Groundwater Condition
REPORT | SANTA CLARA COUNTY

September 2021

SUMMARY

This report summarizes August 2021 groundwater storage, recharge, pumping, and level conditions for the Santa Clara Subbasin (including the Santa Clara Plain and Coyote Valley groundwater management areas) and the Llagas Subbasin. Overall, countywide groundwater storage and water levels are declining because of extreme drought conditions. Table 1 summarizes current conditions.

Current groundwater levels in all index wells are below their 5-year averages due reduced recharge and increased pumping. While Valley Water is pursuing emergency imported water supplies for additional recharge, availability is uncertain. Assuming limited emergency imported water purchases and no additional water use reduction, total storage at the end of 2021 is projected to be in Stage 2 (Alert) of Valley Water's Water Shortage Contingency Plan.

- January to August managed recharge is 46% to 78% of the five-year average.
- January to July pumping is 109% to 133% of the five-year average.
- Groundwater index well water levels for August 2021 range from 10 to 18 feet lower than the August levels of 2020.

Table 1. Summary of Current Groundwater Conditions

	Santa Clara Subbasin		Llagas Subbasin
	Santa Clara Plain	Coyote Valley	
August 2021 managed recharge estimate	1,000	800	2,200
YTD managed recharge estimate	18,900	8,000	10,600
YTD managed recharge as % of five-year average	46%	69%	78%
July 2021 pumping estimate	9,100	1,700	5,700
January to July pumping estimate	47,600	7,200	22,700
January to July pumping as % of five-year average	133%	118%	109%
Current index well groundwater levels compared to August of 2020	14 feet lower	10 feet lower	18 feet lower

All volumes are in acre-feet; All data is for 2021 except where noted; YTD = Year-to-date

Contact Us For questions, contact
Roger Pierno at **(408) 630-2738**

Valley Water
Clean Water • Healthy Environment • Flood Protection

Groundwater Recharge

- Figures 1, 2, and 3 show the cumulative managed recharge for 2021 compared to the average of the previous five years (2016 – 2020).
- Through August, managed recharge is lower in the Santa Clara Plain, Coyote Valley, and Llagas Subbasin than the average of the previous five years due to drought conditions and limited surface water supplies.
- Managed recharge depends on many factors, including water demand and availability, regulatory needs, groundwater storage, and facility maintenance.

Figure 1. Estimated Cumulative Managed Recharge in the Santa Clara Plain

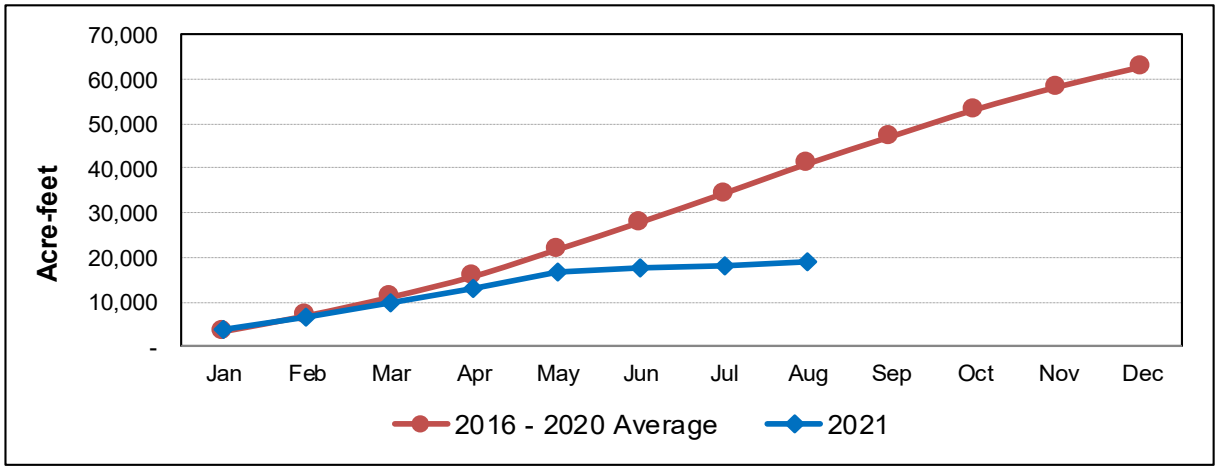


Figure 2. Estimated Cumulative Managed Recharge in the Coyote Valley

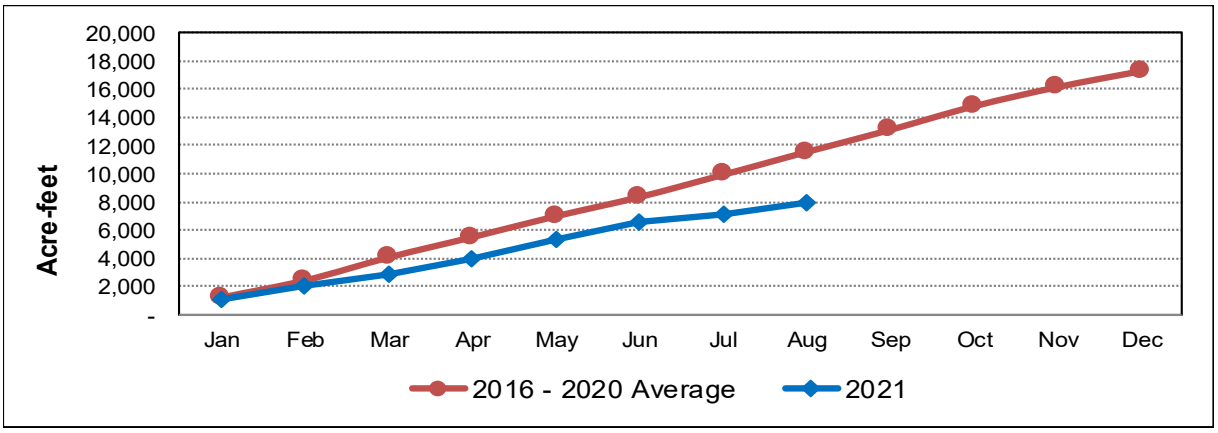
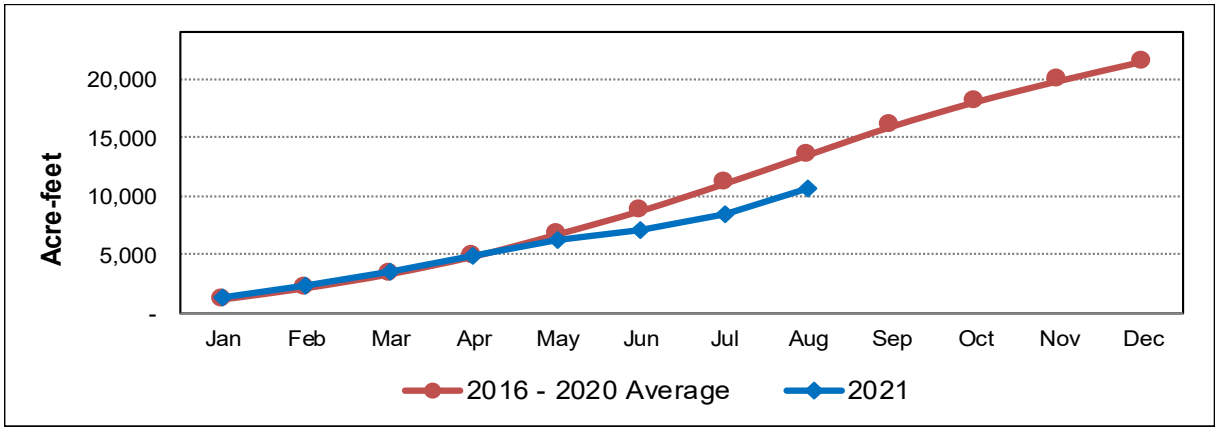


Figure 3. Estimated Cumulative Managed Recharge in the Llagas Subbasin



Groundwater Pumping

- Figures 4, 5, and 6 show the cumulative groundwater pumping for 2021 compared to the average of the previous five years (2016 – 2020).
- Pumping estimates for January to July 2021 are based on monthly reporting pumping data and pumping data from water retailers. July is most recent available pumping.
- 2021 pumping to date is higher than the average of the previous five years in the Santa Clara Plain, Coyote Valley, and Llagas Subbasin.

Figure 4. Estimated Cumulative Santa Clara Plain Pumping

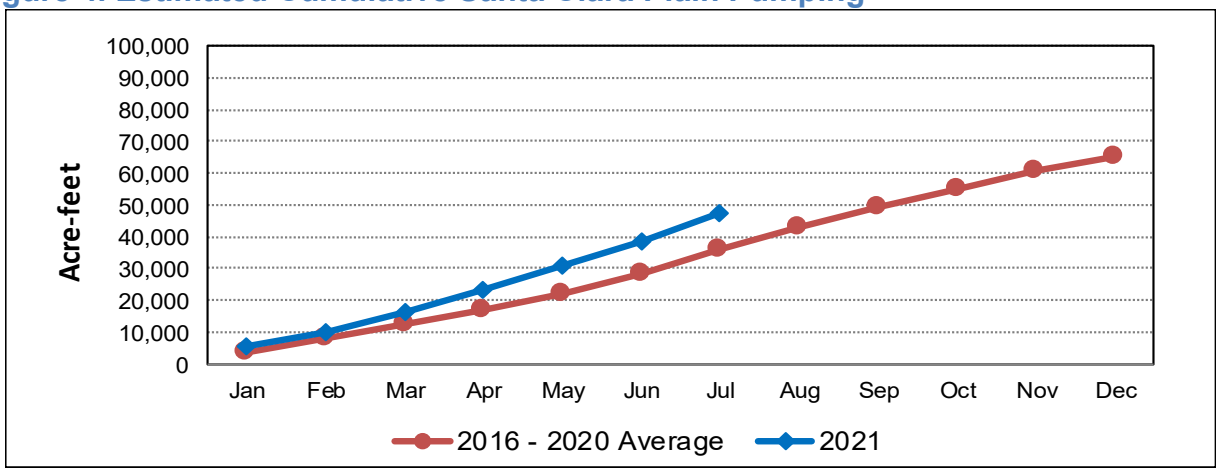


Figure 5. Estimated Cumulative Coyote Valley Pumping

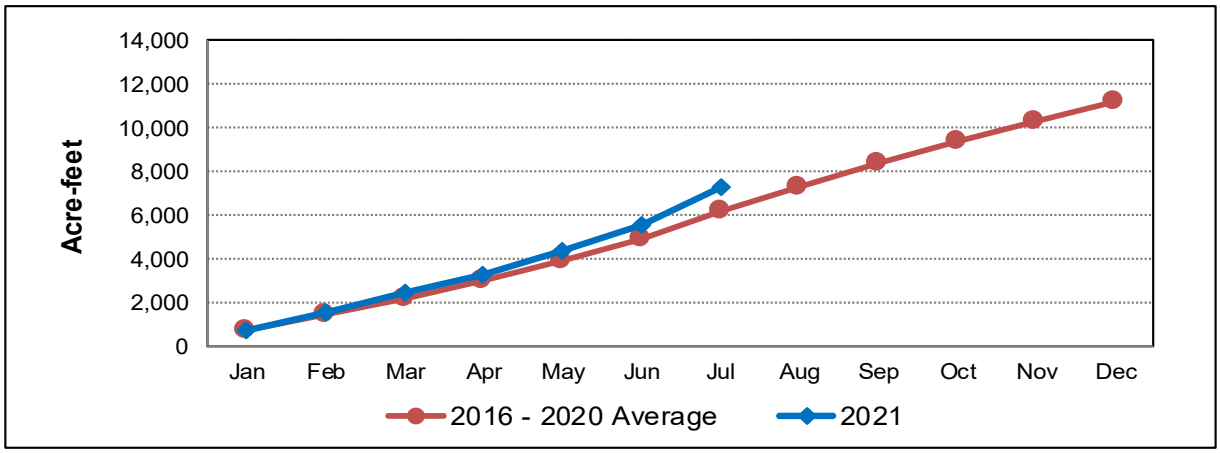
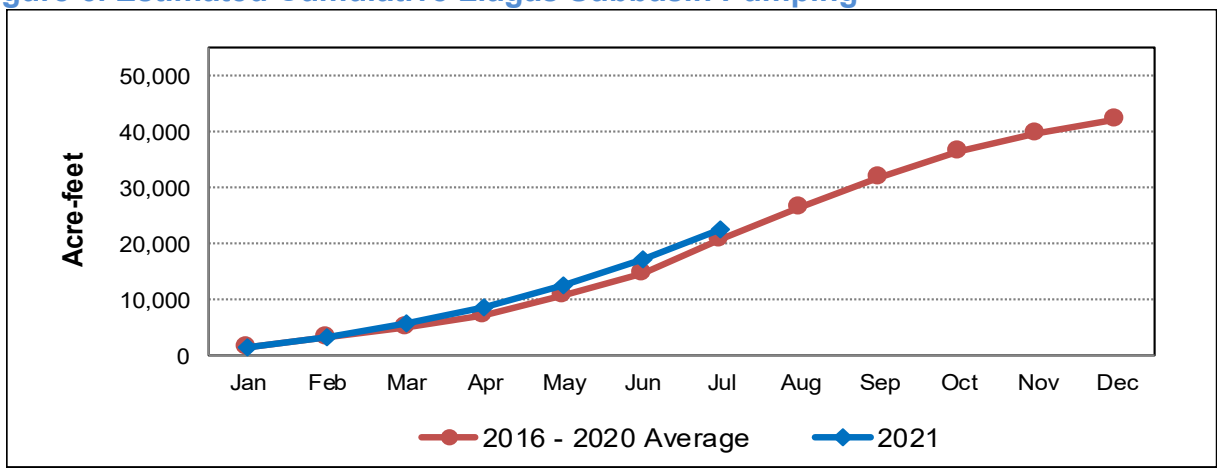


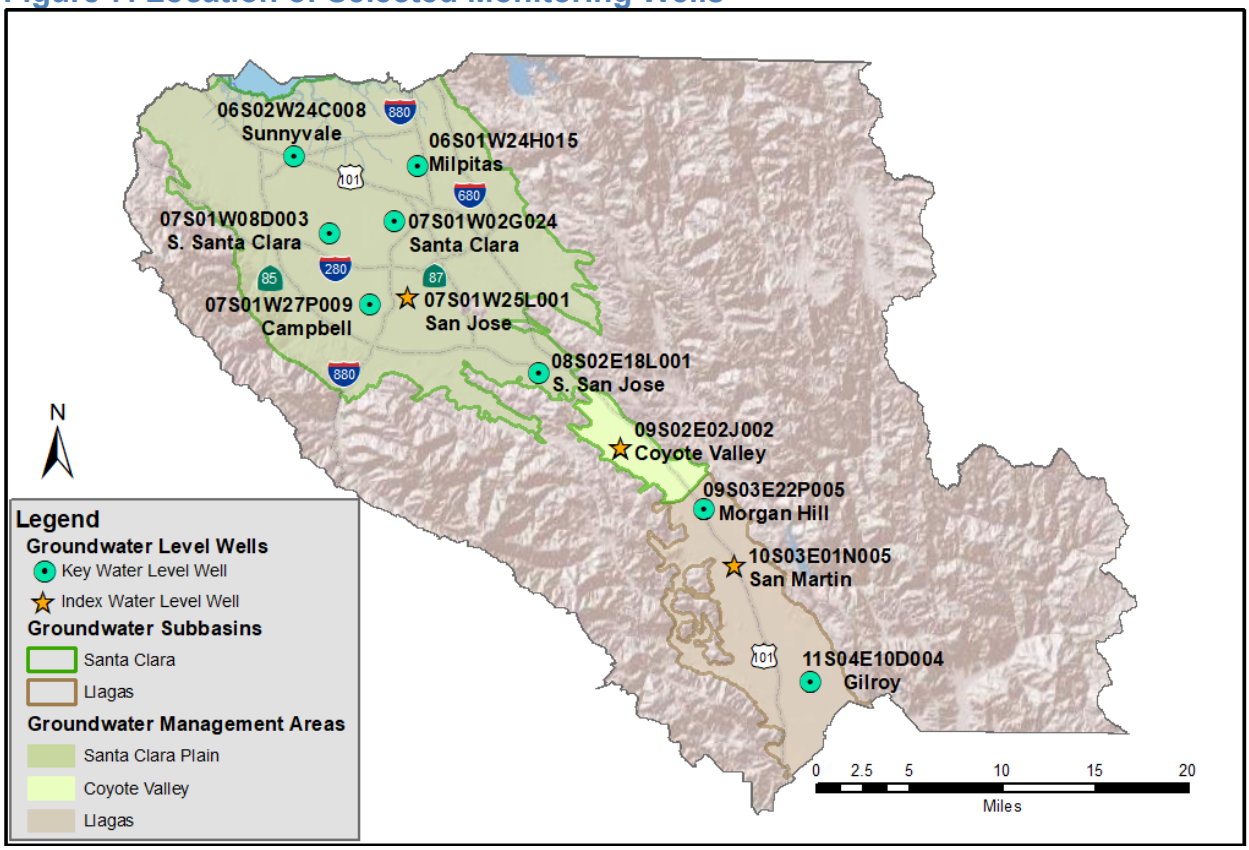
Figure 6. Estimated Cumulative Llagas Subbasin Pumping



Groundwater Levels

Groundwater levels continue to decline throughout the county due to extreme drought conditions. Current groundwater levels are represented using eleven monitoring wells distributed across the sub-basins, as shown in Figure 7.

Figure 7. Location of Selected Monitoring Wells

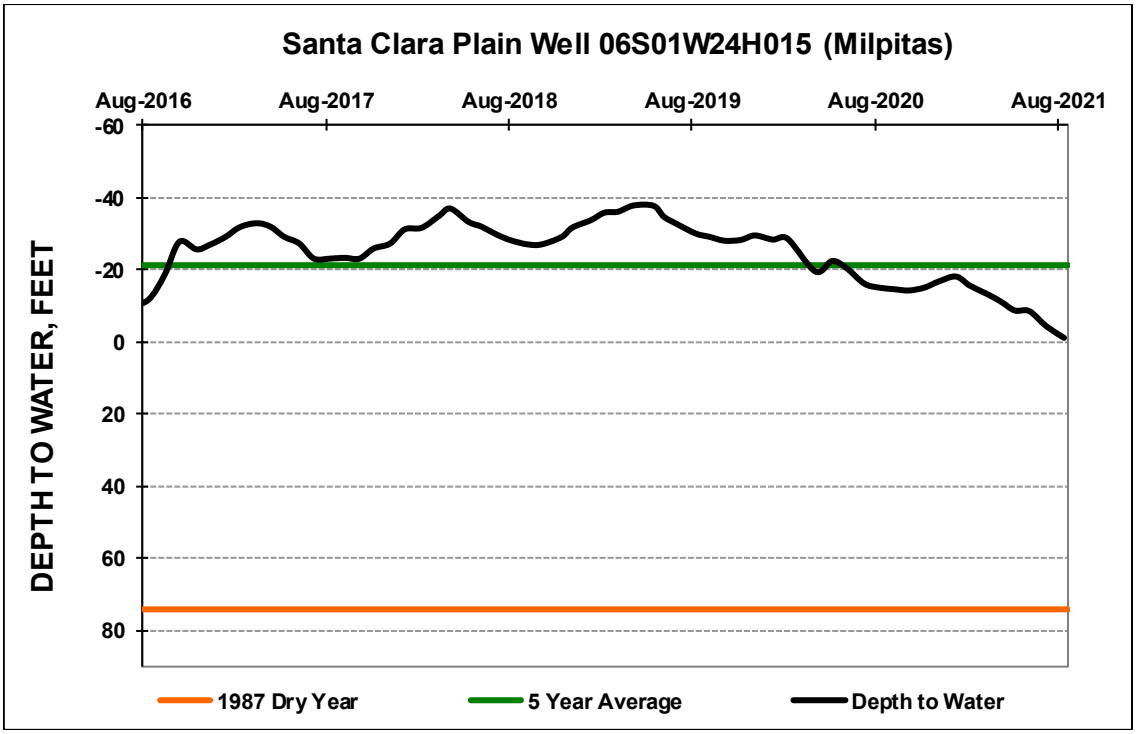


In Figures 8 through 18, hydrographs with August 2021 water levels from the eleven monitoring wells are compared to water levels from (i) July 2021, (ii) August 2020, (iii) August 2004 (a normal year), (iv) the prior five-year (2016-2020) average of August measurements, and (v) August 1987 (a dry year).

These hydrographs show that the August 2021 groundwater levels were:

i. Higher than July 2021 levels in one well by 2 feet and lower in ten wells by 1 to 11 feet,
ii. Lower than the August 2020 level in all eleven wells by 3 to 18 feet,
iii. Higher in three wells by 3 to 24 feet and lower in seven wells by 2 to 42 feet compared to August 2004 (a normal year); one well does not have a 2004 water level,
iv. Lower in all 11 wells by 3 to 44 feet, as compared to the average of the previous five-years of August readings, and
v. Higher in nine wells by 2 to 93 feet and lower in two wells by about 8 feet as compared to August 1987 (a dry year).

Figure 8. Milpitas Well Hydrograph



A measured value at Milpitas for 2004 is not available for comparison. Between March 1998 and October 2006, this well was flowing artesian and not measured. In October 2006, the well was modified to allow measurement of artesian pressures.

Figure 9. Sunnyvale Well Hydrograph

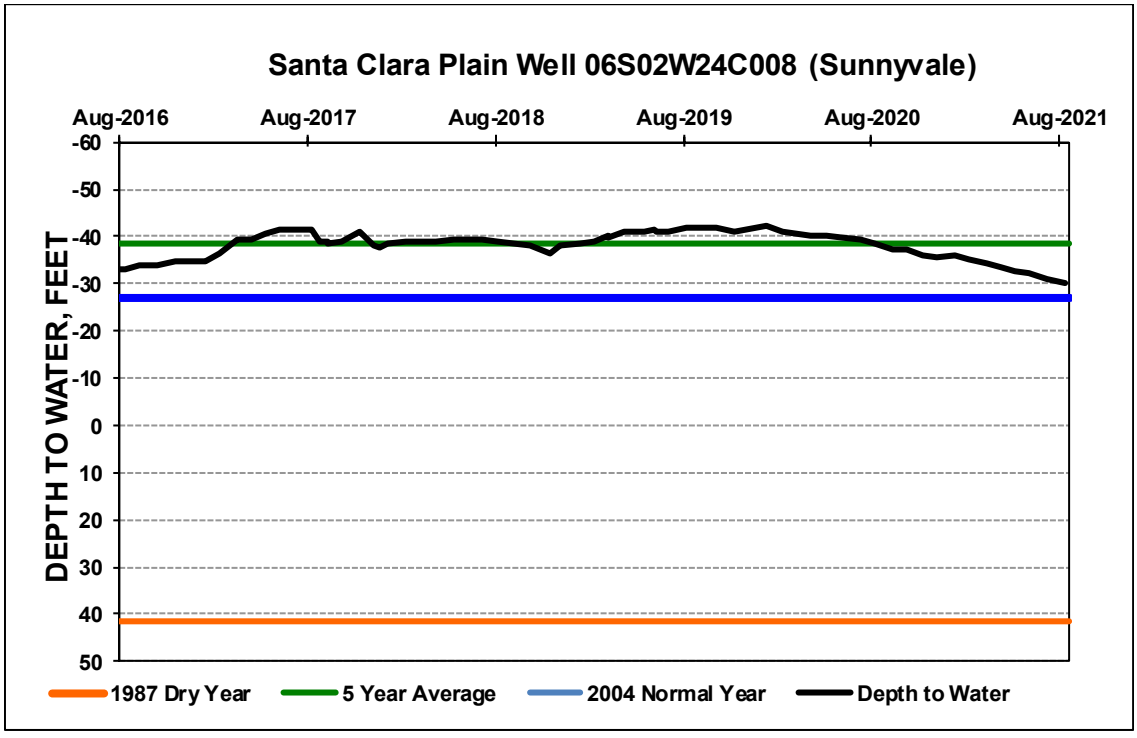


Figure 10. San Jose Well Hydrograph (Index Well for the Santa Clara Plain)

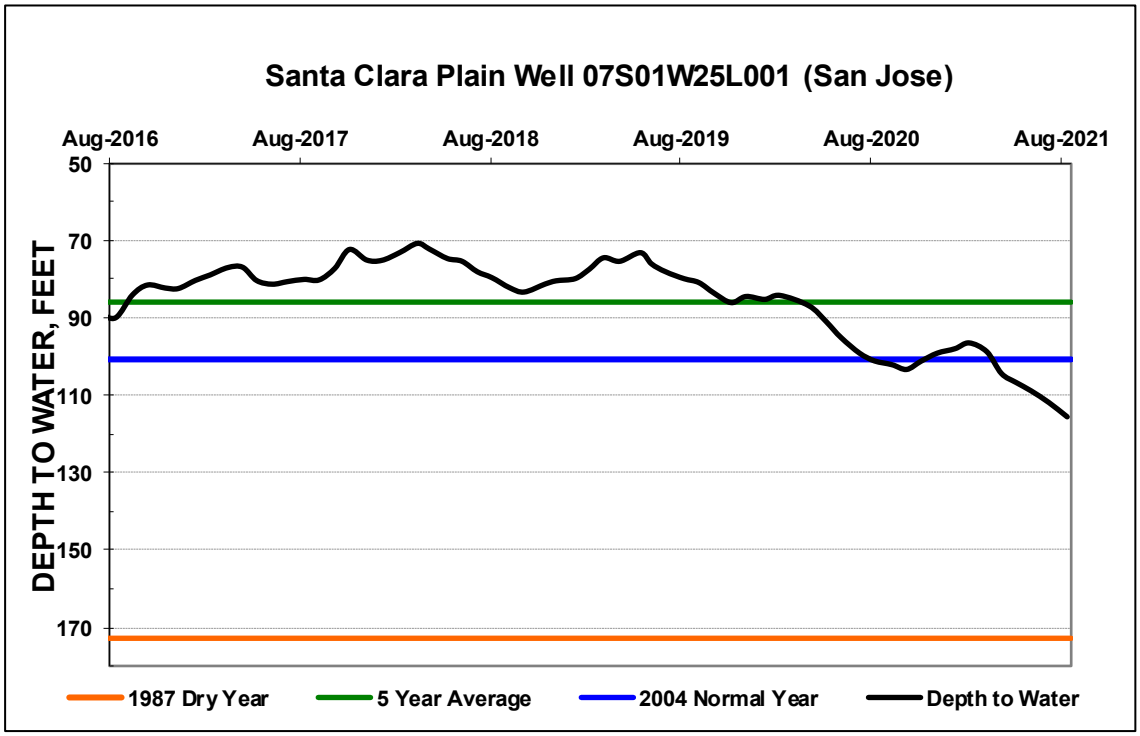


Figure 11. Santa Clara Well Hydrograph

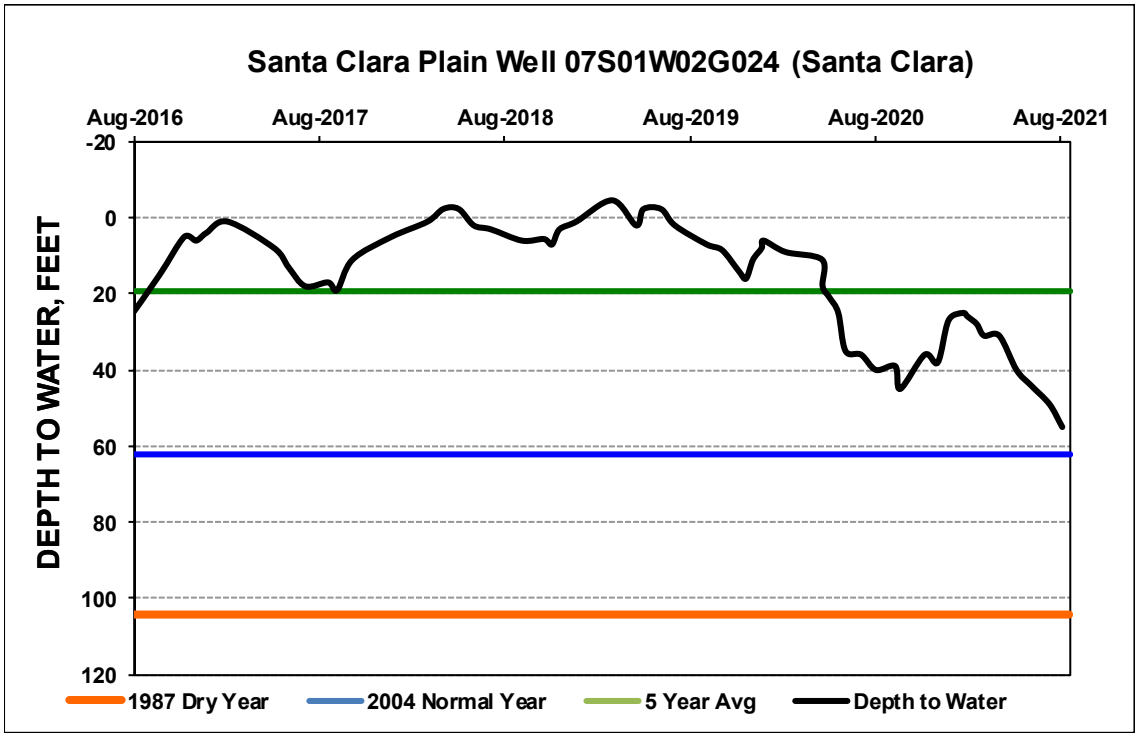


Figure 12. South Santa Clara Well Hydrograph

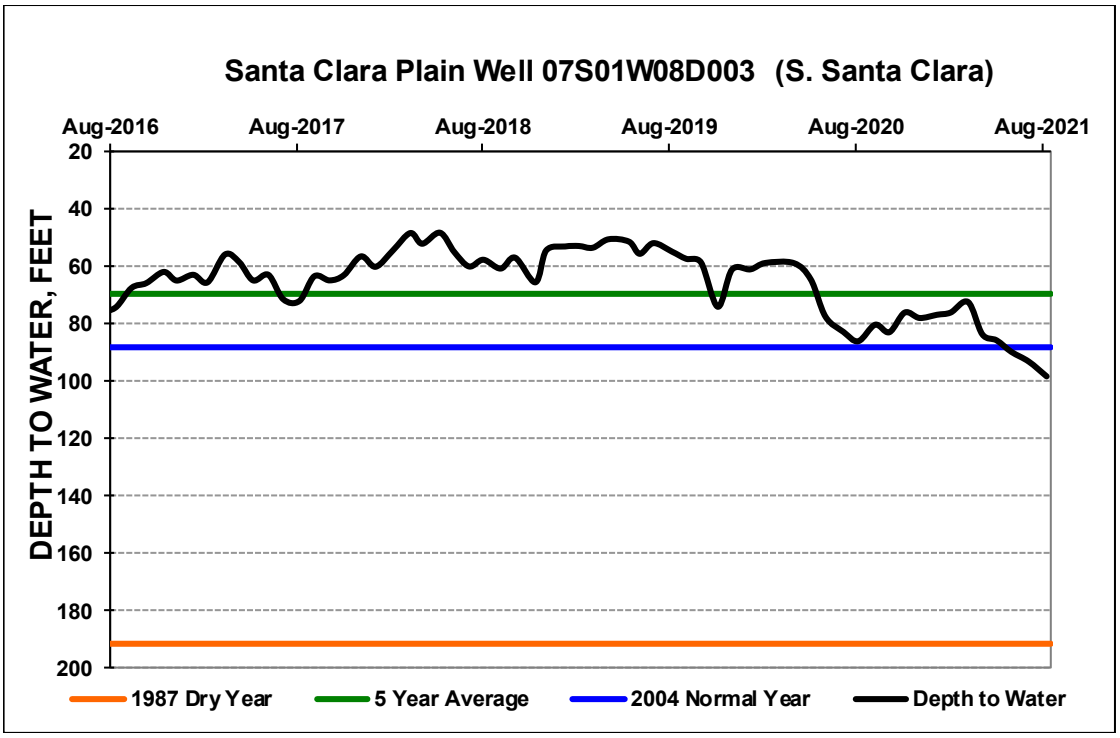
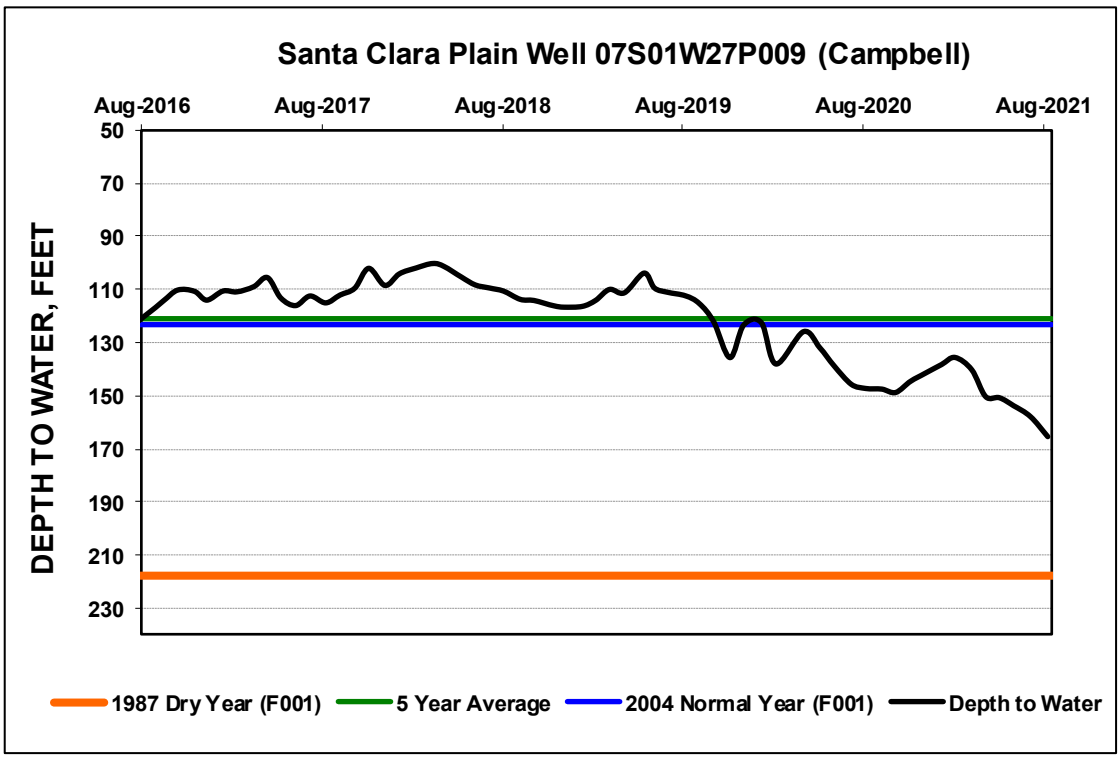


Figure 13. Campbell Well Hydrograph



The Campbell index well was replaced in August 2015 with a nearby well with similar water levels. Historic comparisons for 1987 and 2004 use data from the former index well (07S01W34F001).

Figure 14. South San Jose Well Hydrograph

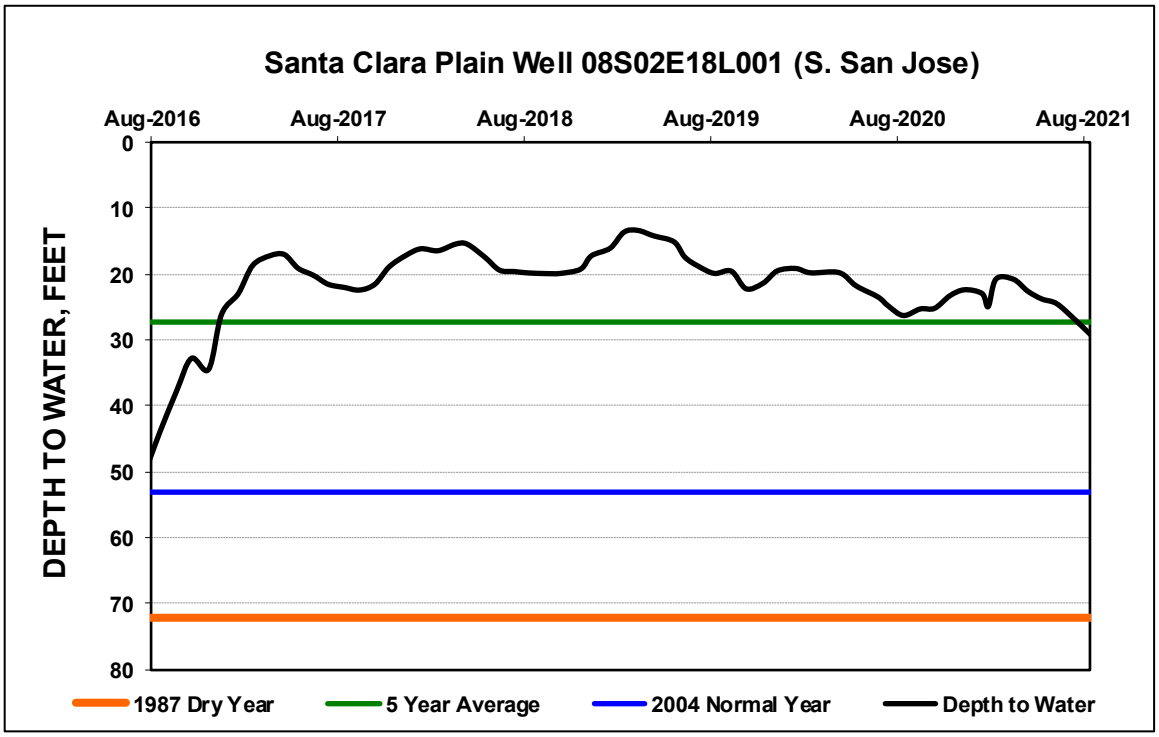


Figure 15. Coyote Valley Well Hydrograph (Index Well for the Coyote Valley)

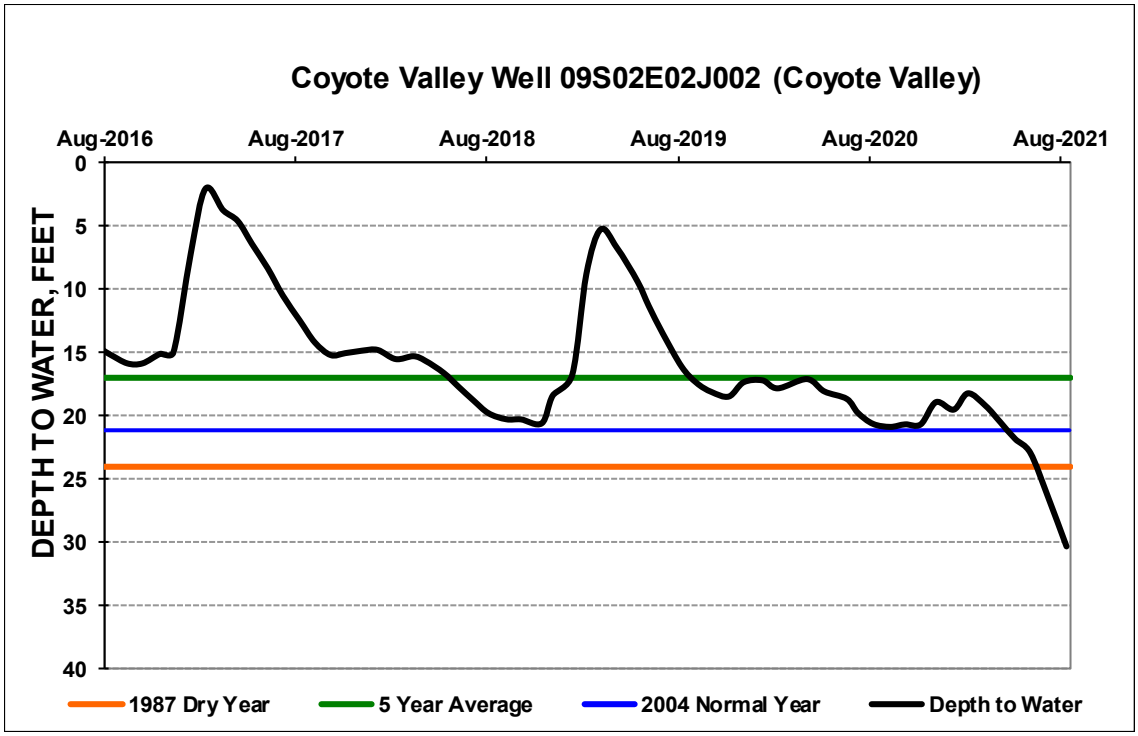


Figure 16. Morgan Hill Well Hydrograph

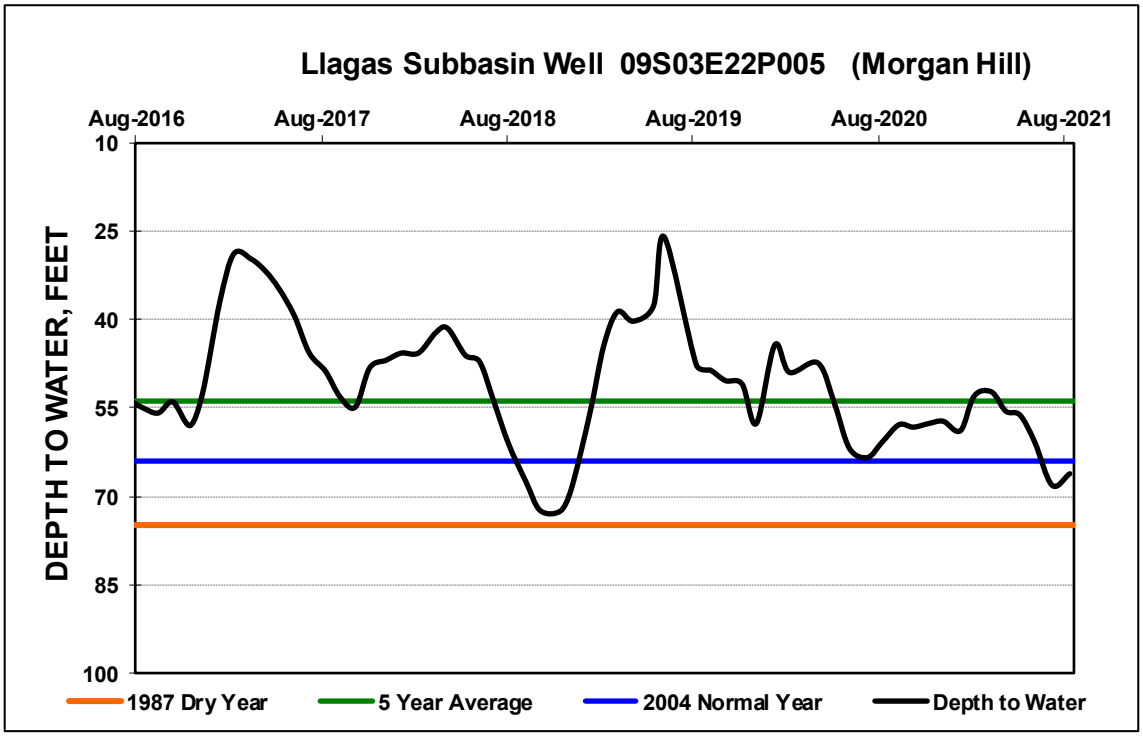
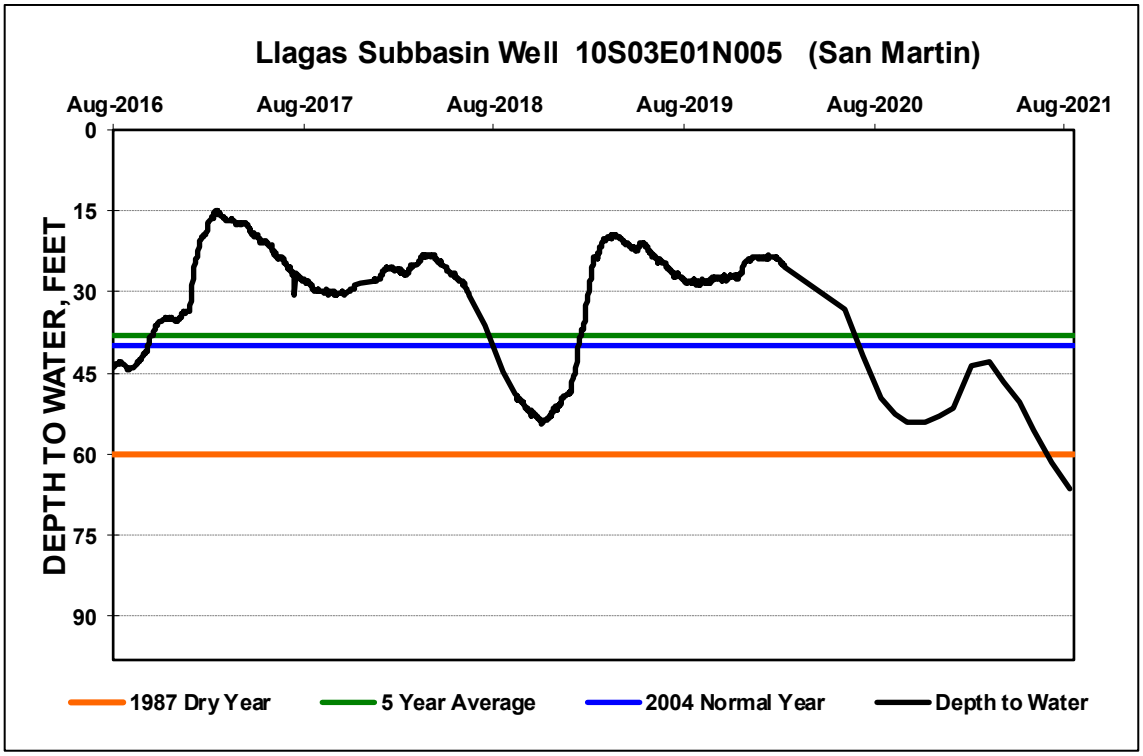


Figure 17. San Martin Well Hydrograph (Index Well for the Llagas Subbasin)



The San Martin index well was replaced in January 2021 with a nearby well with water levels similar to the prior well's but with a more complete record and improved access.

Figure 18. Gilroy Well Hydrograph