

4 May 2023

## MEMORANDUM

To: Michael Bolzowski (Cal Water)

From: Anona Dutton, PG, CHg (EKI)  
Sarah Hodson, PE (EKI)  
Patrick O'Connell, PG, CHg (EKI)

Subject: Assessment of Impacts of the Proposed Los Altos Suburban (LAS) Well 20-02 on Sustainable Groundwater Management  
California Water Service, Los Altos District  
(EKI C30027)

EKI Environment & Water, Inc. (EKI) is pleased to provide this technical memorandum to California Water Service Company (Cal Water) to assess the potential impacts of the proposed construction of Los Altos Suburban (LAS) District Well 20-02 (Project) on the sustainable groundwater management of the Santa Clara Subbasin (Basin; Department of Water Resources [DWR] No. 2-009.02). EKI understands that the City of Sunnyvale (City) is currently preparing an Environmental Impact Report (EIR) for the Project and has requested that Cal Water provide a memorandum that assesses the potential impacts of the proposed Well 20-02 on sustainable groundwater management within the Basin, including whether groundwater extractions from this well may contribute to land subsidence.

Per Cal Water's request, this assessment directly responds to the following four questions from the 2023 California Environmental Quality Act (CEQA) Statute and Guidelines<sup>1</sup> Appendix G that are related to groundwater management:

Section VII. Geology and Soils Question (c): *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Section X. Hydrology and Water Quality Question (a): *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

Section X. Hydrology and Water Quality Question (b): *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Section X. Hydrology and Water Quality Question (d): *Would the project Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

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<sup>1</sup> [2023 CEQA Statutes and Guidelines \(califaep.org\)](https://califaep.org)

## SUMMARY OF FINDINGS

EKI has determined the following in response to each of the four questions listed above. Findings are discussed in detail in the following sections of this technical memorandum.

- The Project is not expected to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- The Project is not expected to violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- The Project is not expected to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the Basin.
- The Project is not expected to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

## BACKGROUND

The Project site is located at Cal Water LAS District Station 20 on Assessor's Parcel Number (APN) 309-12-013, an approximately 0.77-acre lot in the City of Sunnyvale, California in Santa Clara County (see **Figure 1**). The Project includes the development and construction of one new municipal water supply well, Well 20-02. The preliminary design for Well 20-02 is described in the KYLE Well Site Assessment and Preliminary Well Design Technical Memorandum (KYLE, 2021), which specifies an 18-inch diameter stainless steel casing with a total completed depth of 810 feet and a 450-foot screened interval from 350 to 800 feet below ground surface (ft bgs). The assumed maximum pumping capacity of the proposed Well 20-02 is 1,200 gallons per minute (gpm). Assuming continuous (i.e., 24/7) operation of the well, the theoretical maximum potential annual yield of the well could be up to 1,935 acre-feet per year (AFY).

The Cal Water LAS District operates a wellfield of 19 active municipal supply wells, with seven active supply wells located within one mile of the Project site. The LAS District historically operated a supply well (Well 20-01; constructed in 1958) on the Project site, which was destroyed in 2016. Proposed Well 20-02 is designed to be constructed with a similar total depth, screened depth interval, and production capacity as the destroyed Well 20-01. The maximum pumping capacity of Well 20-01 was estimated to be 1,134 gpm (1,830 AFY); however, historical production at Well 20-01 ranged from approximately 140 to 1,100 AFY and averaged 610 AFY during the period 2000 to 2016, only one-third of the theoretical maximum annual production capacity. Assuming a similar operating schedule, average annual production at the proposed Well 20-02 would be on the order of 650 AFY.

The LAS District wellfield overlies the Basin, which is managed by the Santa Clara Valley Water District (Valley Water) as the exclusive Groundwater Sustainability Agency (GSA). Per Sustainable Groundwater Management Act (SGMA) regulations, Valley Water submitted a Groundwater Management Plan for the Santa Clara and Llagas Subbasins (Valley Water, 2016) as a SGMA-compliant Alternative Groundwater Sustainability Plan (Alt GSP). The Alt GSP for the Basin was approved by DWR in 2019. In 2021, Valley Water submitted a five-year update to the Alt GSP (Valley Water, 2021b), which is pending DWR approval.

The Alt GSP describes historical chronic declines in groundwater levels and land subsidence issues in the Basin. However, due to Valley Water’s investments in reservoirs, diverse water supplies, groundwater recharge, and management programs, groundwater conditions (including subsidence conditions) have been in recovery since the 1970s. As stated in the Alt GSP, “due to Valley Water’s comprehensive groundwater management activities, the subbasins are in long-term balance.” The assessment detailed below, and particularly the responses to *Hydrology and Water Quality Questions (b) and (d)*, considers how the proposed Project fits in with the sustainable groundwater management strategies outlined by Valley Water in the Alt GSP.

## **ASSESSMENT OF IMPACTS TO SUSTAINABLE GROUNDWATER MANAGEMENT**

As previously mentioned, this assessment responds directly to questions from the 2023 CEQA Statute and Guidelines that are related to groundwater management. Questions are listed in bold/italics, with EKI's evaluation below.

***Section VII. Geology and Soils Question (c): Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?***

Given that EKI is not aware of any existing geotechnical reports at the Project site, the response to this question is based on publicly available data and the geologic logging of Well 20-01 presented in the KYLE (2021) preliminary assessment.

Per the Seismic Hazards Mapping Act, the Department of Conservation, California Geological Survey (CGS) is required to identify and map “Seismic Hazards Zones”, areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking. As shown on the CGS Earthquake Zones of Required Investigation mapping tool<sup>2</sup> (see **Figure 2**), the Project is not in an area designated as being high risk of liquefaction or landslide. Furthermore, the proposed Well 20-02 is designed with a typical, state-required 50-foot-deep conductor casing and cement sanitary seal, and 250-foot-deep inner annular cement seal, to protect against any potential surface contamination and stabilize ground conditions surrounding the borehole during drilling and following well construction. Annular space created in the subsurface during drilling operations will be filled with annular fill materials during well construction. EKI is not aware of any prior unstable geologic units or soil conditions as result of the former (destroyed) Well 20-01, which was structurally sound for approximately 50 years. The stainless-steel casing material with appropriate 5/16-inch wall thickness can be expected to withstand corrosion and maintain structural integrity for several decades (as demonstrated in Section 4.3 of KYLE, 2021).

The average annual production of the LAS District from 2014 to 2021 was approximately 3,800 AFY (Cal Water, 2022). As shown in **Figure 3**, based on Interferometric Synthetic Aperture Radar (InSAR) data, there has only been approximately 0.01 feet (ft) of cumulative subsidence over a similar period, June 2015 to January 2023, which is equivalent to an average annual subsidence rate of 0.0015 feet per year (ft/year). This change in land elevation is substantially lower than the 95% certainty interval of accuracy (18

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<sup>2</sup> <https://maps.conservation.ca.gov/cgs/EQZApp/app/>

millimeters or 0.06 ft) of these measurements (Towill, 2022). Additionally, as discussed further in the response to *Hydrology and Water Quality Question (d)* below, this rate of subsidence is significantly less than the Alt GSP's maximum allowable subsidence rate of 0.01 ft/year; therefore, these rates of land subsidence are insignificant. Low rates of subsidence during this period suggests that historical Cal Water pumping volumes have minimal local subsidence impacts. Further, it is worth noting that the northeast-central area of the Basin has been more prone to subsidence than the southwest-central portions of the Basin underlying the Project site.

Given that the Project site is located outside of identified seismic hazard zones and that the historical subsidence rates have been minimal under similar levels of cumulative groundwater production, EKI concludes that the Project is not likely to be located on a geologic unit or soil that is unstable or could potentially result in, or contribute to, landslide, lateral spreading, subsidence, liquefaction, or collapse.

***Section X. Hydrology and Water Quality Question (a): Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?***

Stormwater discharges within the portion of Santa Clara County that encompasses the Project site are regulated by National Pollutant Discharge Elimination System (NPDES) requirements under the San Francisco Bay Municipal Regional Permit (MRP, Order No. R2-2022-0018). Pursuant to Provision C.15, the MRP allows for discharge of water produced during well construction activities, including well development water and pump test discharge water, providing that both the water to be discharged and the receiving water body (i.e., the surface water stream into which the storm sewer discharges) are sampled and monitored for pH and turbidity, and record keeping of all best practices are employed.

Specific water quality parameters from the permit are listed below:

- Per C.15.b.i.(1)(b)(vi) – “Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.”
- Per C.15.b.i.(1)(b)(vii) – “The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.”

The KYLE (2021) preliminary assessment states that waste fluids generated during development and testing of proposed Well 20-02 will likely be discharged to the storm drain located at the southwestern corner of Carlisle Way and Kingfisher Way, approximately 350 ft from the Project site. High turbidity water generated during well development will be conveyed to two 21,000-gallon temporary holding tanks to allow settling of suspended solids prior to discharge. The driller will be responsible for compliance with the MRP.

Additionally, drawdown associated with pumping from proposed Well 20-02 may cause a downward vertical hydraulic gradient underneath the Project site, which has the potential to mobilize nearby

contaminant plumes and degrade local groundwater quality. EKI evaluated the 26 cleanup sites<sup>3</sup> that are listed within one mile of the proposed Well 20-02 on the State Water Resources Control Board's (SWRCB's) GeoTracker database (SWRCB, 2020). EKI did not find that any of these sites have groundwater contamination plumes that are likely to be mobilized by pumping at the proposed Well 20-02, for the reasons listed below.

- Twenty out of the 26 sites had no reported contaminant releases to groundwater (i.e., contaminant concentrations were only detected in soil, soil vapor, or indoor air).
- Three out of the six sites with reported releases to groundwater are closed cases with most recent groundwater sample concentrations reported below detection limits for all constituents of concern (COCs).
- One out of the six sites with reported releases to groundwater is a closed leaking underground storage tank (LUST) case with restrictions placed on future land use changes due to remaining concentrations on site (Santa Clara Department of Environmental Health, 2015). Following remedial action, the lateral extent of contamination was determined to be limited to just outside property boundaries. This site is located 0.3 miles northeast and downgradient of the Project well. Given the limited extent of contamination and downgradient distance from the Project site, the remaining contaminant plume is not anticipated to be affected by pumping at proposed Well 20-02.
- Two out of the six sites with reported releases to groundwater are open cases and under review. The cleanup status and extent of contamination is summarized below.

*Apple – Former HP – Wolfe Rd (T10000004186):* This Cleanup Program Site is located approximately one mile southeast and cross gradient to the Project site. Results of an investigation conducted in 2000 showed that shallow groundwater had been impacted by volatile organic compounds (VOCs), trichloroethene (TCE), tetrachloroethene (PCE), and Freon 113. The plume was limited to a lateral extent to 200 feet northeast of the site and a vertical extent of 125 ft bgs. Apple redeveloped the site in 2017, including sampling, screening, and removal activities in accordance with a soil management plan. Confirmation sampling results indicated that all groundwater concentrations of COCs were below the applicable Environmental Screening Levels (ESLs), and the site met criterion for unrestricted use (EKI, 2019). Due to the success of the remedial action as indicated by confirmation sampling results, as well as the limited lateral and vertical extent of the original plume in the perched aquifer, pumping from the deep aquifer at the proposed Well 20-02 is not expected to mobilize contaminants from this site.

*El Camino Plaza – (T10000011653):* This Cleanup Program Site is located approximately 0.8 miles northeast and downgradient of the Project site. Results of an investigation conducted in 2017 showed that soil had been impacted by VOCs and PCE. An additional investigation was conducted in 2019 to characterize the extent of contamination in shallow groundwater, and sample concentrations were all reported below ESLs. It was

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<sup>3</sup> KYLE (2021) lists 32 cases of environmental concern within approximately one-mile of the Project site. This count includes six permitted underground storage tanks with no reported leaks.

recommended that no further groundwater sampling or characterization occur (PIERS, 2019). Given that concentrations COCs in groundwater were reported below ESLs and release of contaminants was largely limited to soil, this site is not expected to cause substantial degradation of groundwater quality that could be exacerbated by the proposed Well 20-02.

The discharge considerations specified in the KYLE (2021) assessment are consistent with the requirements of the San Francisco Bay MRP. Therefore, assuming that the drilling contractor follows discharge water quality requirements specified in the MRP, EKI concludes that the Project should not violate any water quality standards or waste discharge requirements. Further, groundwater quality conditions in the vicinity of the Project well are generally good, and there are no reported contaminant plumes in the vicinity of the Project well that are likely to be mobilized by pumping at proposed Well 20-02 or otherwise substantially degrade groundwater quality.

***Section X. Hydrology and Water Quality Question (b): Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?***

Groundwater elevations in the Basin have been in recovery since the early 1970s and relatively stable since the late-1990s, during the period that the LAS District wellfield has historically operated. As discussed above, the proposed Well 20-02 will be designed to have a maximum pumping capacity of 1,200 gpm (KYLE, 2021) and a theoretical maximum annual yield of 1,935 AFY. The designed size and pumping capacity of this well is similar to the destroyed Well 20-01, which pumped up to 1,100 AFY during the 2000 to 2016 time period.

The Alt GSP states the following regarding the Basin's sustainable yield and available groundwater supplies (underlining added by EKI to show emphasis):

*"Valley Water does not manage to a particular value for sustainable yield, but instead manages groundwater to maintain sustainable conditions through annual operations and long-term water supply planning.*

*...The Santa Clara Subbasin is not in a condition of chronic overdraft due to Valley Water's managed recharge of local imported water as well as in-lieu recharge activities. The hydrographs presented in Chapter 2 and balanced water budgets in this chapter demonstrate that long-term average yields are sustainable."* (Section 4.4.1.1 of Valley Water, 2021b)

Notably, Valley Water does not manage the Basin to a specific sustainable yield volume; rather, it aims to maintain sustainable conditions throughout the Basin (see further discussion of "sustainable conditions" in EKI's response to *Hydrology and Water Quality Question (d)* below). Given that the planned pumping capacity of the proposed Well 20-02 is similar to the historical operations of destroyed Well 20-01, the Project should not cause a decrease in groundwater supplies that is substantially greater than what was caused historically by Well 20-01, which was operated during a period of sustainable management and increasing or stable groundwater levels in the Basin. The maximum potential yield of the new well (1,935 AFY) is statistically insignificant (less than 1%) of the Basin's estimated groundwater storage, and approximately 2% of the Basin's average annual groundwater production between 2010 to 2019, as presented in Table 4-3 of the Alt GSP.



Analysis included in the Alt GSP suggests that 200,000 AFY could potentially be pumped in the Santa Clara Plain of the Basin before causing land subsidence (Section 4.4.1.1 of Valley Water, 2021b), and average groundwater production between 2010 and 2019 was well below this limit (87,000 AFY). The Valley Water 2020 Urban Water Management Plan (UWMP; Valley Water, 2021c) and Alt GSP estimate that Santa Clara County-wide demands to increase by about 13% by 2045 relative to 2020, and retailer demands are projected to increase by about 4% between 2025 and 2045. Notably, these projections are still below the peak demands of the 1980s and 1990s and the 200,000 AFY groundwater pumping threshold for land subsidence, and Valley Water anticipates being able to meet demands through 2045. Additionally, the Alt GSP does not place restrictions on the construction of new wells. Therefore, the Project and associated pumping capacity is consistent with the anticipated sustainable management of Basin, as outlined in the Alt GSP.

Regarding the potential for the Project well to interfere with groundwater recharge, the only expected impact of pumping the proposed Well 20-02 would be an increase in the storage capacity of the groundwater system, which would allow for additional recharge. Valley Water operates several managed aquifer recharge (MAR) facilities, the closest of which are approximately 1.5 miles from the Project site (see Figure 2-15 of Valley Water, 2021b).

Given the historical and projected sustainability of the Basin as demonstrated in the Alt GSP, EKI finds that on a Basin-scale, the Project should not substantially decrease groundwater supplies or interfere substantially with groundwater recharge or impede sustainable groundwater management of the Basin.

***Section X. Hydrology and Water Quality Question (d): Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

As discussed above, Valley Water's Alt GSP is the SGMA-compliant groundwater management plan for the Basin. As such, EKI evaluated the Sustainable Management Criteria (SMC) defined in the Alt GSP to determine whether the Project could potentially conflict with or obstruct plan implementation. The Alt GSP evaluates groundwater conditions based on "Outcome Measures" (similar to Measurable Objectives defined in SGMA) and "Lower Thresholds" (similar to Minimum Thresholds defined in SGMA) associated with the six SGMA sustainability indicators. Below, EKI evaluated whether the Project is likely to conflict with the SMC set for each sustainability indicator and obstruct compliance with the Alt GSP.

Groundwater Levels and Subsidence – Valley Water monitors groundwater levels as a proxy for evaluating land subsidence, and as such, these two sustainability indicators share Outcome Measures and Lower Thresholds. Groundwater levels and subsidence are monitored for compliance with the Alt GSP at 10 subsidence index wells, the closest of which (Well ID 07S01W08D003) is located one mile southeast of the Project site. The Outcome Measure at each subsidence index well is defined as the groundwater elevation that occurs at a subsidence rate of 0.01 ft/yr, which is the allowable rate of subsidence in the Alt GSP. The Lower Threshold is defined as the historic low water level at each subsidence index well.

Groundwater elevations at Subsidence Index Well 07S01W08D003 have ranged from approximately 0 to 80 feet above mean sea level (ft msl) from 2002 to 2022, which are significantly higher than the Outcome Measure and Lower Threshold of -44 and -148 ft msl, respectively. EKI also notes that these conditions were observed when the destroyed Well 20-01 was in production (2002-2011), which suggests that the similar amount of pumping proposed by the Project would not have significant effects on groundwater

levels. Additionally, the KYLE (2021) assessment presents hydrographs that show that water levels at the Project site increased from approximately -150 ft msl to 70 ft msl between 1970 and 2000 and were stable through Well 20-01 destruction in 2016, demonstrating long-term stability in groundwater elevations despite historical rates of groundwater production at the Project site.

With regards to subsidence, recent InSAR data shows that there was approximately 0.01 ft of cumulative subsidence over the 7.5-year period from June 2015 to January 2023, which is equivalent to an average annual subsidence rate of 0.0015 ft/yr that is significantly below the Alt GSP's allowable subsidence rate of 0.01 ft/yr and within measurement error.

Due to increasing and stable groundwater trends during the operational period of Well 20-01, and insignificant amounts of recent subsidence, EKI does not find that the Project (which is anticipated to essentially produce groundwater at a similar rate to Well 20-01) would substantially impact compliance with the groundwater levels and subsidence SMC.

Groundwater Storage – The Lower Threshold for groundwater storage is defined as when the projected end of year countywide groundwater storage is greater than Stage 5 of the Valley Water 2020 Water Shortage Contingency Plan (WSCP), or 150,000 acre-feet (AF; see Valley Water, 2021a). The Outcome Measure for groundwater storage is defined as when the projected end of year groundwater storage is greater than 278,000 AF.

The maximum potential yield of the new well (1,935 AFY) is statistically insignificant (less than 1%) of the Basin's estimated groundwater storage (approximately 350,000 AF), and approximately 2% of the Basin's groundwater production from 2010-2019, as presented in Table 4-3 of the Alt GSP. Therefore, EKI expects the Project will not have a significant impact on the groundwater storage SMC.

Groundwater Quality – The Alt GSP identifies total dissolved solids (TDS) and nitrate as the primary constituents of concern in the Basin. The Lower Threshold for groundwater quality is defined as at least 70% of water supply wells having stable or decreasing trends for nitrate and TDS. The Outcome Measure for groundwater quality is defined as at least 95% of water supply wells meeting primary drinking water standards, and at least 90% of public supply wells having stable or decreasing trends for TDS. Given that the Project is a proposed water supply well, EKI evaluated the historic concentrations of TDS and nitrate at, and in the vicinity of, the Project site to determine whether drinking water standards are likely to be met at proposed Well 20-02.

While there are no primary regulatory standards for TDS, the Secondary Maximum Contaminant Level (SMCL) is an aesthetic (i.e., not health-based) standard for TDS and ranges from 500 milligrams per liter (mg/L; recommended limit) to 1,000 mg/L (upper limit). Historical concentrations of TDS in Well 20-01 ranged from 350 to 475 mg/L during a 30-year period from 1981 to 2011, below the Recommended SMCL (see Figure 5 of KYLE, 2021). Further, TDS concentrations in wells within 1.5 miles of the Project site ranged from 360 to 553 mg/L from February 1980 to December 2018, below the upper SMCL (GAMA, 2023). Given that historical concentrations of TDS at and in the vicinity of the Project site are below the upper SMCL and below or near the recommended SMCL, TDS concentrations in the proposed Well 20-02 are not expected to affect compliance with groundwater quality SMC.



The primary, health-based Maximum Contaminant Level (MCL) for nitrate is set as 10 mg/L. Historical concentrations of nitrate in Well 20-01 ranged from 4.5 to 7.5 mg/L during a 30-year period from 1981 to 2011, below the MCL (see Figure 6 of KYLE, 2021). Further, nitrate concentrations in wells within 1.5 miles of the Project site range from 1.6 to 12.2 mg/L from February 1980 to May 2020, and averaging 5.8 mg/L (KYLE, 2021). EKI notes no wells<sup>4</sup> within 1.5-mile radius of the Project site have had a nitrate MCL exceedance within the past 10 years (GAMA, 2023). As such, it is unlikely that proposed Well 20-02 would exceed the nitrate MCL or affect compliance with groundwater quality SMC.

Section 3.3 of KYLE (2021) estimates groundwater quality blend of produced groundwater from the Project LAS Well 20-02 for TDS, nitrate, iron and color are all at concentrations/levels below their respective regulatory thresholds, based on historical data from Well 20-01. Given that historical groundwater quality data at and in the vicinity of the Project site shows that groundwater quality is generally below primary drinking water standards, EKI agrees with findings of the KYLE (2021) assessment and does not expect this Project to impact compliance with groundwater quality SMC.

Seawater Intrusion – The Lower Threshold for seawater intrusion is defined as when the 100 mg/L chloride isocontour area of the shallow aquifer is less than 81 square miles, which represents a one-mile radial buffer of the historical maximum extent area. The Outcome Measure is defined as where and when the 100 mg/L chloride isocontour area is less than the historical maximum extent area (57 square miles).

Given that the Project site is located approximately 2.5 miles south of the maximum known extent of the 100 mg/L chloride isocontour, and over 5.0 miles south of the San Francisco Bay, the Project site is not likely to be affected by seawater intrusion. Further, the proposed Well 20-02 is designed to extract water from the deeper confined aquifer, beneath the shallow aquifer of concern in regard to seawater intrusion.

Interconnected Surface Waters – There are no SMC specified for interconnected surface waters in the Alt GSP, and no interconnected surface water reaches identified in close proximity to the Project site. As such, the Project is not expected to affect the interconnected surface water sustainability indicator.

As demonstrated above, the Project is not expected to impact the SMC set for each applicable sustainability indicator in the Alt GSP. Therefore, EKI finds that the Project does not conflict with or obstruct implementation of the Valley Water Alt GSP and sustainable groundwater management of the basin.

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<sup>4</sup> EKI reviewed groundwater quality data for domestic, irrigation, municipal, and “other” water supply wells in the Groundwater Ambient Monitoring and Assessment (GAMA) Program database.

### Figures

Figure 1. Project Location

Figure 2. Map of Geologic Hazards Zones

Figure 3. Recent Cumulative Subsidence

### References

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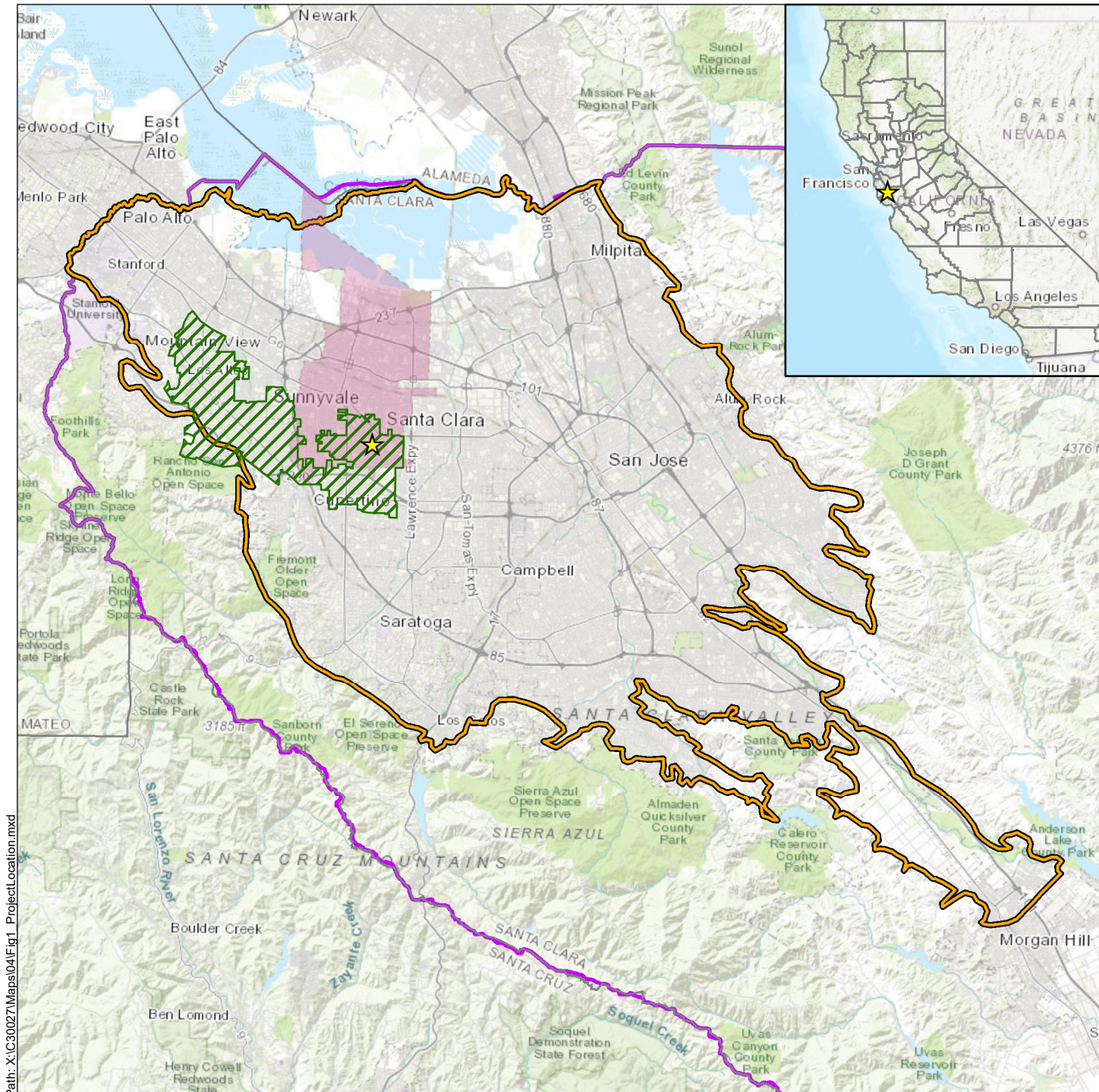
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## FIGURES





## Legend

- ★ Proposed Well 20-02
- City of Sunnyvale
- California County
- Cal Water LAS District
- Santa Clara Valley Water District
- Santa Clara Subbasin (DWR No. 2-009.02)

## Abbreviations

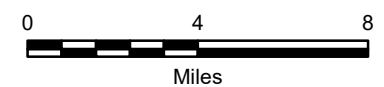
Cal Water = California Water Service Company  
 DWR = Department of Water Resources  
 LAS = Los Altos Suburban

## Notes

1. All locations are approximate.

## Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 March 2023.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - 2019 Update.
3. Water Districts boundaries from DWR's i03\_WaterDistricts dataset, obtained 30 March 2023.



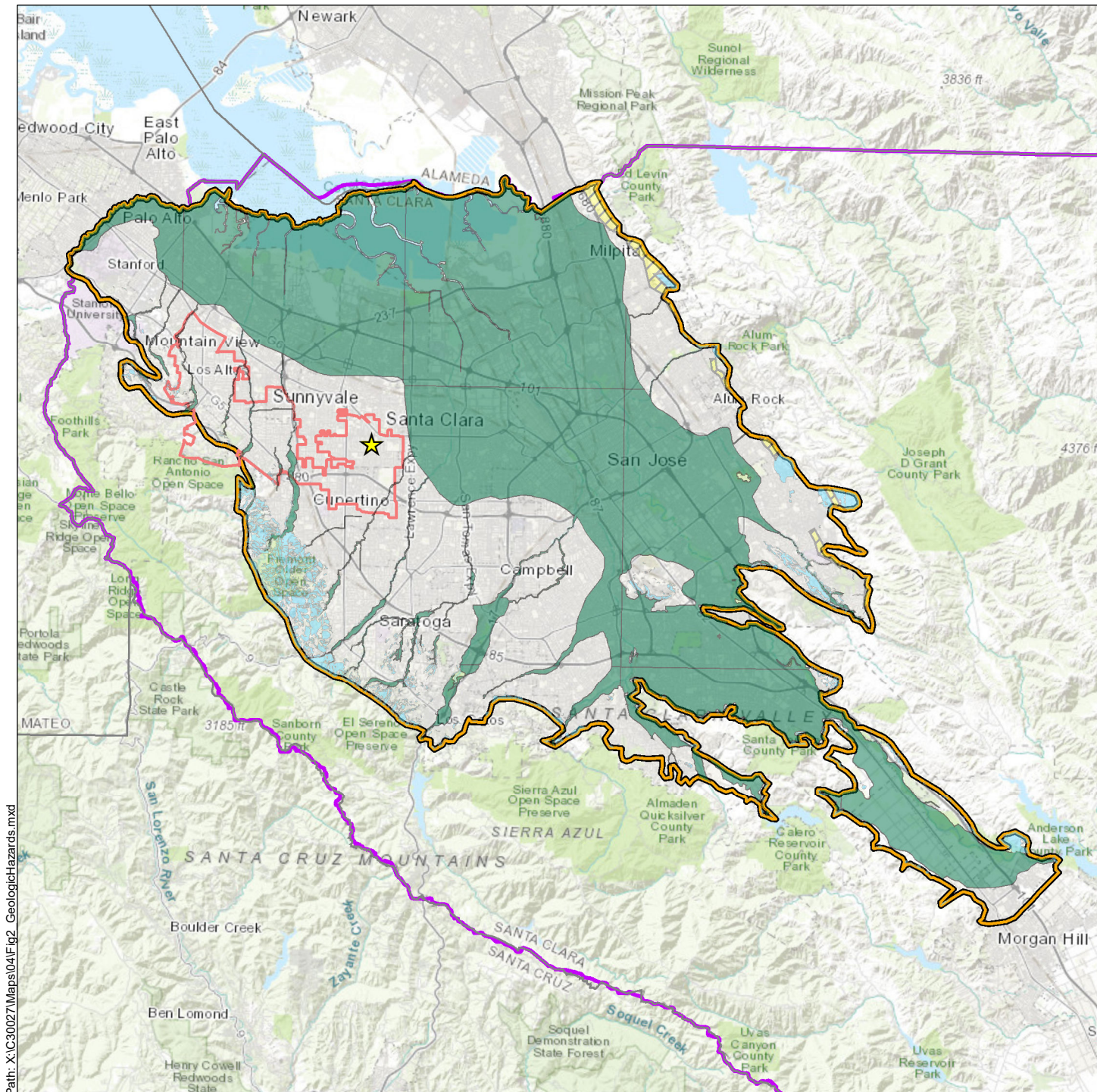
## LAS District Well 20-02 Location

eki environment & water

Cal Water Los Altos Suburban District  
 Sunnyvale, CA  
 May 2023  
 C30027.00

Figure 1





## Legend

- ★ Proposed Well 20-02
- CGS Alquist-Priolo Fault Zones
- CGS Landslide Zones
- CGS Liquefaction Zones
- Cal Water LAS District
- Santa Clara Subbasin (DWR No. 2-009.02)
- Santa Clara Valley Water District

## Abbreviations

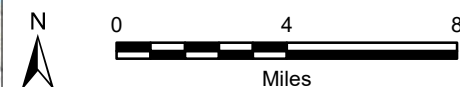
- Cal Water = California Water Service Company
- CGS = California Geological Survey
- DWR = Department of Water Resources
- ft = feet
- LAS = Los Altos Suburban

## Notes

1. All locations are approximate.

## Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 30 March 2023.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - 2019 Update.
3. Water Districts boundaries from DWR's i03\_WaterDistricts dataset, obtained 30 March 2023.
4. CGS geologic hazards (fault, landslide and liquefaction) zones data obtained from the California Department of Conservation open data platform on 10 April 2023.



## Geologic Hazards Zones

eki environment & water

Cal Water Los Altos Suburban District  
Sunnyvale, CA  
May 2023  
C30027.00

Figure 2



