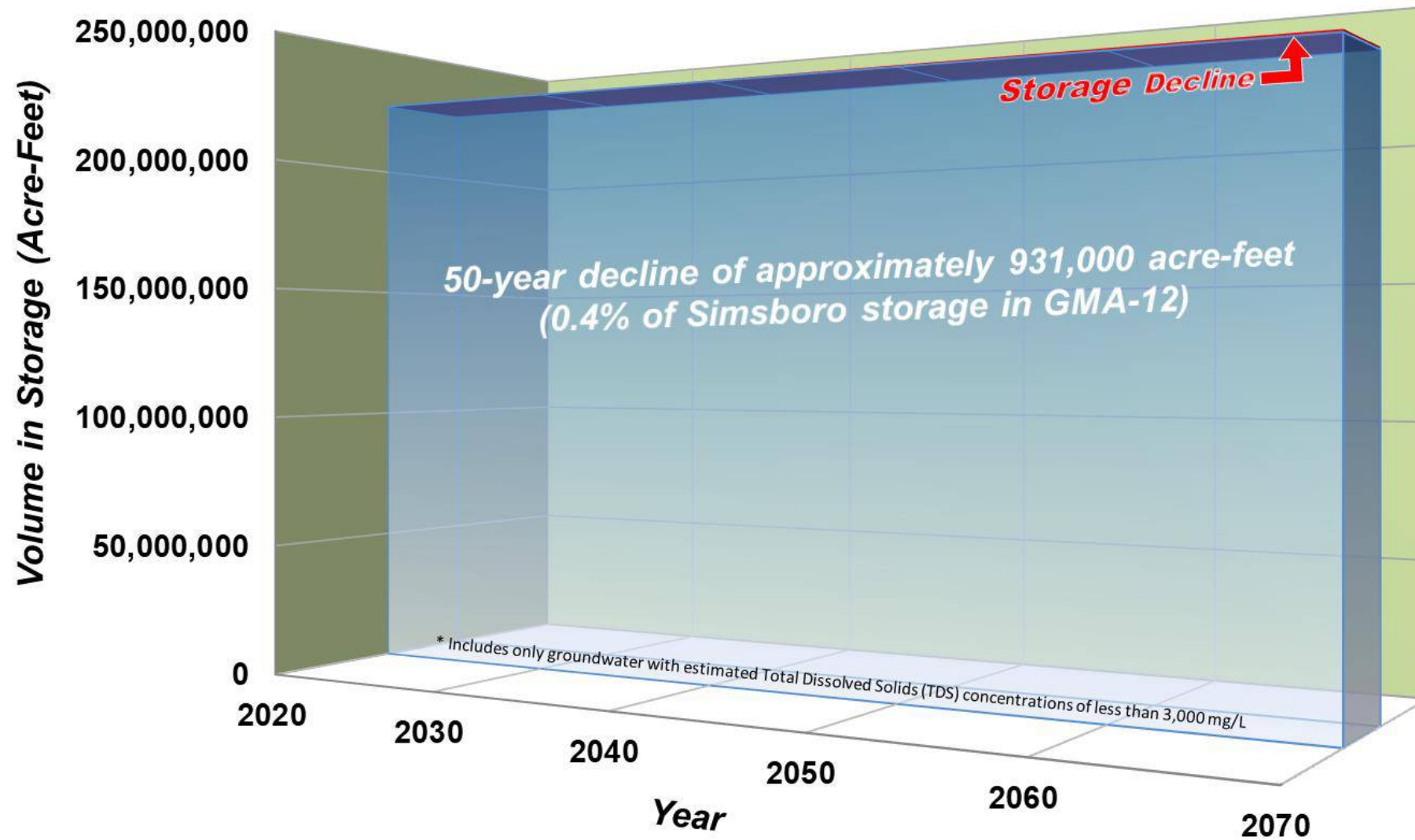
Groundwater Conservation District (GCD) or County	Desired Future Condition (DFC) Average aquifer drawdown (feet) measured from January 2000 through December 2069					
	Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Brazos Valley GCD	12	12	61	125	295	207
Fayette County GCD	47	64	110	--	--	--
Lost Pines GCD	5	15	62	100	240	165
Mid-East Texas GCD	5	2	80	90	138	125
Post Oak Savannah GCD	28	30	67	149	318	205
Falls County					-2	27
Limestone County				11	50	50
Narvarro County				-1	3	3
Williamson County	--	--	--	-11	47	69
GMA 12	16	16	75	114	228	168

http://www.twdb.texas.gov/groundwater/dfc/docs/summary/GMA12_DFC_2016.pdf

Simsboro DFC in POSGCD is 318 feet

Simsboro DFC in GMA-12 is 228 feet

Simsboro Storage



Permit Amendment 3

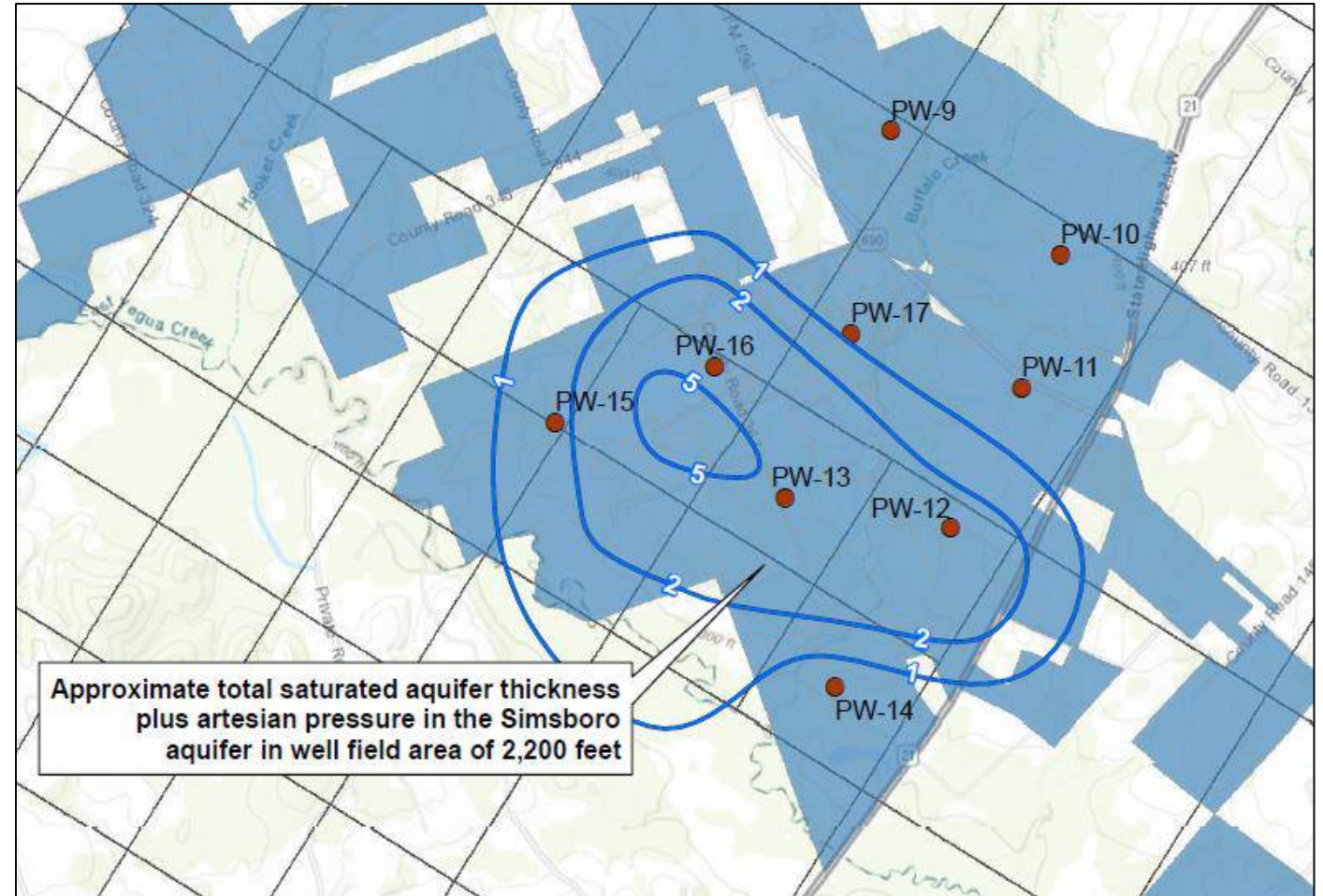
➤ Amendment 3: Reinstate 3,000 gpm Well Production Rates

- Minor relocation of wells for practical issues (access, drainage, etc.)
 - Instantaneous maximum well production rates are tied to well spacing (Rule 4.1)
 - Spacing between some well sites less than 3,000 feet; permitted maximum production rates reduced
- Restored well yields provide operational flexibility for public supply system
- Increased maximum well yield results in insignificant additional drawdown that affects only Vista Ridge wells

Model Results (Amendment 3)

Reinstate 3,000 gpm
maximum well production
rates

- Contours show additional
30-Year Simsboro
Artesian Pressure Decline



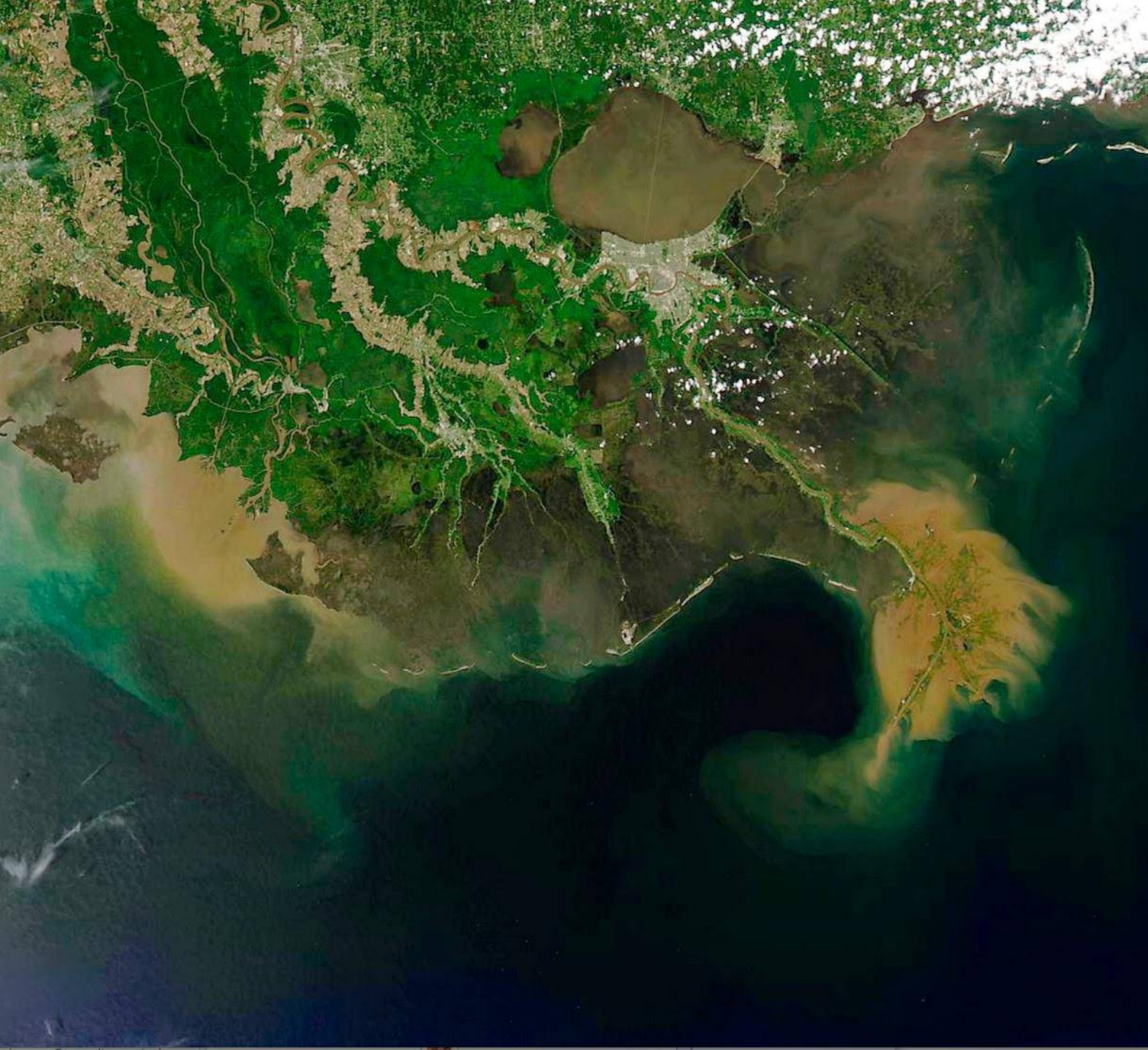
Summary

- Amendment 1: Relocate PW-18
 - Reduced project footprint
 - Increased efficiency of public supply system
 - Insignificant change in aquifer response

- Amendment 2: Increase Simsboro Production (4,842 acft/yr)
 - Increased public water system flexibility and reliability
 - Modeled aquifer response is consistent with currently-adopted DFC

Summary (Cont.)

- Amendment 3: Reinstate 3,000 gpm maximum well production rates
 - Provides operational flexibility for public supply system
 - Added artesian pressure drawdown is insignificant and impacts Vista Ridge wells only



Questions?

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