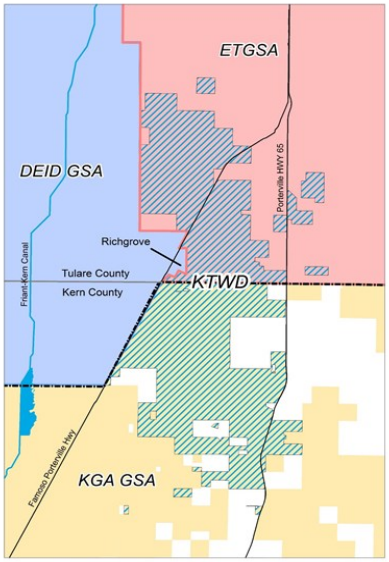
DRAFT

KERN-TULARE WATER DISTRICT: CHAPTER GSP SUMMARY

Location (Figure 1):

- KTWD is in both the KGA GSA and the Eastern Tule GSA. KTWD proposes to manage the entire district the same in both GSAs.

Figure 1: Plan Area



Outreach:

- In addition to outreach efforts by KGA GSA and ETGSA, KTWD hosted 5 landowner meetings in Visalia, Delano, and Bakersfield.

Geology (Figure 2):

- The primary source of groundwater within KTWD is from the Santa Margarita Formation, which is a confined aquifer that is hydraulically separate from the remainder of the basin.
- There is a salt water interface in the Santa Margarita just west of the District. There is concern that over pumping of the Santa Margarita will cause the undesirable impact of migration of poor-quality groundwater.

Hydrology (Figure 3):

- The period from 1993 to 2009 was a hydrologically average period.
- During this period groundwater levels in the Santa Margarita beneath KTWD were stable.
- The average Groundwater Pumping during this period was 9,454 AF (0.52 AF/yr).
- Post 2009, groundwater levels decreased as a result of drought, increased surface water costs, and further development east of the District.

Figure 2: Aquifers beneath KTWD

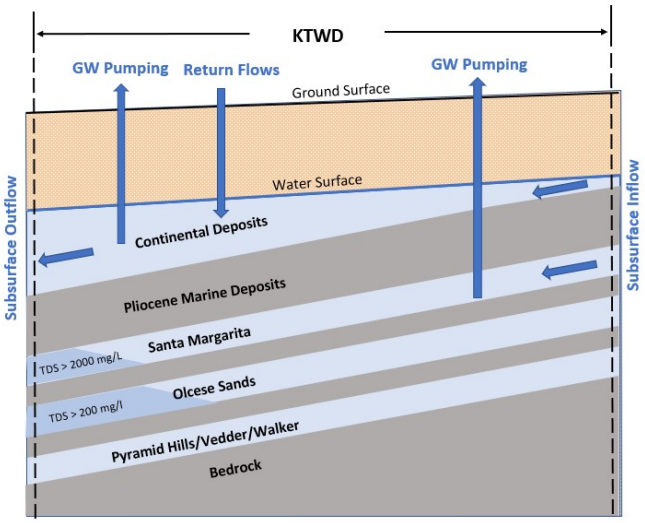


Figure 3: Santa Margarita groundwater levels

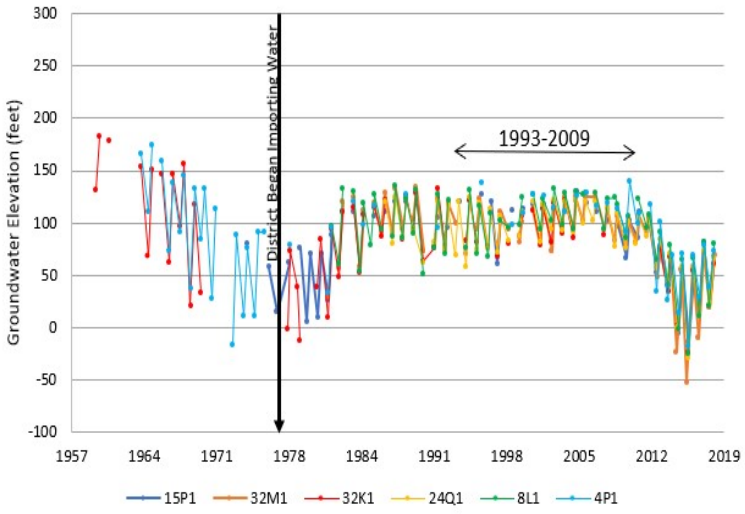


Table 1: Management Actions

Management Actions	Description	Resulting Groundwater Use (AF/ac)
Historic	1993 - 2009	0.52
Baseline: Current Conditions	Based upon 2017 cropping patterns and 2030 water supply conditions	0.85
Action 1: Pricing Incentives	Incentivize water users to use surface water when available by applying a groundwater charge to make surface water prices more competitive.	0.52
Action 2: Produced Water Project	Construct a pipeline to receive produced water from CRC.	0.45
Action 3: In-District Surface Storage	Construct 8,000 AF of surface storage reservoirs in KTWD to capture wet year flows	0.33

Checkbook Balance:

Table 2: Baseline Checkbook Balance

(AF/ac)	(AF/yr)	
-2.84	-49,494	ET from cropped acres
0.62	10,757	Precipitation on cropped acres
-0.03	-529	Runoff leaving District
1.93	33,706	Surface water deliveries
0.15	2,616	Native yield
-0.17	-2,944	Net groundwater balance

Table 3: Checkbook Balance with Management Action 1

(AF/ac)	(AF/yr)	
-2.84	-49,494	ET from cropped acres
0.62	10,757	Precipitation on cropped acres
-0.03	-529	Runoff leaving District
2.26	39,348	Surface water deliveries
0.15	2,616	Native yield
0.16	2,698	Net groundwater balance

Minimum Thresholds & Measurable Objectives :

- The groundwater level trend from 2006 to 2018 was projected out to 2040 to determine a minimum threshold of -150 ft elevation. The measurable objective for groundwater elevation is 20 ft.
- KTWD will coordinate with EWMA to prevent migration of the fresh-saltwater interface from the west.

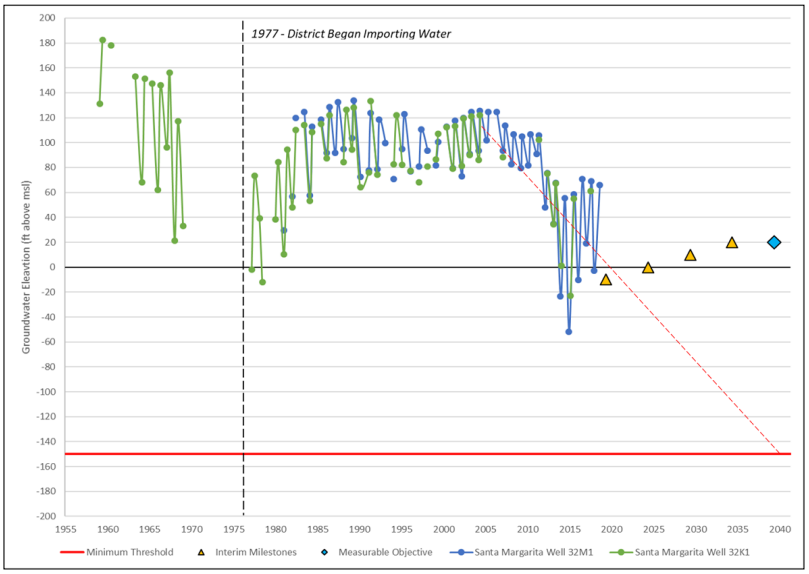



Figure 5: Minimum Threshold