Santa Barbara County Drought Resilience Plan

County of Santa Barbara

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one COUNTY one FUTURE

Boulder, Colorado **DC—Metro** **Pacific—Oahu**

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List of Abbreviations

APG	(California) Adaptation Planning Guide
Cal OES	California Governor's Office of Emergency Services
CalWARN	California Water/Wastewater Agency Response Network
CDC/ASTDR	Center for Disease Control / Agency for Toxic Substances and Disease Registry
CDPH	California Department of Public Health
CUEA	California Utilities Emergency Association
CWS / SCWS	Community Water System or Small Community Water System
DAC	Disadvantaged Community
DRP	Drought Resilience Plan
DWR	Department of Water Resources
DWSRF	Drinking Water State Revolving Fund
EDDI	Evaporative Demand Drought Index
EJ	Environmental Justice
EO	Executive Order
FEMA	Federal Emergency Management Agency
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HPI	Healthy Places Index
IRWM	Integrated Regional Water Management
LAFCO	Local Agency Formation Commissions (Santa Barbara County LAFCO: https://www.sblafco.org/)
MCL	Maximum contaminant level
MJHMP	(Santa Barbara County) Multi-Jurisdictional Hazard Mitigation Plan
NGO	Non-Governmental Organization
NRI	National Risk Index
NTNC / NTNCWS	Non-Transient Non-Community or Non-Transient Non-Community Water System
OSWS	Office of Sustainable Water Solutions
PDSI	Palmer Drought Severity Index
PLSS	Public Land Survey System (grid system)
PSPS	Public Safety Power Shutoff
PV	Physical Vulnerability
SAFER	Safe and Affordable Funding for Equity and Resilience program
SB 552	Senate Bill 552 (Bill Text)
SB County DRP	Santa Barbara County Drought Resilience Plan
SCWW	Small Community Clean Water/Wastewater
SDWA	Safe Drinking Water Act

SGMA	Sustainable Groundwater Management Act
SHMP	State Hazard Mitigation Plan
SPEI	Standardized Precipitation-Evapotranspiration Index
SSWS	State Small Water System
SUDC	Small, Underserved, and Disadvantaged Communities
SVI	Social Vulnerability Index
SWRCB	State Water Resource Control Board
SWS	Small Water System
TA	Technical Assistance
TMF	Technical, managerial, financial capacity (a SAFER metric)
TNC / TNCWS	Transient Non-Community or Transient Non-Community Water System
USDM	US Drought Monitor
WIIN	Water Infrastructure Improvements for the Nation
WRFP	Water Recycling Funding Program

Preface

This document, the Santa Barbara County Drought Plan ("Plan"), was developed using vulnerability data from the California Department of Water Resources and County sources retrieved in June 2024. The analysis of funding opportunities detailed in Section 6.1 was completed in October 2024. This Plan reflects the development of data and research completed in 2024 and is subject to amendments or changes based on updated data and resources.

Funding for this Plan has been provided in part or in full from the California Department of Water Resources, in response to the Senate Bill 552 signed in 2021. This Plan was co-developed by Lynker and GSI Water Solutions, Inc., with guidance from the Santa Barbara Public Health Department.

The recommended projects and actions within this Plan are not funded or accounted for in staff work planning documents for any Santa Barbara County department. Elements in the Plan require individual property owner or water system actions and implementation. This Plan provides a foundation, but dependent on situation or location, potential measures may not be applicable or practical.

1. Introduction

Drought is a recurring hazard in central California, including Santa Barbara County with recent notable examples in 2012-2017 and 2021-2022. The region's hydroclimate is generally characterized by highly variable precipitation patterns, with multi-year cycles of drought punctuated by shorter, intense wet periods. However, since 2005, the County has experienced drought conditions more often than wet conditions, which necessitates robust drought planning measures. As a part of statewide drought conditions in 2012-2017, California adopted Senate Bill 552 ("SB 552") signed by the Governor in September 2021 to provide support for small water users by developing a drought plan that includes a vulnerability assessment and proactive measures to prepare for future drought.

SB 552 aims to enhance drought planning and resilience for small water suppliers and rural communities. At the County level, SB 552 mandates the establishment or continuation of a county drought and water shortage task force to spearhead drought preparedness, alongside the development of a comprehensive drought resilience plan. SB 552 requires the plan to include potential drought and water shortage risk analysis and proposed interim and long-term solutions for domestic wells and state small water systems. Santa Barbara County ("County") has also identified that small water systems with less than or equal to 200 connections are also as vulnerable to drought conditions.

The Santa Barbara County Drought Resilience Plan ("County DRP", "Plan", "DRP") includes domestic wells, state small water systems (SSWS), and small water systems (SWS) with less than or equal to 200 connections (Figure 1-1). These water systems are defined as:

- Domestic wells supply water for domestic use (non-public) by an individual household or up to four individual connections (CA DWR).
- State small water systems pipe water for at least five and up to 14 service connections and provide drinking water to fewer than 25 people on a regular basis (CA DWR).
- Small public water systems are broadly characterized as systems serving 10,000 or fewer customers (EPA). Small water systems are further categorized into 3 system types: 1) Community water system (CWS) supplies water to the same population year-round; 2) Non-transient non-community water system (NTNCWS) supplies water to at least 25 of the same people at least 6 months per year (e.g., schools, factories, hospitals); 3) Transient non-community water system (TNCWS) supplies water in a place where people do not remain for long periods of time (e.g., campgrounds, gas station).

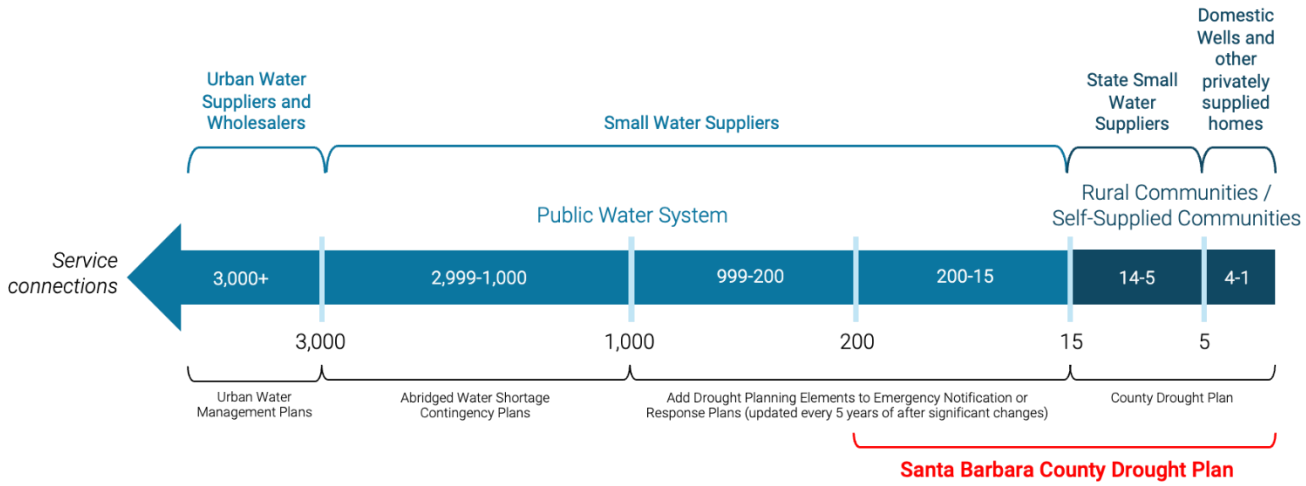


Figure 1-1: Overview of water providers for County Drought Plans (adapted from the Madera County 2023 Draft Drought Plan). Santa Barbara County includes small water systems with ≤200 connections, which is an additional system to the state small and domestic wells analysis required by SB 552.

1.1. Water Resources in Santa Barbara County

Santa Barbara County encompasses approximately 2,700 square miles and is characterized by mountainous terrain, coastal plains, and inter-mountain valleys. The climate is Mediterranean type, with warm, dry summers and mild, wet winters. Precipitation in the County is highly variable, ranging from 8 to 36 inches annually, with most of the annual rainfall occurring between January and March. Water supply sources include surface water from Cachuma, Gibraltar, Twitchell, and Jameson Reservoirs, and groundwater from key aquifers. Water is also imported from Northern California via the State Water Project and other surface water sources. However, for many residents in the County, groundwater is the primary source of potable water (Water Supply Portfolio)[1]. Areas in the County that are wholly dependent on groundwater include the Cuyama Valley, the communities of Los Alamos, Mission Hills, and Vandenberg Village, and the City of Lompoc (Santa Barbara IRWM Cooperating Partners, 2019).

Like other parts of Central California, Santa Barbara County faces water shortage challenges from a combination of drought, increased demand, and climate change. Groundwater resources from the nine basins in the County are essential for supplementing surface water (Table 1-1 and Figure 1-2), especially during drought years. California's DWR assigns basin prioritization (i.e., very low, low, medium, and high) based on eight factors identified in the California Water Code Section 10933(b)[2], which include population served, number of wells, and documented natural impacts, among other factors. The DWR further identifies basins in the State that are critically over-drafted. In the County, Carpinteria and Cuyama Valley have been identified as high-priority and critically over-drafted basins.

Drought conditions present perennial challenges in providing reliable water supply for County residents and users. Droughts in the region have been well-documented over the past 11,000 years (Hoover, 2020, p. 25). The longest drought in the modern record lasted 16 years, occurring between 1918 and 1934. Other significant droughts included the droughts of 1944 to 1951 (7 years), 1983 to 1990 (7 years), and 2012 to 2017 (5 years). In addition to these dry spells, the region is also prone to flooding resulting from intense rainfall and the steep local topography. These hazards have the potential to further degrade existing water quality issues such as saltwater intrusion or increased contaminant

[1] https://www.countyofsb.org/2382/Where-Does-Your-Water-Come-From
[2] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=10933.&lawCode=WAT

loading (City of Santa Barbara, 2019). On top of these natural hazards, the County's aging infrastructure also poses a risk to water resources, though ongoing investments are working to rebuild or repair critical water infrastructure.

Overall, water management and conservation efforts have focused on reducing water consumption through conservation programs and implementing water-saving technologies. Policies and regulations involve coordinating efforts among multiple County departments to enhance drought resilience.

Table 1-1. Groundwater basins in Santa Barbara County.

Basin	DWR Priority	Basin area (m^2)	DWR Basin Population Projection in 2030	GW Percent of Supply
Santa Maria River Valley	Very Low	288	251,000	83%
San Antonio Creek Valley	Medium	135	2,700	97%
Santa Ynez River Valley	Medium	319	77,900	94%
Cuyama Valley	High	230	1,300	100%
Goleta	Very Low	14.4	52,200	34%
Foothill	Very Low	4.9	18,300	8%
Santa Barbara	Very Low	9.6	64,100	3%
Montecito	Medium	9.8	9,100	10-15%
Carpinteria	High	12.7	14,300	69%

Source: Data from the "Santa Barbara County 2023 Groundwater Basins Summary Report" (Santa Barbara County, 2023), USGS, and Montecito Water.

Figure 1-2. Groundwater basins of interest throughout Santa Barbara County.

1.2. Sustainable Groundwater Management Act (SGMA) and Groundwater Sustainability Agencies

California's Sustainable Groundwater Management Act (SGMA), enacted in 2014, mandates the formation of Groundwater Sustainability Agencies (GSAs) in medium and high-priority basins. These GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to ensure sustainable groundwater management. As part of the mandate, each GSA must submit annual reports on their progress towards sustainability, with critical milestones including the establishment of GSAs by 2017 and the requirement for GSPs in critically overdrafted basins by 2020. There are five GSAs in Santa Barbara County:

- Santa Ynez River Valley Groundwater Basin GSAs (Western, Central, and Eastern Management Areas)
- Carpinteria GSA
- Montecito GSA
- Cuyama Valley Groundwater Basin GSA

- San Antonio Creek Valley Groundwater Basin GSA

Adjudicated basins that are not GSAs but are subject to court judgement include the Santa Maria Valley Management Area and Goleta Basin.

Under SGMA, these five GSAs are tasked with ensuring the sustainable management of groundwater resources in their respective basins. These GSAs are committed to achieving their respective sustainability goals, including operating the basins within their sustainable yields for the protection of reasonable and beneficial uses and users of groundwater. The absence of undesirable results, as defined by SGMA and the GSPs, will indicate that the sustainability goal has been achieved. Sustainable groundwater management as implemented through the GSPs is designed to ensure goals such as:

1. Maintaining long-term groundwater elevations are adequate to support existing and future reasonable and beneficial uses throughout the basins,
2. Ensuring that a sufficient volume of groundwater storage remains available during drought conditions and recovers during wet conditions,
3. Ensuring that groundwater production, and projects and management actions undertaken through SGMA, do not degrade water quality conditions in order to support ongoing reasonable and beneficial uses of groundwater for agricultural, municipal, domestic, industrial, and environmental purposes.

Specifically, each GSA has prepared methods to avoid six undesirable results as defined by the SGMA regulations including:

1. Avoiding chronic lowering of groundwater levels
2. Avoiding significant and unreasonable reduction of groundwater storage
3. Avoiding significant and unreasonable degraded groundwater quality
4. Avoiding significant and unreasonable land subsidence that substantially interferes with surface land uses
5. Avoiding significant and unreasonable depletion of interconnected surface water
6. Avoiding significant and unreasonable seawater intrusion

1.3. Public Engagement

Lynker held three public meetings to promote the Santa Barbara County Drought Resilience Plan and to solicit public feedback on the risk assessment and short and long-term mitigation strategies. Each meeting was hybrid with both in-person and online webinar options. The public meetings were held on the following dates and locations:

- Monday July 15, 2024, 4:00 pm PDT: Cuyama
    - Cuyama Joint Unified School District campus
- Tuesday July 16, 2024, 4:00 pm PDT: Santa Ynez Valley
    - Solvang City Hall, City Council Chambers
- Thursday July 18, 2024, 4:00 pm PDT: South Coast
    - Carpinteria Public Library

The meetings were promoted by a variety of public groups including the Groundwater Sustainability Agencies (GSAs) and the Santa Barbara County's website. The meetings were attended by County officials as well as a representative from the DWR. Meeting minutes are provided in Appendix Section 1.

1.4. Plan Organization

This Plan is organized in alignment with the Drought Guidebook[3] as follows,:

- **Section 2, Drought Task Force:** A review of the County drought task force as it relates to small water systems and users.
- **Section 3, Drought Risk Assessment:** A summary of the hazards, vulnerability, and risk findings for domestic wells and small users in the County.
- **Section 4, Short-term Drought Response Needs:** A review of short-term drought response needs that can be enacted during a drought.
- **Section 5, Long-term Mitigation:** A review of long-term mitigation actions that can be taken to mitigate the impacts of drought.
- **Section 6, Implementation:** A summary of funding sources and existing State and regional plans/efforts to assist with implementing this Plan.
- **Section 7, Conclusion**

[3] https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/SB-552/DWR_Final_Guidebook_20230313_ADA_508_v5.pdf

2. County Drought and Water Shortage Task Force

Senate Bill 552 requires the use of a drought task force or alternative process to address the needs of the small water users that are the focus of this Drought Resilience Plan. The bill explicitly states that "A county shall establish a standing county drought and water shortage task force [or alternative process] to facilitate drought and water shortage preparedness for state small water systems and domestic wells within the county's jurisdiction" and invite relevant stakeholders like government, GSP, local water suppliers, and community representatives (SB 552, 2021).

The Santa Barbara County drought task force is composed of agency groups to address local water system resilience and drought issues, monitoring and assessing drought conditions comprehensively throughout the county. The task force includes groups from the County's Emergency Management, Public Health, and Public Works departments and meet biannually typically in April and October. While the task force is largely internal to the County, it has the capacity to expand to parallel teams to better align objectives and goals. Task force members are participating with the Integrated Regional Water Management Program and local basin-specific GSAs. Given the intermittent nature of drought, the County's existing task force is well suited to facilitate drought planning for state small systems and domestic well users relevant to SB 552 as well.

The task force can contribute to stakeholder engagement elements like sharing results from monitoring hydrologic conditions in coordination with GSAs or facilitating discussion on the County to community level about long- and short-term drought and water shortage planning efforts.

3. Drought and Water Shortage Risks Assessment

Domestic wells, homes with private surface water intakes, state small water systems, and state water systems vary in terms of how they may experience impacts during drought and water shortage events. However, they are among the most vulnerable to drought in Santa Barbara County.

This section provides more detail for each water system evaluated in the assessment, hazards affecting the County, and the physical and social vulnerabilities across the County. Together the hazards and vulnerabilities information offers a tool to understand the spatial variability of risk in the County. An overview of the risk assessment in Section 3 is provided below:

- **Section 3.1:** reviews the geographic location and density of the water systems of interest.
- **Section 3.2:** covers general environmental hazards that affect the County.
- **Section 3.3:** provides an overview of the County's physical vulnerabilities.
- **Section 3.4:** provides an overview of the County's social vulnerabilities.
- **Section 3.5:** combines both physical and social vulnerabilities to pinpoint areas most affected by compounded vulnerabilities.
- **Sections 3.6-3.7**: state limitations and provide a summary of the Section 3 results.

3.1. Overview of Water Systems

This plan analyzes the vulnerabilities to domestic wells, state small water systems, and small water systems with less than 200 users in Santa Barbara County.

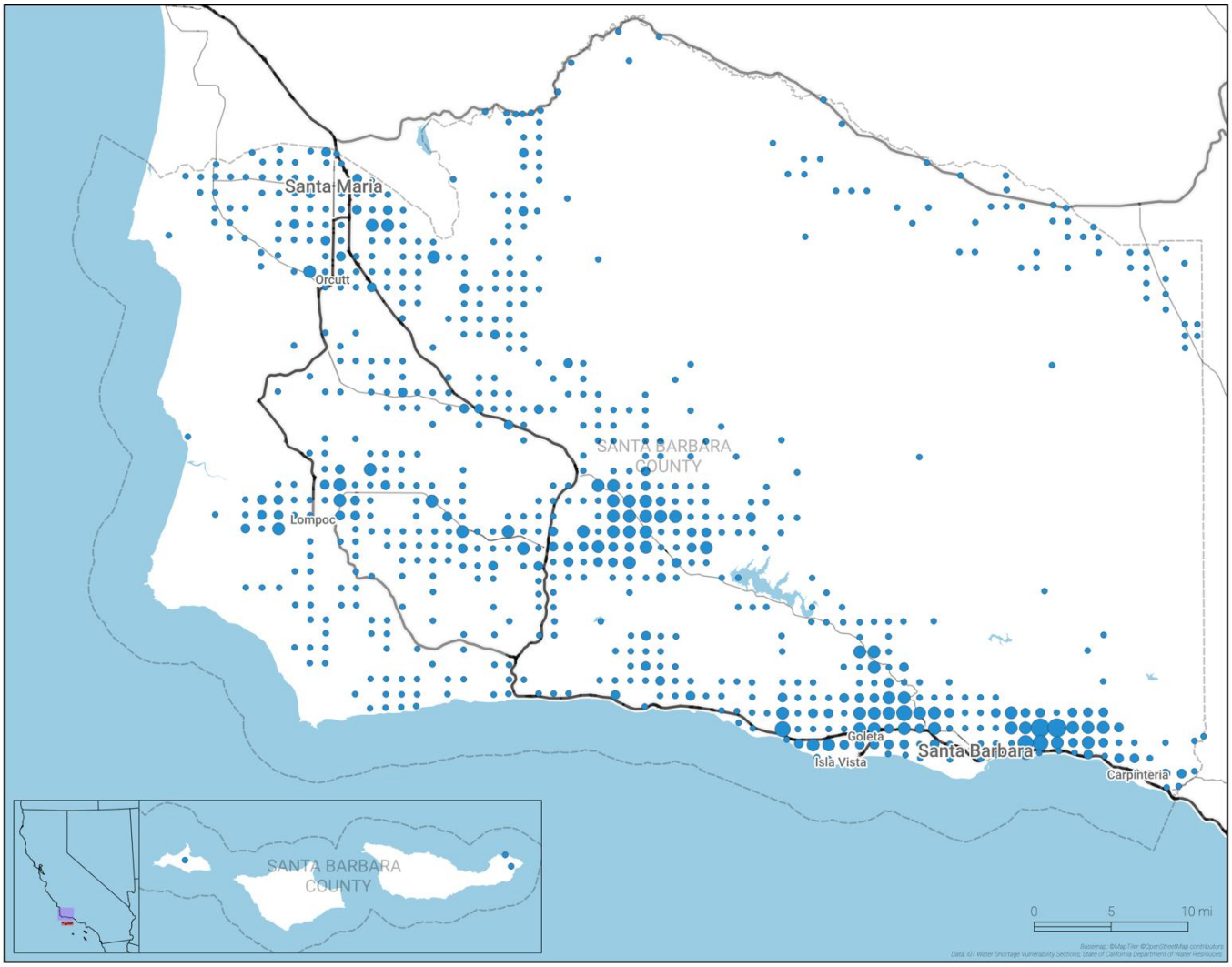
Domestic Wells: Domestic well users rely on private wells rather than public utilities for potable water. There are a total of 3,052 domestic wells within Santa Barbara County. The highest densities of domestic wells are found in the most populated areas including municipalities and mutual water companies, which are concentrated in the Santa Ynez, Santa Maria, and Santa Barbara coastal regions (Figure 3-1).

State Small Water Systems (SSWS): There are 41 State Small Water Systems across Santa Barbara, mostly located within the south-central portion of the County. All State Small Water Systems (SSWS) in the County are private wells, serving a range of populations from 7 to 24 people. Of the 41 SSWS, 35 serve Homeowner Associations and the remaining 6 wells are indicated as *Other Transient Area*.

Small Water Systems (SWS): There are a total of 123 separate small water system areas with less than 200 service connections in Santa Barbara County's regulation. Of these systems, 41 are Community Water Systems, 22 are Non-transient Non-community Water Systems, and 60 are Transient Non-community Water Systems. Most of the systems are private, with 7 systems owned by the local government, and one by the federal government. Examples of service areas for small water systems are residential areas, industrial/agricultural, grade schools and day care centers, recreation areas, among others. Definitions for these system classifications are provided below:

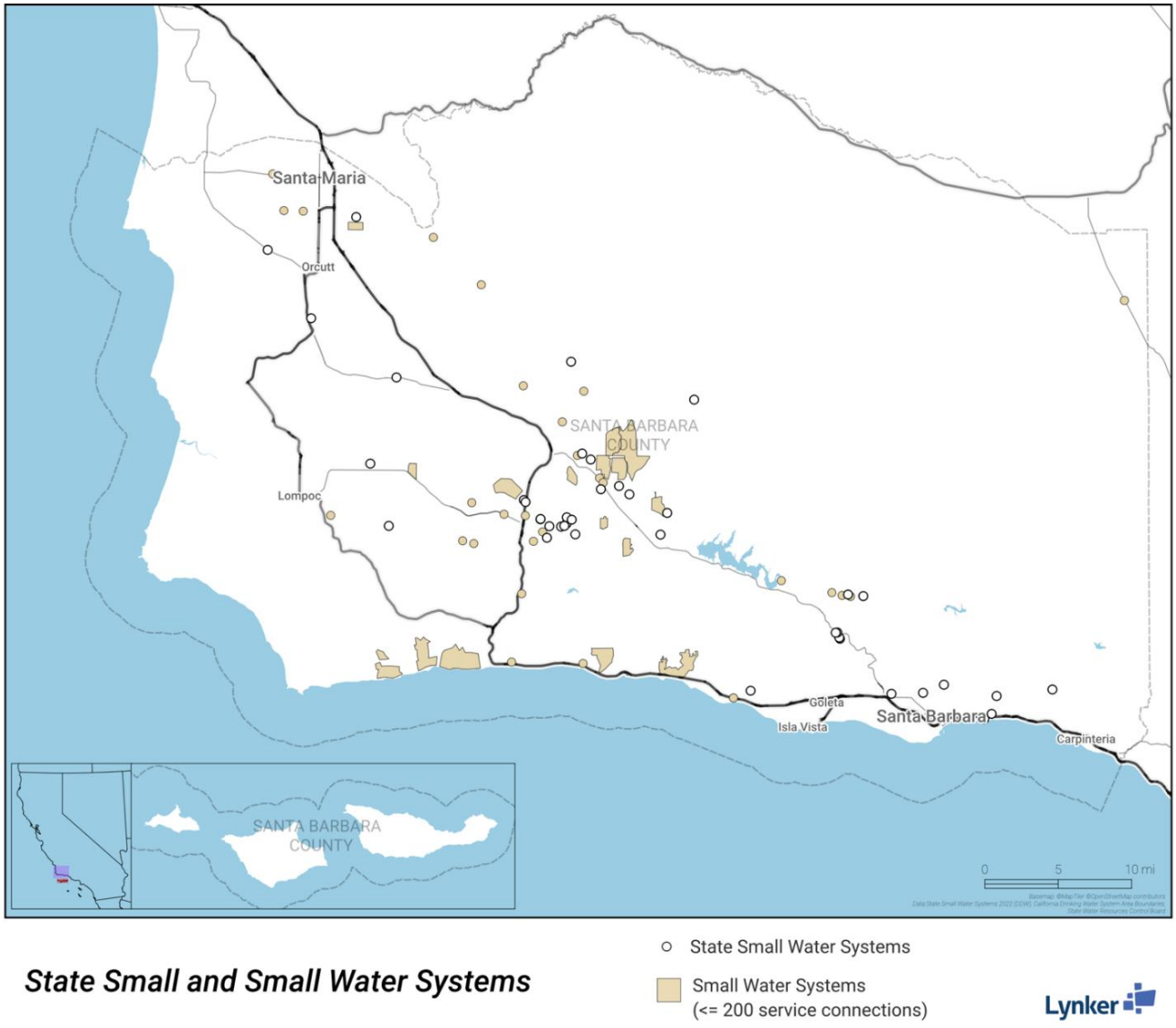
- Community Water System (CWS): A typical public water system.
- Non-transient non-community water system (NTNCWS): This represents long-term water use outside of a community, such as schools and offices.
- Transient non-community water system (TNCWS): This represents short-term water use such as a gas station.

Because of the data availability from the County and State, some of these water systems are represented as a point (located at the admin address) and others as areas. On average, these small water systems have 17 connections, serving a population range from 14 to 1,502 people.



Data Source: CA DWR.

Figure 3-1. Domestic well water system counts in Santa Barbara County. Dot size show the number of wells across the Public Land Survey System (PLSS) grid.



Data Source: CA DWR and Santa Barbara Public Health Department.

Figure 3-2. State small water systems (white) and small water systems with less than 200 connections (tan) in Santa Barbara County.

3.2. Environmental Hazards

Environmental hazards refer to a broad spectrum of natural or environmental variables that can threaten lives and livelihoods. These can include specific variables, like air quality or stream temperature, to more broadly calculated hazards, like drought, which encompasses multiple specific variables. Hazards and vulnerability (i.e., the exposure to a hazard) are used to estimate risk. According to the Federal Emergency Management Agency's (FEMA) National Risk Index[4], Santa Barbara County ranks 'Relatively High' at the 99.4th national percentile and 84.5th percentile within California. The top five hazards are drought (risk index = 100), wildfire (99.5), earthquake (99.1), landslide (96), and riverine flooding (91.3). This Plan is not a multi-hazard mitigation plan for Santa Barbara County, but it provides

[4] https://hazards.fema.gov/nri/report/viewer?dataLOD=Counties&dataIDs=C06083

an overview of the top two hazards--drought and wildfire--which aligns with the hazards presented in the County of Santa Barbara's 2023 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). More information about the MJHMP is available in Section 6.2 and posted publicly on www.ReadySBC.org.

3.2.1. Drought

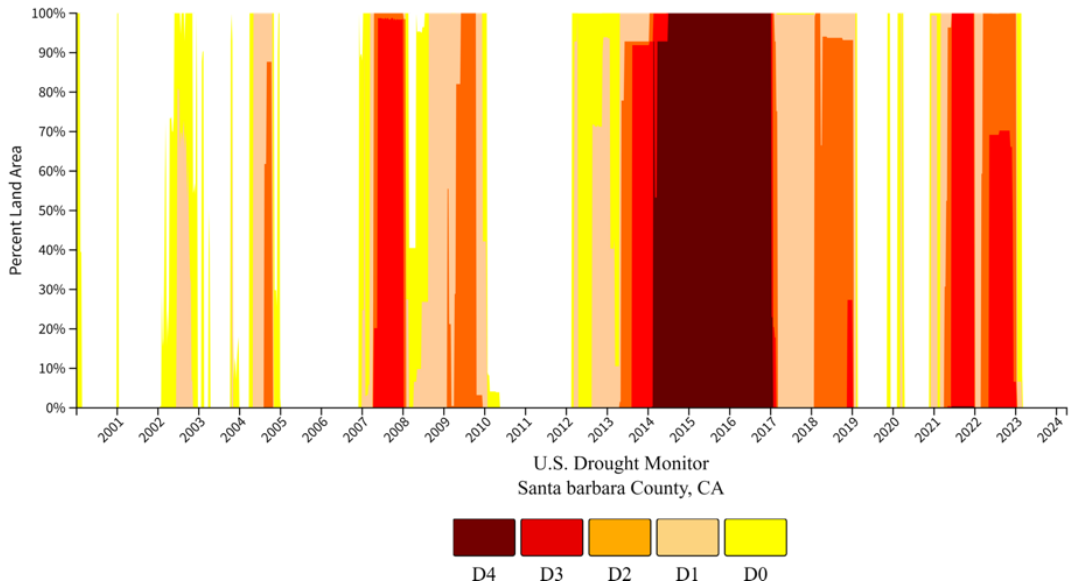
Drought is broadly defined on two timescales: short- and long-term drought. Short-term drought is typically measured by precipitation deficit that lasts for less than six months, while long-term drought lasts longer than six months. Short-term droughts primarily impact agriculture and other surface hydrologic metrics, such as soil moisture and streamflow. Long-term drought impacts likely manifest throughout the hydrologic and ecological systems. To better observe historical drought in the County, timescales greater than three months are more insightful for the high-level outlook. In California and the semi-arid western United States, drought is frequently measured in years rather than months. For instance, the recent 2012-2016 drought had five consecutive years of low precipitation and above-average temperatures. 2012-2015 was the driest consecutive four-year period in the historical record with only 62.2 inches of precipitation statewide (California Natural Resources Agency, 2021).

Here, we introduce three drought indexes that can be used to identify drought conditions in Santa Barbara County: the US Drought Monitor, the Palmer Drought Severity Index, and the Standardized Precipitation Index.

US Drought Monitor

The US Drought Monitor (USDM) provides a snapshot of drought conditions based on an objective blend of meteorological and hydrologic indicators, combined with expert input and reported impacts. Each category refers to a drought class, with white showing normal or wet conditions, yellow (D0) indicating abnormally dry conditions, and tan to deep red (D1 to D4) indicating an increasing intensity of drought conditions, where D4 denotes exceptional drought. For a given region, the USDM displays the percent area in the drought categories for the period 2000 to present.

Santa Barbara County has a history of drought, and in recent years, the County has experienced more multi-year, intense drought conditions (Figure 3-3). The darker red colors that reach 100% show that extreme to exceptional drought was present across the whole County from mid-2013 to 2017. Drought persisted throughout the County until 2019, then returned in 2021 until 2023.

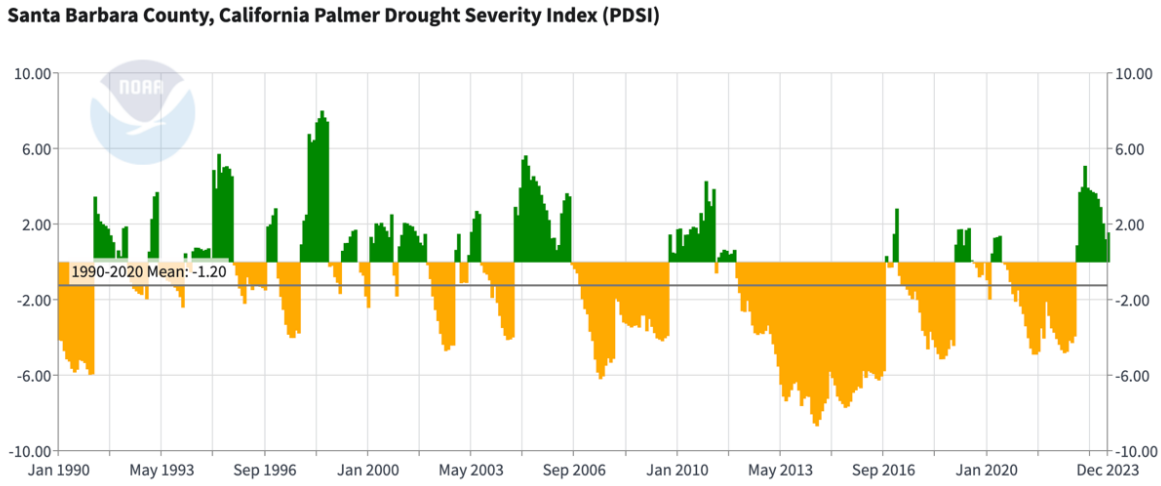


Data Source: USDM, 2024.

Figure 3-3. US Drought Monitor timeseries plot for Santa Barbara County from 2000 to June 2024. This plot displays the percentage of Santa Barbara County experiencing drought at a given time, where the shaded colors indicate the severity of drought (D0 to D4).

Palmer Drought Severity Index

The Palmer Drought Severity Index (PDSI) uses both temperature and precipitation data to quantify long-term drought for an area (Dai & NCAR, 2023). The index ranges from -10 (dry) to +10 (wet), with near normal conditions around 0. The PDSI data are averaged across the County, with PDSI negative values (orange) showing dry conditions and positive values (green) showing wet conditions. The PDSI timeseries for Santa Barbara County shows data from 1990 to 2023, with a mean 30-year (1990-2020) PDSI average of -1.20 (Figure 3-4). Overall, the timeseries depicts historical drought conditions like the USDM, also emphasizing that there were longer, more intense periods of drought conditions than wet conditions in the County.



Data Source: NCEI NOAA, 2024.

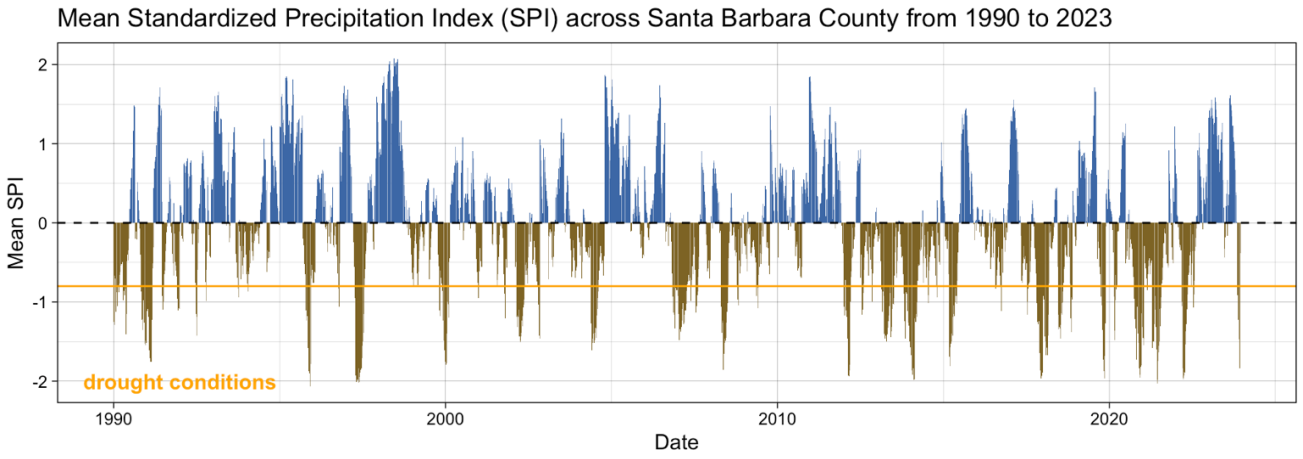
Figure 3-4. Palmer Drought Severity Index (PDSI) for Santa Barbara County from 1990 to 2023. Negative (positive) values show dry (wet) conditions.

Short-term versus Long-term Drought Indicators

Monitoring drought indicators on shorter timescales can provide perspective on short-term drought impacts to agricultural and grassland regions. For example, the Standardized Precipitation Index (SPI) and Evaporative Demand Drought Index (EDDI) and the data products are distributed on varying timescales, from 1-, 2-, 3-, 6-, 9- and 12-months, allowing opportunity for a wide application. Studies indicate shorter timescales for these indices provide insight on early warning for drought whereas the longer timescales like the 6-month to 24-month are used for analyzing persisting drought.

Standardized Precipitation Index

The Standardized Precipitation Index (SPI) is a gridded dataset that measures meteorological drought using precipitation as its primary indicator. The 3-month SPI data for Santa Barbara County were collected over a 34-year timescale (1990-Jan-01 to 2024-Jan-01) then averaged for each grid cell. Greater positive values indicates wetter conditions and greater negative indicates drier/drought conditions. SPI = 0 +/- 0.49 indicates near normal conditions. From 1990 to 2023, the mean SPI averaged across the County is -0.033, the oscillation between dry and wet conditions shows the importance of understanding drought in an area (Figure 3-5).



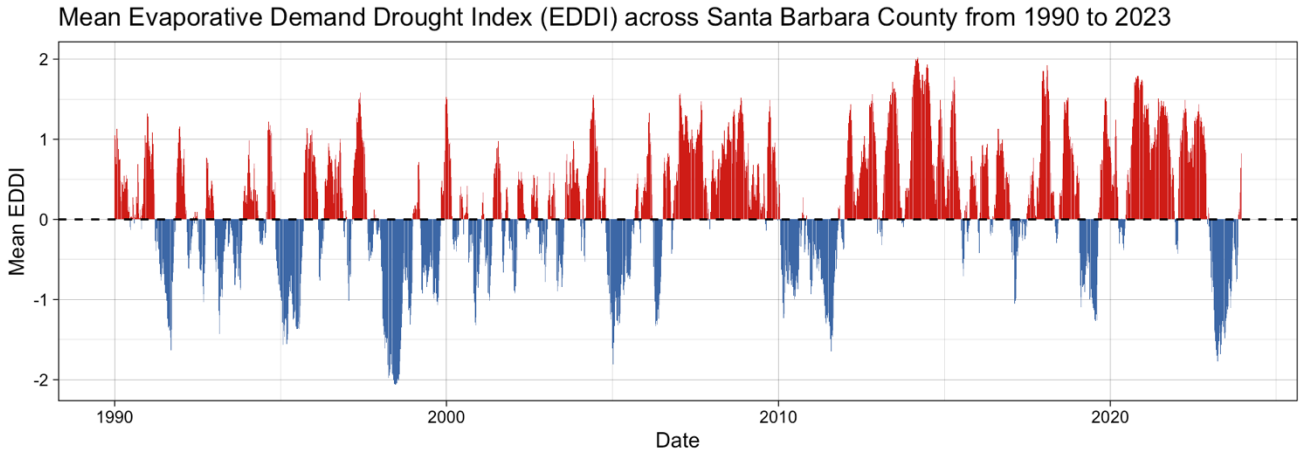
Data Source: GridMET; Abatzoglou, 2012.

Figure 3-5. Standardized Precipitation Index (SPI) over Santa Barbara County from 1990 to 2023 using a 3-month timescale.

Evaporative Demand Drought Index

Evaporative Demand Drought Index (EDDI) is a gridded dataset that measures the "thirst of the atmosphere", which provides insights into potential drought emergence and dryness risk for a region (Abatzoglou, 2012; Lukas et al., 2017). The 3-month EDDI data for Santa Barbara County were collected over a 34-year timescale (1990-Jan-01 to 2024-Jan-01) then averaged for each grid cell (Figure 3-6). For EDDI, greater positive values (red) indicate drier conditions and greater negative values (blue) indicates wetter conditions. Values closer to 0 indicates near normal conditions. Although the EDDI cannot be used for drought prediction, its outputs are useful to quantify potential drought emergence. From 1990 to 2023, the mean EDDI averaged across the County was 0.174, with more instances of EDDI greater than 0 (red) over the period. The extended periods of positive EDDI values are consistent with historical drought records in the County, e.g., the most severe drought on record from 2012-2019 (Montecito Water, n.d.). Note that during the 2013-2017 drought, we observe positive EDDI values (Figure 3-6),

which correspond to the negative PDSI and SPI values in Figure 3-4 and Figure 3-5, showing different interpretations of the same drought event.



Data Source: GridMET; Abatzoglou, 2012.

Figure 3-6. Evaporative Demand Drought Index (EDDI) over Santa Barbara County from 1990 to 2023 using a 3-month timescale.

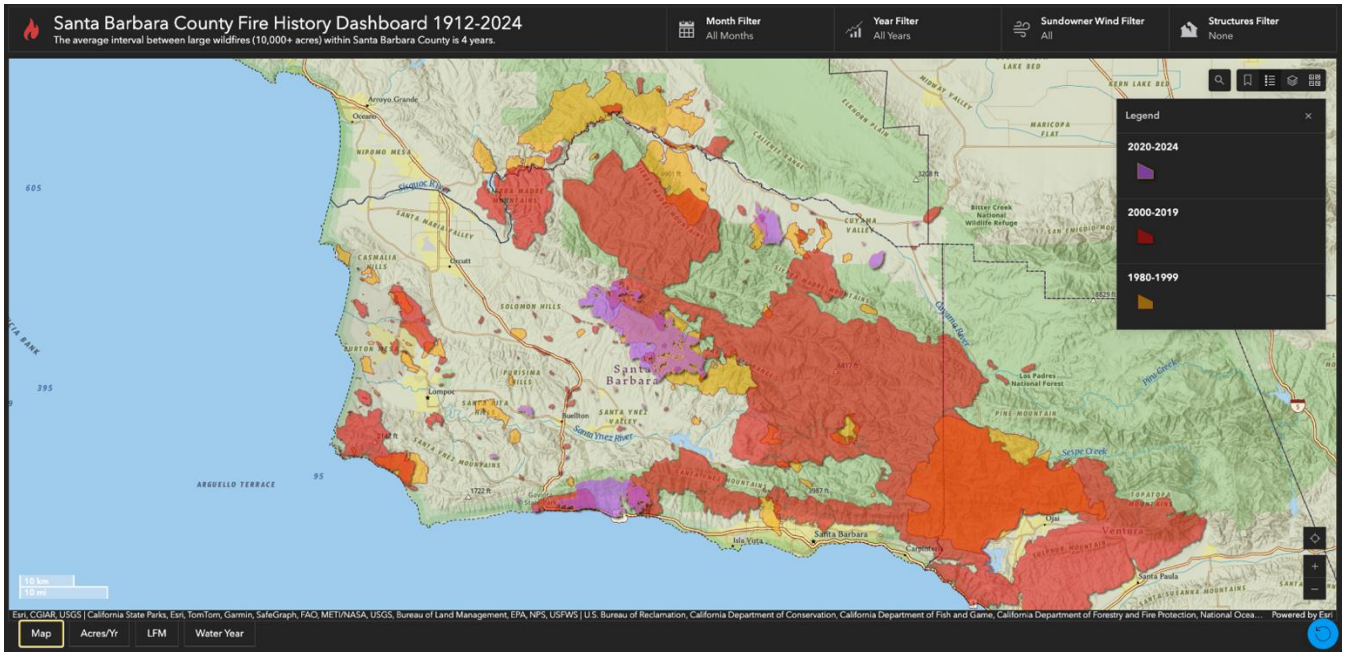
The drought indicators reviewed in this section could be implemented as part of a drought warning system by the County (see Section 4.5).

3.2.2. Wildfire

Santa Barbara County is at risk of wildfires year-round, especially during periods of low humidity, drought, and strong winds. Recent fires in Santa Barbara County have occurred in all seasons, e.g., the Lake Fire in July 2024 (38,664 acres) and the larger Thomas Fire in December 2017 (281,350 acres). The County and the Fire Department developed a dashboard to summarize wildfire data across the County, to inform the public about wildfire occurrence and impact (County Fire History Dashboard[5]).

The County wildfire data were filtered to display burn areas from 1980 to 2024 (Figure 3-7) to better understand recent wildfire trends. Wildfires tend to happen most frequently in forested regions, which is common given the fuel density. According to the County, the average interval between significant wildfires (>10,000 acres) within the County is 4 years. The largest fires occurred in the 2000-2019 period (red), burning in total 546,963 acres. Within the last decade, the years with the most burned land were 2016 (53,422 acres), 2017 (89,237) and 2024 (40,488 acres).

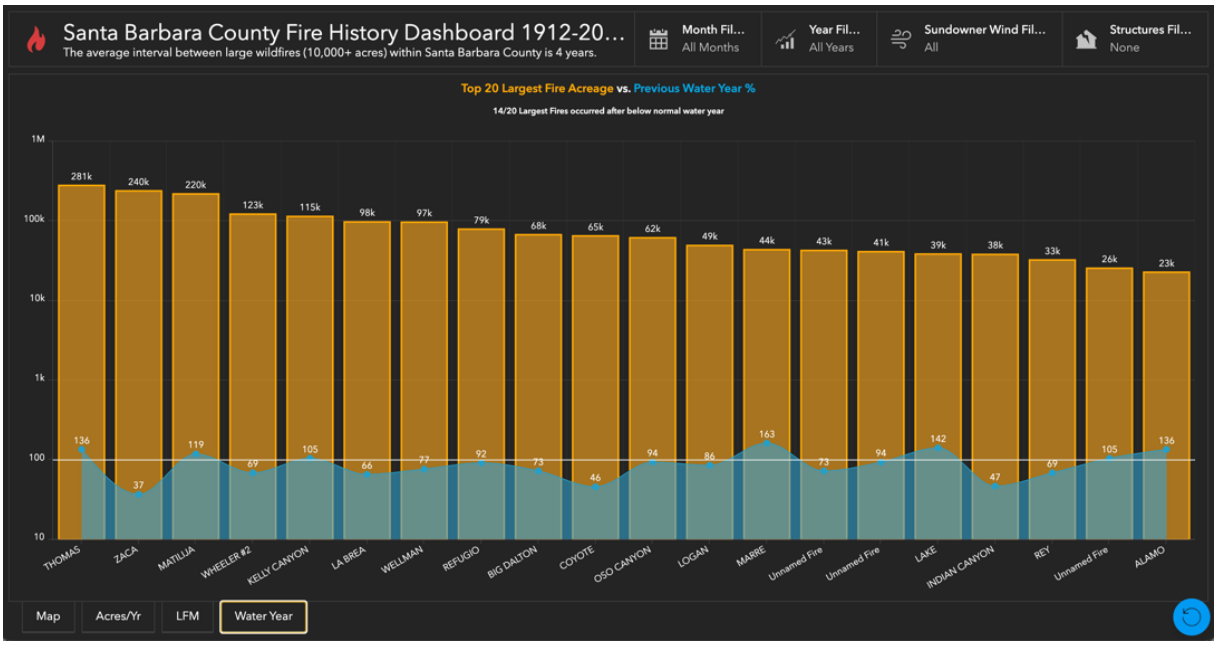
[5] https://sbc-gis.maps.arcgis.com/apps/dashboards/316aef44f80743c88ee1af95ab2f64ed



Data Source: Santa Barbara County Fire History Dashboard 1912-2024. Retrieved on 2024-09-19.

Figure 3-7. Wildfire burn areas from 1980 to 2024 across Santa Barbara County.

Overall, the historical fire data in the County show that large fires generally occur when the previous water year was drier than average. Figure 3-8 shows the largest 20 fires by acreage in Santa Barbara County (yellow bars) with the previous year's water percent of average (shaded blue). The figure shows that 14 of the 20 fires listed occurred after a below normal water year. Abnormally dry or drought conditions can elevate wildfire and water supply risk.



Data Source: Santa Barbara County Fire History Dashboard 1912-2024. Retrieved on 2024-09-19.

Figure 3-8. Top 20 largest fires in historic record versus previous water year percentage (<100% is drier than normal).

3.3. Physical Vulnerabilities

Vulnerability is a measure of sensitivity to a hazard, which can be due to several factors such as location, age of infrastructure, and number of affected people. Examples of physical vulnerabilities relevant to drought include well depth, depth to groundwater, age of well infrastructure, and presence of fractured bedrock aquifers.

In this section we review physical vulnerabilities that contribute to water shortage risk: groundwater levels, water quality, age of infrastructure, and total vulnerability. Groundwater trends in the County provide valuable insight into the water supply condition and evaluating water quality informs us how readily usable the water supply is. Given these water supplies are delivered via wells, well ages provide insight into how reliable or resilient the infrastructure is. Finally, total vulnerability is analyzed using the statewide methods and dataset published by the CA DWR.

3.3.1. Groundwater Levels

The California Sustainable Groundwater Management Act (SGMA) data viewer dashboard displays data as it relates to the development and implementation of Groundwater Sustainability Plans (GSPs). The dashboard includes well reports, subsidence records, water quality hazards, and basin characterization layers to name a few.

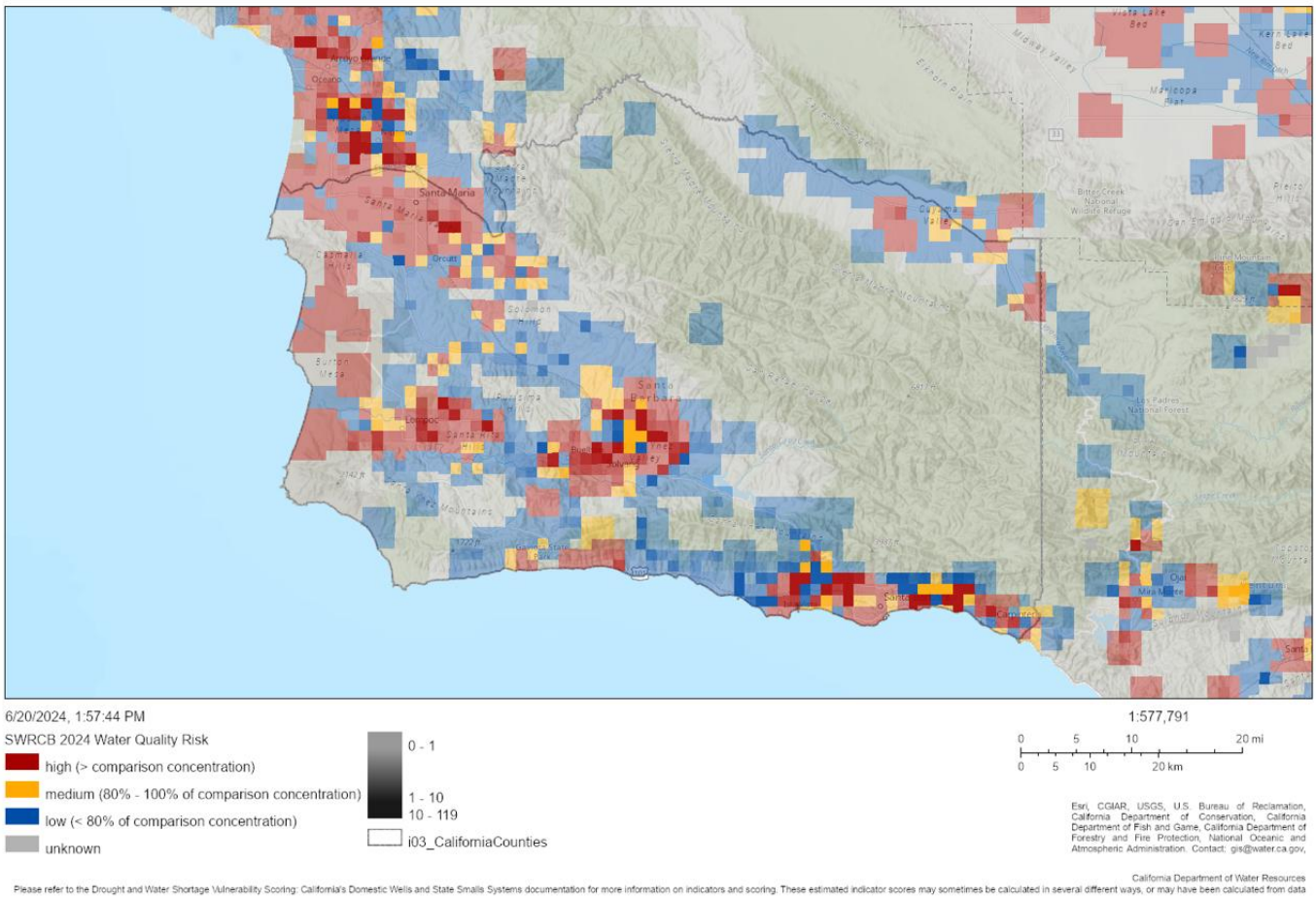
Groundwater levels are a potential vulnerability since lower levels may indicate an inability to pump a normal volume of water. The SGMA dashboard[6] displays individual well groundwater data and statistics to better visualize which reporting wells are more susceptible to going dry. These data are part of a groundwater monitoring effort across the State, managed by the individual GSA. Wells that are part of the program in Santa Barbara County are those primarily used for irrigation, residential, and "unknown" purposes. The percentiles provide a binned output to pinpoint which wells are more vulnerable. Wells reporting "Below Normal" groundwater levels (i.e., less than 25th percentile groundwater level, yellow and red points on the map) are mostly within the Lompoc and Santa Ynez Valley (see Figure 3-10).

Data from other monitored wells in the County are in the normal to high range. The grey points indicate wells that are not ranked, likely from the lack of reporting data. Note that the Cuyama Valley does not have any wells with sufficient, adequate data to accurately describe the valley's water resources condition. Therefore, the area's vulnerability is likely underestimated. However, the vulnerability of groundwater basins managed under SGMA adjudication are documented in annual reports. The SGMA basin prioritization for Cuyama Valley is listed as high/critically overdrafted. For more information about each groundwater basin see Appendix Section 4).

3.3.2. Water quality

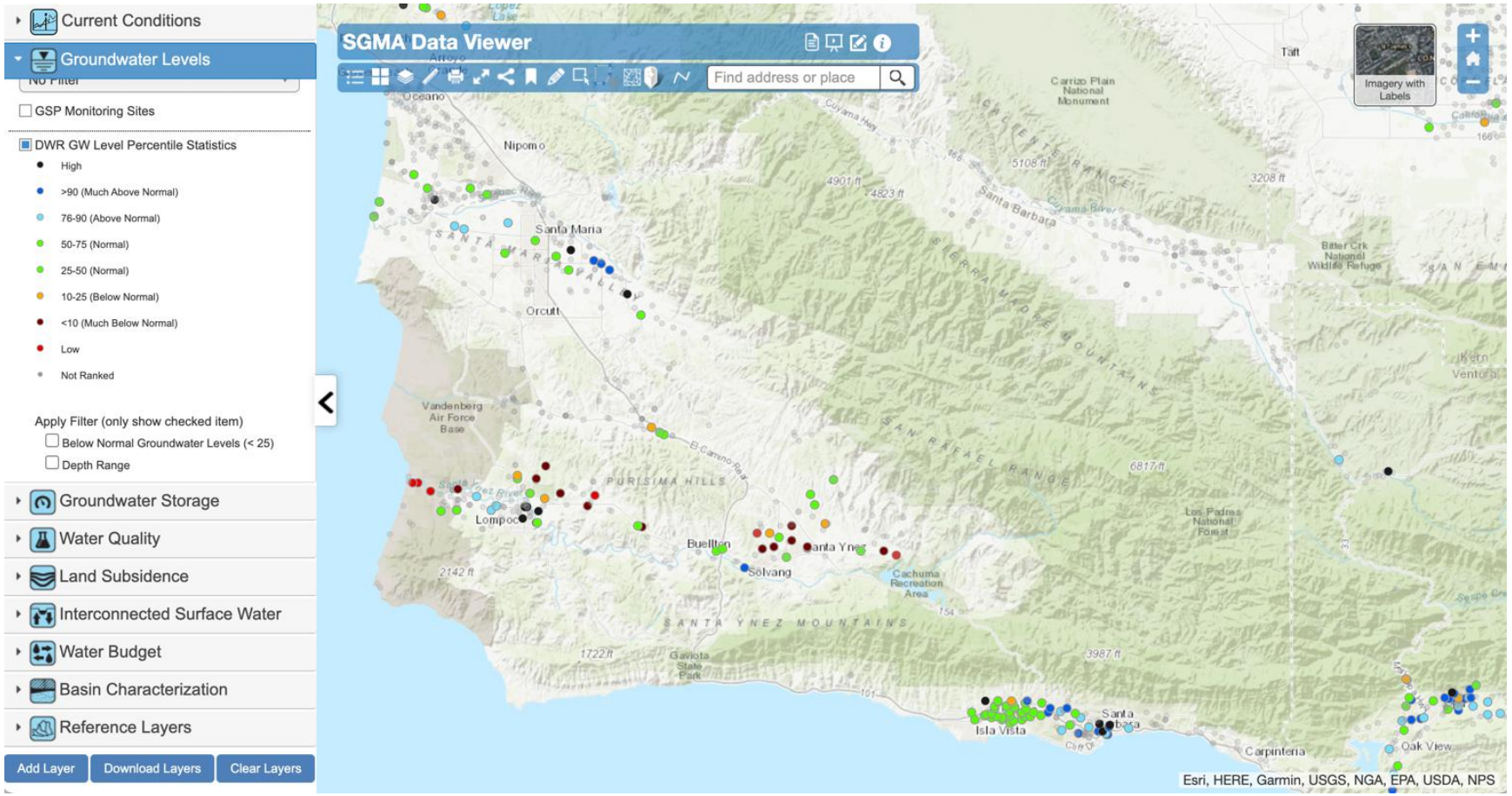
In addition to water supply or water availability, water quality determines how usable or readily usable the water supply is. The State of California's Water Shortage Vulnerability explorer evaluates this vulnerability by using the State Water Resource Control Board (SWRCB) 2024 water quality risk data for domestic wells and state small water systems. This analysis considers the density of domestic wells in the area, state small water systems, and number of contaminants that exceed a comparison concentration used across the State. Higher water quality risk exists along the South Coast, particularly within Goleta-Santa Barbara-Carpinteria, and in the Santa Ynez and Santa Maria valleys, as represented in the deeper red color (Figure 3-9).

[6] https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels



Data Source: CA SWRCB.

Figure 3-9. SWRCB water quality risk for domestic wells and state small water systems.



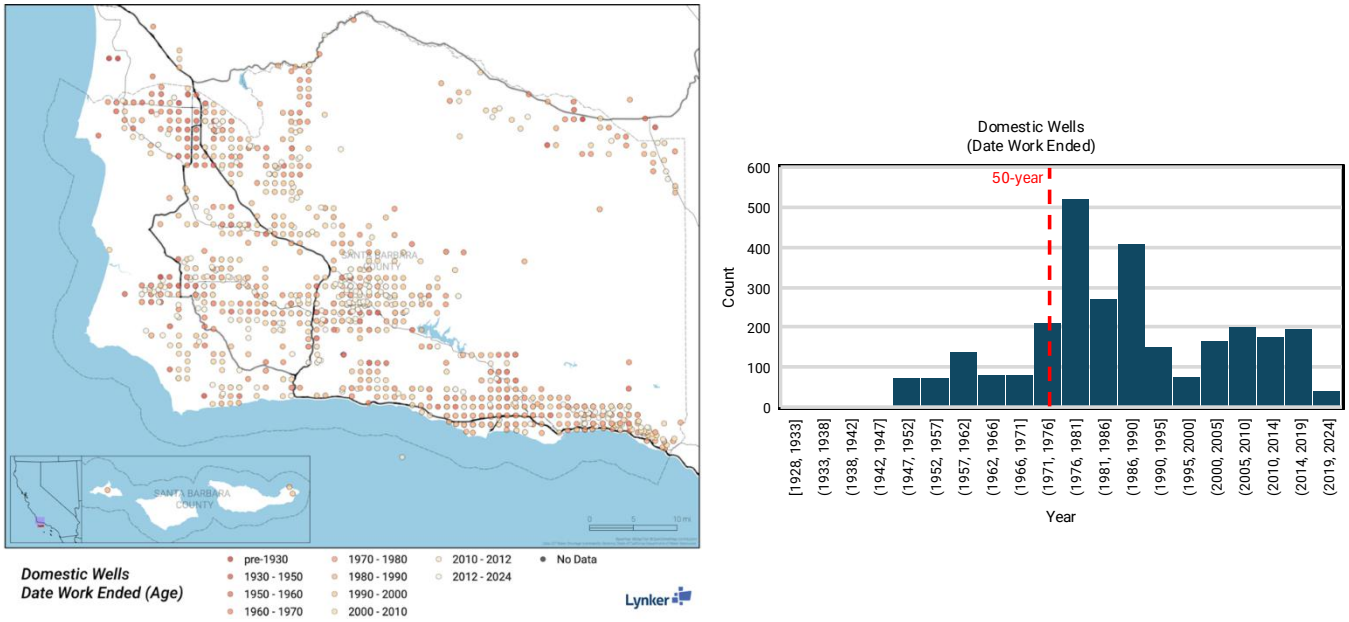
Data Source: SGMA; CA DWR.

Figure 3-10. Groundwater levels in the County, binned into percentiles. Orange and red colors display wells that are below the 25th percentile for groundwater level.

3.3.3. Age of infrastructure

The age of water system infrastructure can provide a more holistic report of each water system's physical integrity, and thus its vulnerability. These data were provided by the 'Date Work Ended' field for domestic wells from the Well Completion Reports provided by Santa Barbara County's Public Health Department Staff for state small and small water systems. A 50-year threshold was used to mark the lifespan of a well, indicating wells that are older than 50 years may have compromises to their physical integrity making it a less reliable resource.

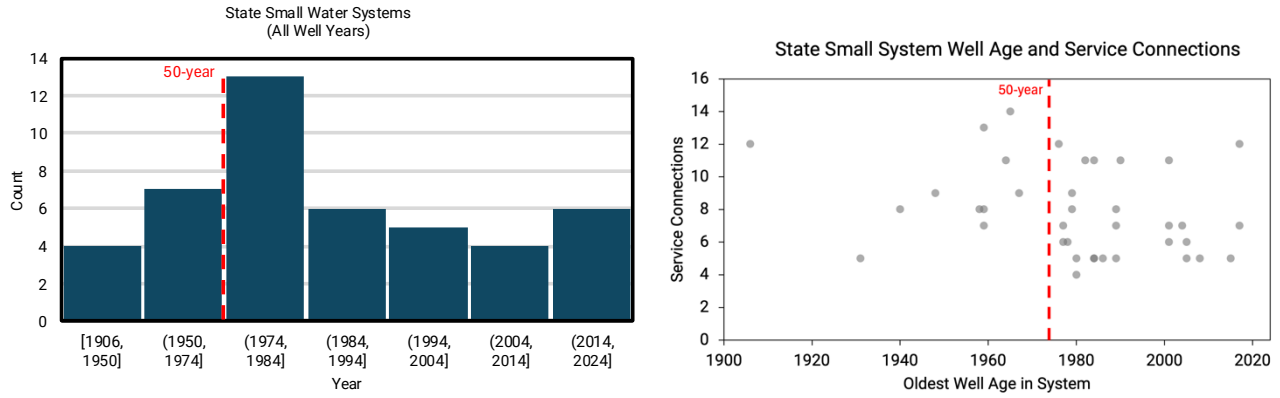
Domestic Wells: Domestic wells across Santa Barbara County were mostly developed around the late 1970s-1980s. There are approximately 518 wells older than 50 years (red line in Figure 3-11). Most of the older wells are in the populated areas of the County including the Santa Maria, Lompoc, and Santa Ynez urban areas. Note that not all wells have a 'Date Work Ended' value; there were 74 wells missing a 'Date Work Ended' value.



Data Source: CA DWR.

Figure 3-11. Domestic well age across Santa Barbara County, as defined by the 'Date Work Ended'. Left: Map displays the domestic well ages across the County color coded by the age. Right: Histogram of well ages , with the vertical red dashed line delineating wells older or newer than 50 years.

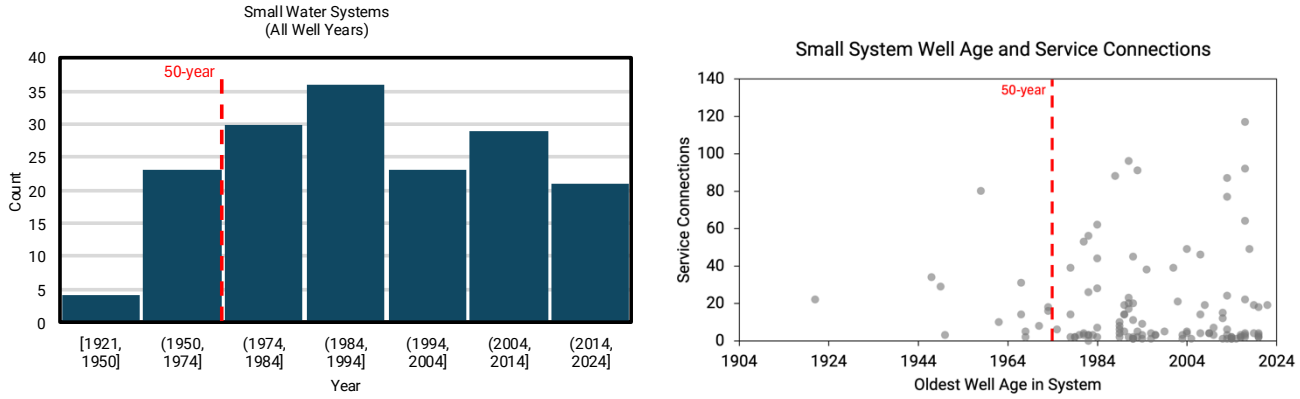
State small water systems: State small water systems wells in the County were mostly built in the late 1970s-1980s with a few wells built in the recent decade (Figure 3-12). Based on the data available, there are about 11 wells that are older than 50 years and 10 systems with only one well year recorded older than 1974. To better understand well age and its vulnerability to service populations, we took the oldest well age for each system and the system's service connections. While there are newer systems that claim most of the service connections in the County, the system with the largest number of service connections has a well older than 50 years (oldest well year is 1965, 14 service connections). Note that this dataset is not inclusive of all wells as there were 2 systems with no well years reported.



Data Source: Santa Barbara Public Health Department.

Figure 3-12. Left: State small water system well ages across the County. Right: The oldest well year for each state small water system and the number of service connections. The vertical red dashed line indicates a 50-year well age.

Small water systems: Small water systems wells with less than 200 service connections in the County were mostly built in the late 1980s with more wells built in the recent two decades (Figure 3-13). Based on the data available, there are about 27 wells that are older than 50 years (red line; pre-1974) and 13 systems with only one well year recorded older than 1974. Analyzing the oldest well age per system and service connections, newer systems tend to have more service connections. However, there are still 26 wells older than 50 years in systems, 5 of which have greater than 20 service connections. Note that this dataset is not inclusive of all wells as there were 7 systems with no well years reported, and one system reported as 'Dry'.



Data Source: Santa Barbara Public Health Department.

Figure 3-13. Left: Small water system well ages with less than 200 connections across the County. Right: The oldest well year for each small water system and the number of service connections.

3.3.4. Total Physical Vulnerability

State DWR Analysis

The California Department of Water Resources (DWR) assessed physical vulnerability across the State for every Public Land Survey System (PLSS) unit, which are standardized one square mile units across the nation. The analysis displays the physical vulnerability scoring for each PLSS unit according to published methods from CA DWR (DWR, 2023).

Across Santa Barbara County, the communities that are more physically vulnerable are represented in the deep red sections, such as along the South Coast (Figure 3-14). Other regions of the County with higher physical vulnerabilities include southwest of the Santa Ynez Valley and northeast of the Santa Maria Valley. Across these sections, the leading physical vulnerability varies. For example, along the coast, the threat of current and future saltwater intrusion and fractured bedrock increases the area's vulnerability. Further inland, the density of PLSS units with higher wildfire risk increases, and for areas with underlying fractured bedrock, physical vulnerability is compounded. This is particularly the case in the Santa Maria Valley, east of Santa Maria.

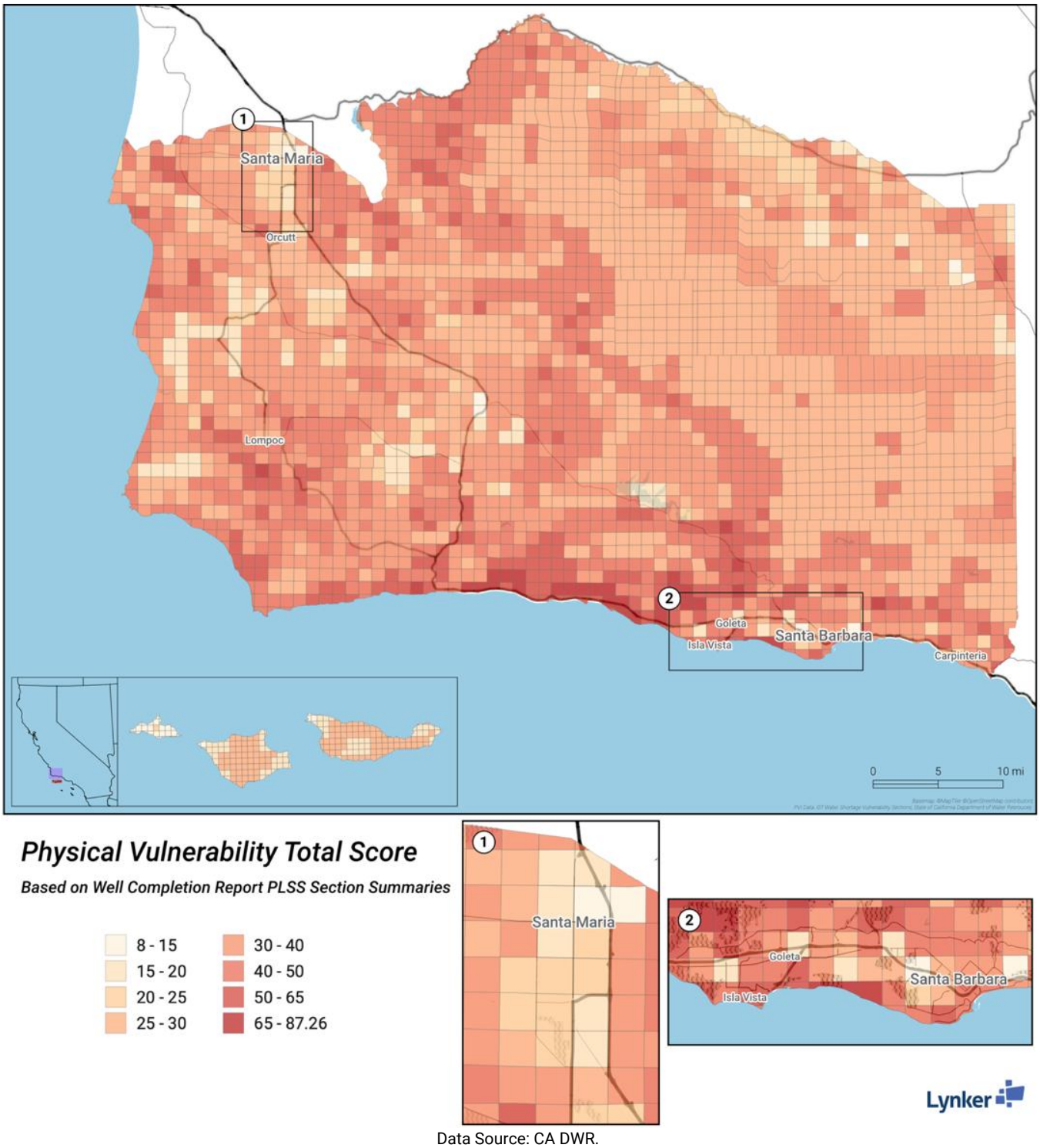
The general risks of current and future climate change impacts are high across the County. The relevant data included in the physical vulnerability score include projected heat risk, projected saltwater intrusion, and projected wildfire risk. Median scores compared to the max for the projected heat risk (RC1a), projected wildfire risk (RC1c), current year's precipitation (RC2a), consecutive dry years (RC2aa) are 2.5/2.8, 0.37/0.64, 1/1 and 3/5, respectively.

To evaluate the coincidence of physical vulnerability with the location and density of wells, Figure 3-15 overlaps domestic well density and the total physical vulnerability score as output by the State of California's Water Shortage Vulnerability Explorer[7]. By combining domestic well density and physical vulnerability, this analysis can show where the greatest impacts to the largest number of people may occur during a drought. In this figure, higher physical vulnerability is shown in darker blue, while lighter blue and white indicates lower physical vulnerability. Similarly, darker orange colors represent higher domestic well counts, and lighter orange and white indicates fewer domestic wells. When these overlapping variables are combined, the areas with the highest physical vulnerability and domestic well counts appear as dark brown or black. The areas with the greatest impact are communities in the Santa Ynez Valley and the City of Santa Barbara and Goleta. Smaller regions of high impact are located near Santa Maria and Lompoc.

A similar analysis was completed to add in state small and small water systems, where physical vulnerability was combined with water system well counts. In Figure 3-16, darker blue colors indicate higher physical vulnerability and darker orange colors indicate a higher well count. When the scores are combined, dark brown colors indicate areas with higher physical vulnerability and a higher well count. These regions include Goleta[8], Montecito[5], and some users along State Highway 154, the Santa Ynez valley, and smaller areas near Lompoc, Mission Hills, and Santa Maria.

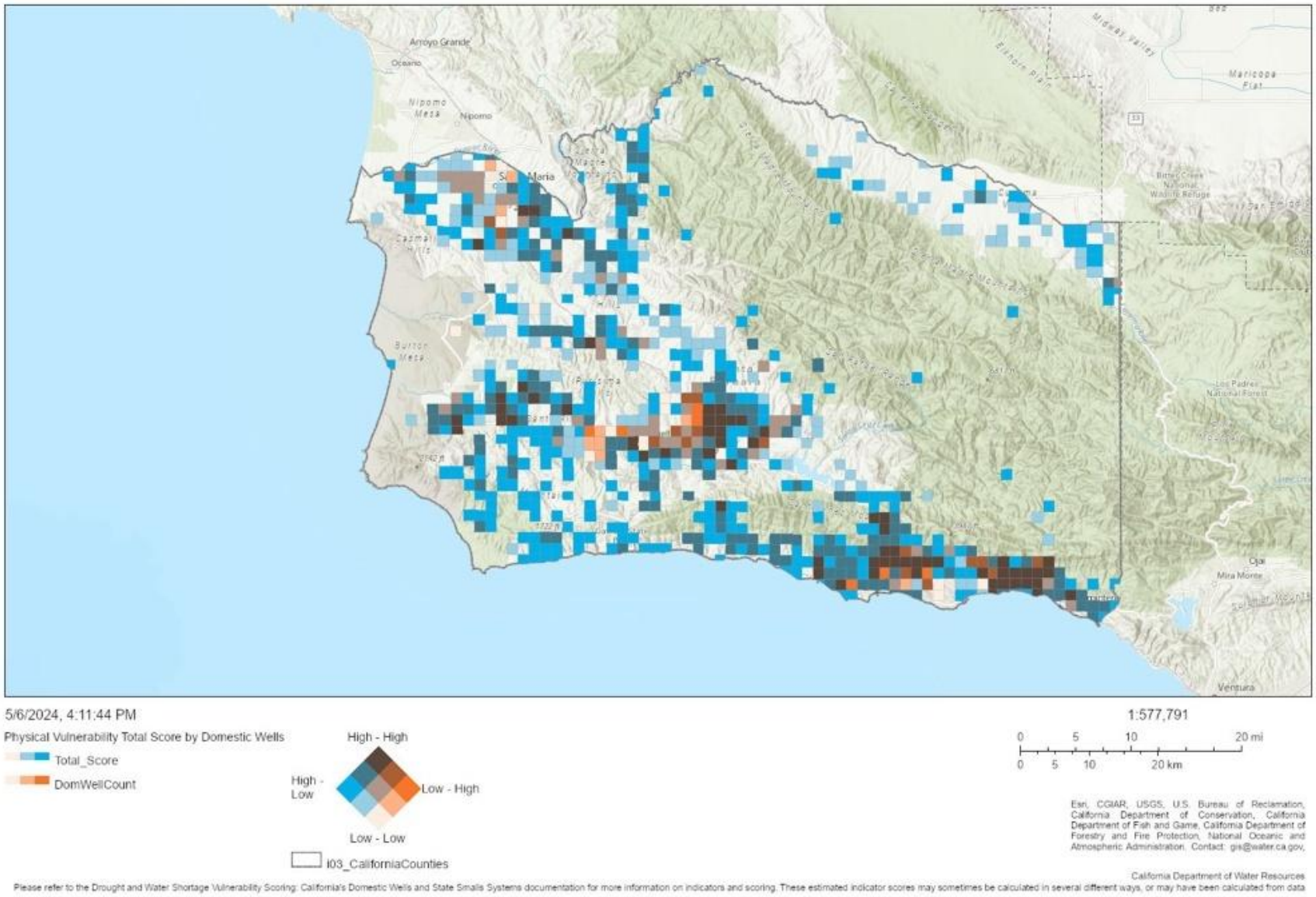
[7] https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=b20d1b8b751c42f9a067a915544e512c&extent=-13960048.223%2C4383164.2643%2C-13040357.8986%2C4846678.4038%2C102100

[8] Many of these domestic wells are not in service, these areas are primarily served by water districts (Santa Barbara County, 2025). However, quantitative information regarding well operability was not available from the relevant State and County datasets.



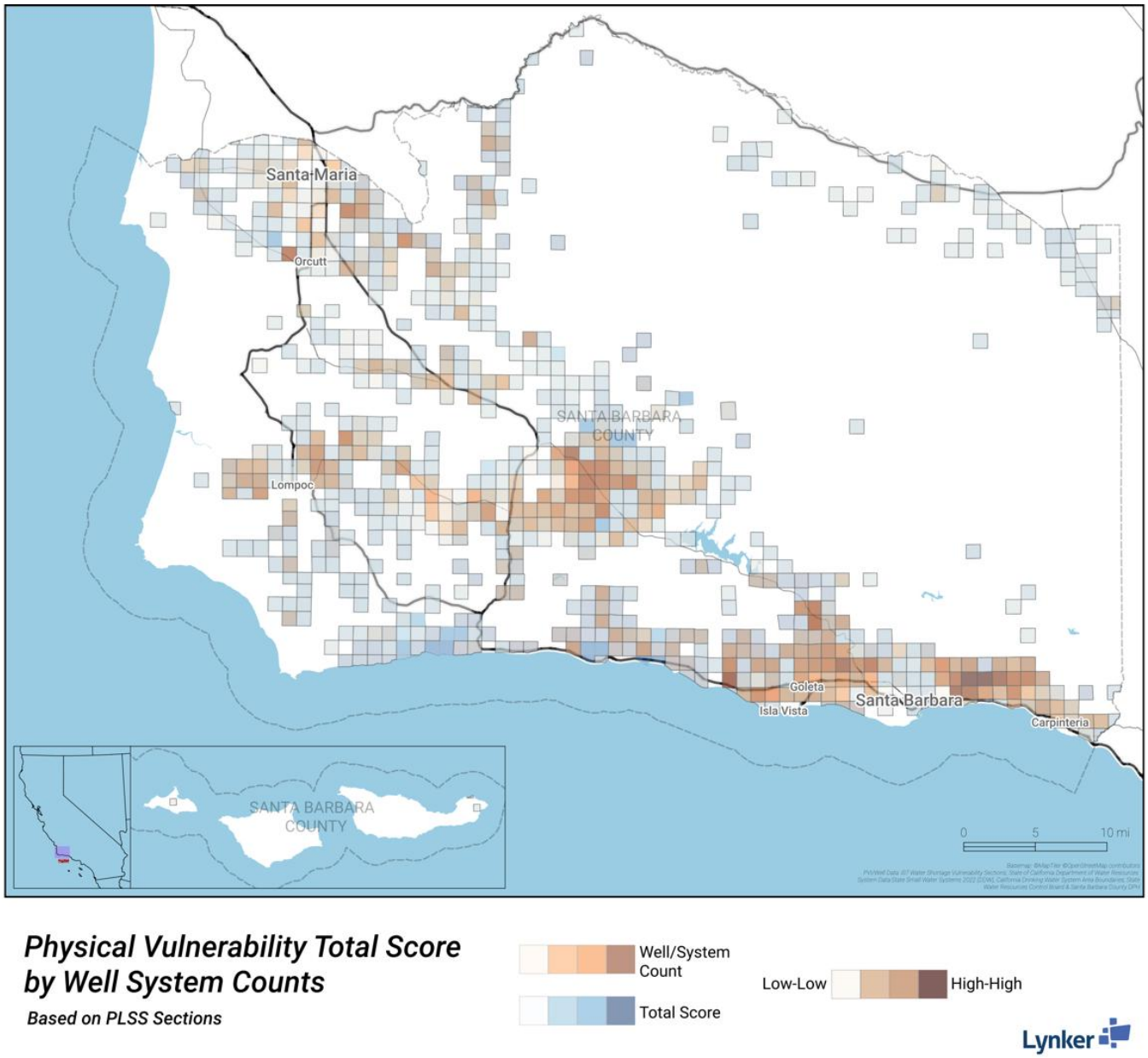
Data Source: CA DWR.

Figure 3-14. Physical vulnerability total score across Santa Barbara County, calculated by PLSS units.



Data Source: CA DWR.

Figure 3-15. Domestic well count and total physical vulnerability score.



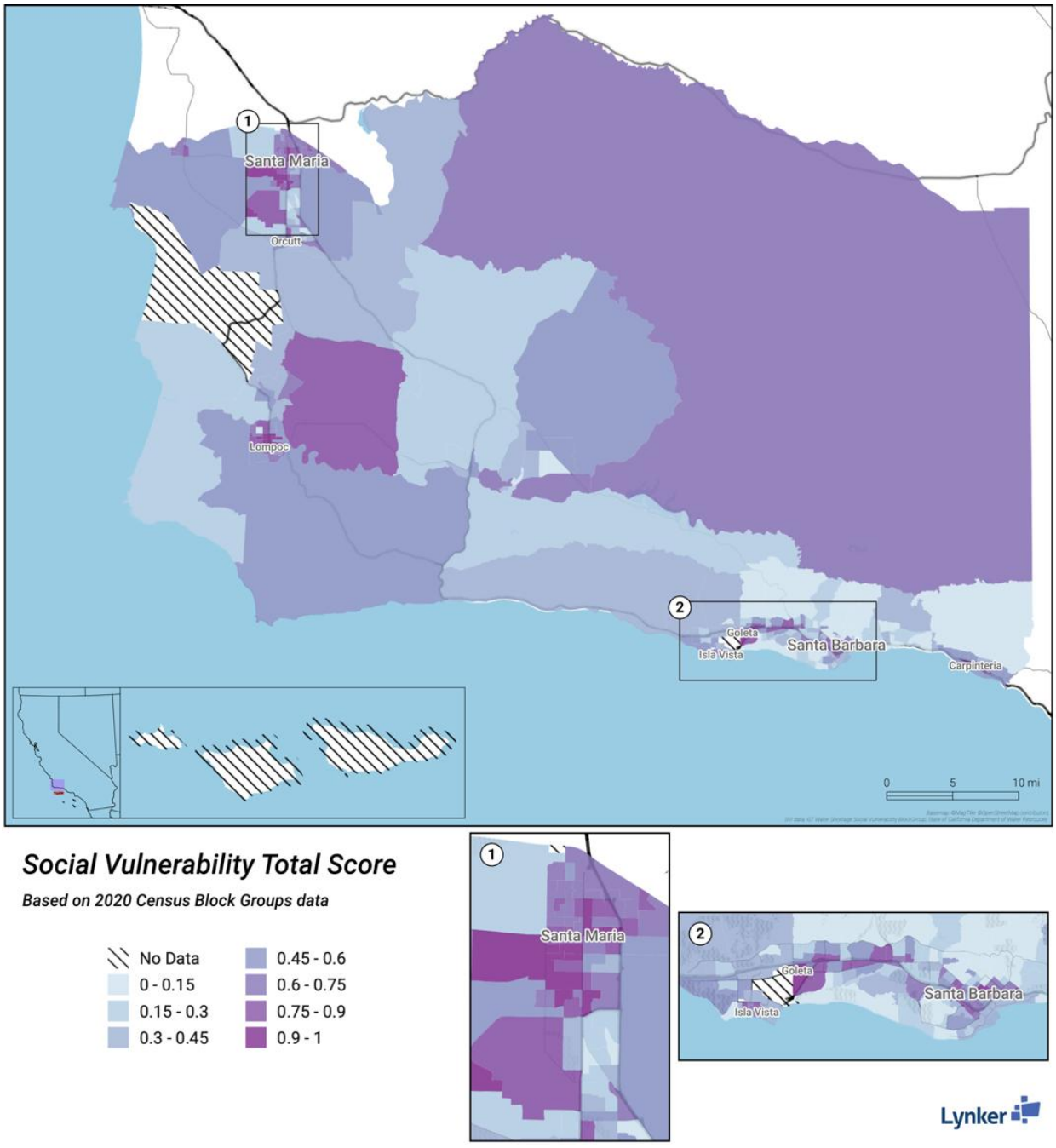
Data Source: CA DWR.

Figure 3-16: State small and small water system well counts with total physical vulnerability score.

3.4. Socioeconomic vulnerabilities

The Social Vulnerability Index (SVI) summarizes social vulnerabilities for a census designated area, and reports the data as a normalized index from 0 (least vulnerable) to 1 (most vulnerable). The California DWR performed a statewide SVI calculation using 2020 Census data to better understand social vulnerability around “drought risk tolerance and resources” (detailed in Appendix Section 3). The SVI is summarized by Census Block Groups, which are the smallest geographic areas used by the Census Bureau (Figure 3-17). It is important to note that because block groups are a smaller subsection of a general area (e.g., city limits), these socioeconomic outputs can provide insight about certain neighborhoods.

The SVI identifes vulnerable areas particularly along the South Coast, east of Lompoc, in Santa Maria, and within the Cuyama Valley. The variables that lead to these higher vulnerabilities vary across the County; however, block groups with higher SVI scores tend to have a higher percentage of its population with a lower household income, in single mother households, of a minority ethnic group, with rent burden, and in older homes (built before 1969).

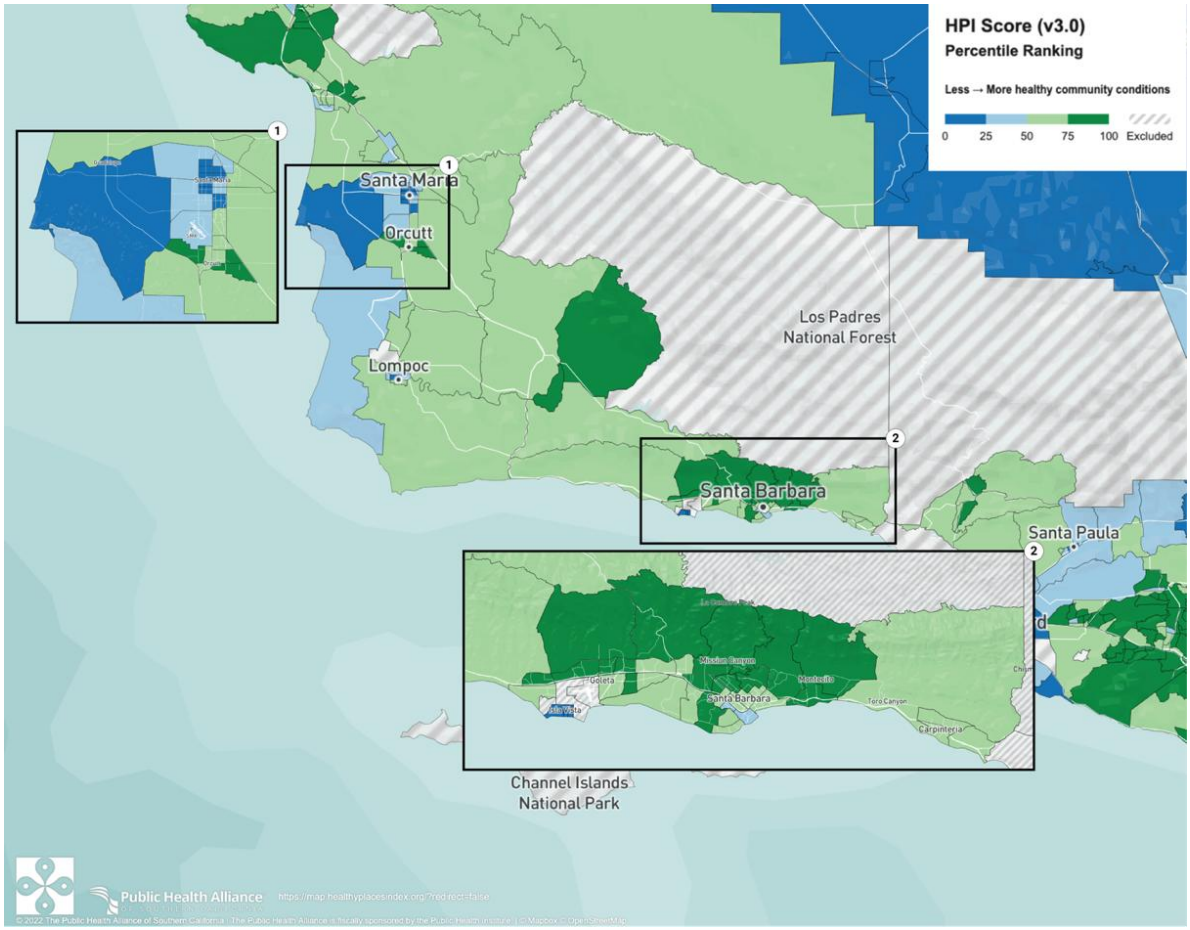


Data Source: CA DWR.

Figure 3-17. Social vulnerability index total score across Santa Barbara County using the 2020 census data, calculated for block groups.

There are multiple indexes that can be used to evaluate social vulnerability. Two alternate methods include the Cottage Data2Go data developed by Cottage Health and Measure of America[9], which are presented by US Census Tracts. The SVI scores were very similar to those developed by the CA DWR and presented in Figure 3-17.

The Healthy Places Index (HPI) social vulnerability metric[10] was developed by a coalition of 10 health departments in Southern California (the Public Health Alliance of Southern California), which includes the Santa Barbara County Public Health Department. The HPI is measured by weighing 25 community conditions like healthcare access, environmental quality (e.g., drinking water or air quality), education, and socioeconomic status into a single score. Then across the selected geography (e.g., Census Tracts, zip codes), the values are ranked by percentile from 0 to 100, in this case the higher the score, the healthier the area. Santa Barbara County ranked 64.3% healthier than other California Counties. Across Census tracts within the County, the northwest corner of the County, around Santa Maria (inset 1), has the lowest healthy community conditions, as do parts of Lompoc. This is likely attributed to lower access to healthcare, housing, and education.



Data Source: https://www.healthyplacesindex.org/.

Figure 3-18. Santa Barbara County Healthy Places Index (HPI).

[9] http://www.cottagedata2go.org
[10] https://phasocal.org/wp-content/uploads/2023/06/PHA_HPI_Guidance_Report523_4.pdf

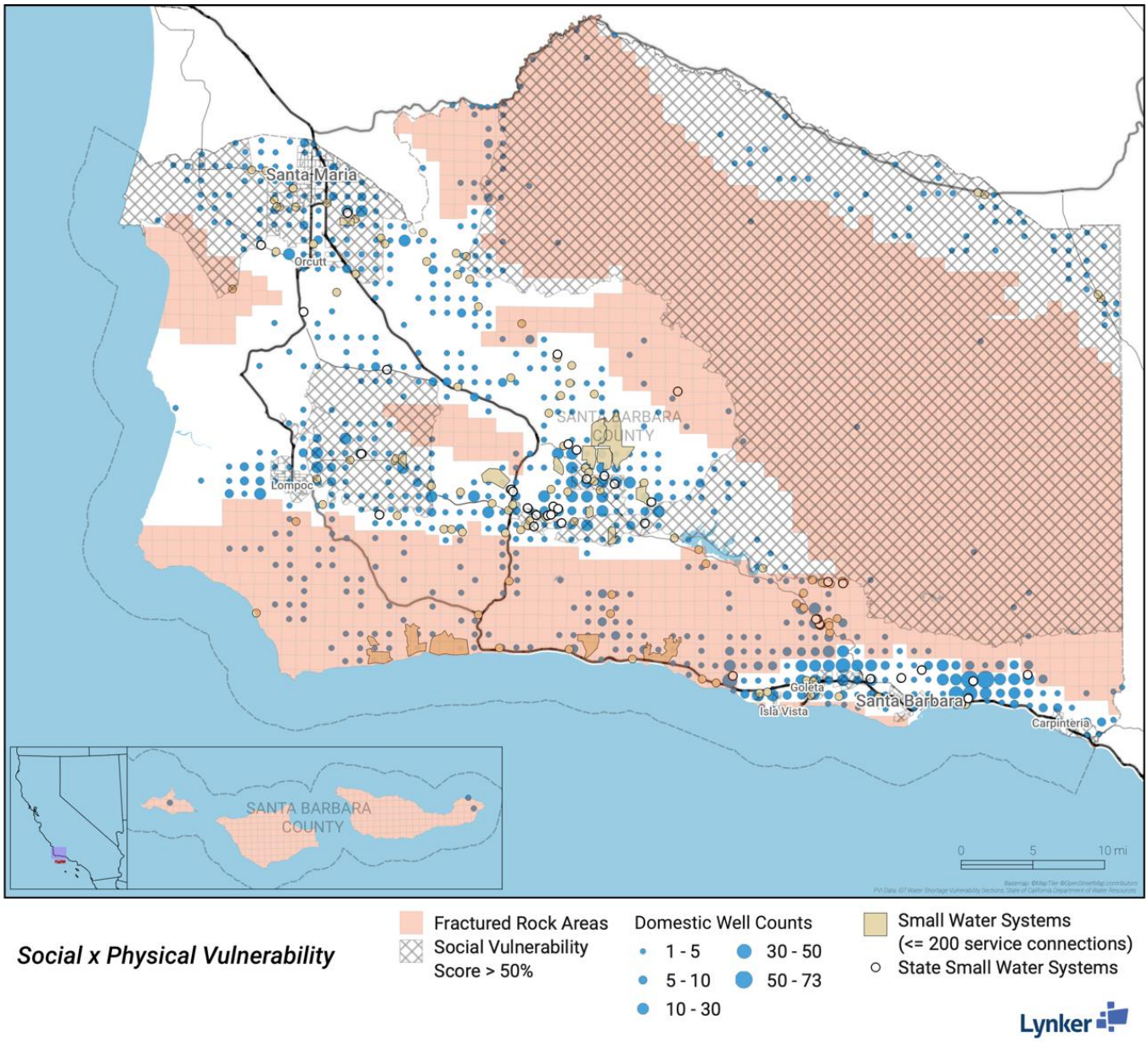
3.5. Compounding vulnerabilities and risk

Physical and Social Vulnerability

It is important to assess vulnerabilities with both physical and social data to assist in informed decision making. One way to consider both social and physical vulnerabilities in Santa Barbara County is to evaluate populations with high social vulnerability (SVI > 0.5) that rely on domestic, SSWS, or SWS in fractured bedrock areas (Figure 3-19).

To do this, the PV fractured bedrock areas layer (red) was overlaid with the SVI > 0.5 layer (hatching), both on top of the water system layers (blue points are domestic wells, white points are SSWS, and tan points and boundaries are SWS with <= 200 service connections). Areas with all these layers overlapped are geographically minimal but still present. Vulnerable communities that rely on domestic wells (red shaded regions with hatching and blue points) are within the Los Padres National Forest region. There is one SWS within the Vandenberg Space Force Base (red shaded regions with hatching and tan points).

Results from this map can help to reveal other vulnerabilities. One being areas in fractured bedrock and a high social vulnerability (red shaded region with hatching), these sections are mostly concentrated within the Los Padres National Forest region, west of the Santa Maria Valley, and south of Los Alamos. Along Highway 154 north of Santa Barbara into the Santa Ynez Valley, south of the Lompoc Valley, and northeast of the Santa Maria Valley are areas in fractured bedrock with a high density of domestic wells (red shaded region with larger blue points) which is another important consideration for estimating well structural integrity. We can also see areas of high social vulnerability and a high density of water systems (hatching with water systems layers) mostly in Goleta and the Santa Ynez, Lompoc, and Santa Maria Valleys. Although the Cuyama Valley does not have a high density of these water systems in comparison to other regions around the County, the risk is still high given that the Cuyama area has a high SVI and less viable options for connections to larger water systems.

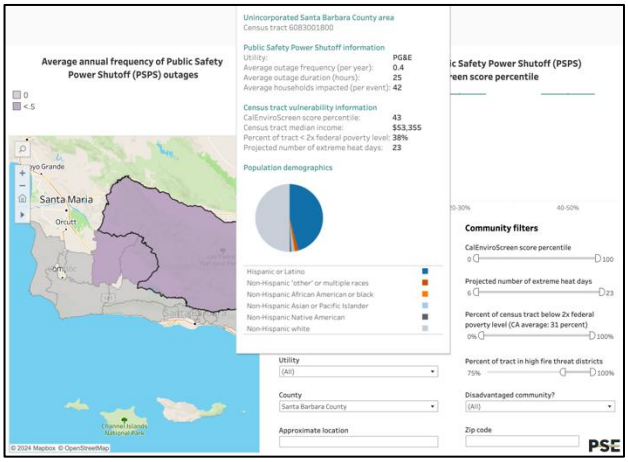


Data Source: CA DWR.

Figure 3-19. Map showing an example of integrating social and physical vulnerabilities.

Wildfire Risk and Public Safety Shutoffs

High wildfire risk zones with frequent public safety shutoffs can indicate a high likelihood of water shortage occurrence. The Public Safety Power Shutoff Map displays the frequency and duration of Public Safety Power Shutoff (PSPS)[11] outages in California. This dataset is paired with selected economic, demographic, and climate vulnerability information for each census tract. Data can be filtered by county, utility, CalEnviroScreen score percentile, and more. It is important to note that PSPS events are only one type of outage impacting communities and one of the only types of outages in California required to make data available that allows for census-tract level mapping. Figure 3-20 is an example screenshot from the average annual frequency of PSPS outages dashboard of census tracts with greater than 75% with high fire threat districts. Overall, when filtered to areas with high wildfire risk, the dashboard shows that most outages happen within the Cuyama and Santa Ynez Valleys and the Los Padres National Forest. The highlighted census tract includes the Cuyama Valley and the Los Padres National Forest. This tract has a high wildfire risk, and a higher CalEnviroScreen score (indication of vulnerability), longer average outage duration, and higher average households impacted compared to other tracts in the County. Also, when paired with the density of water systems in the area, the Cuyama Valley has less viable connections making the area more vulnerable to water shortage in times of public safety shutoffs.



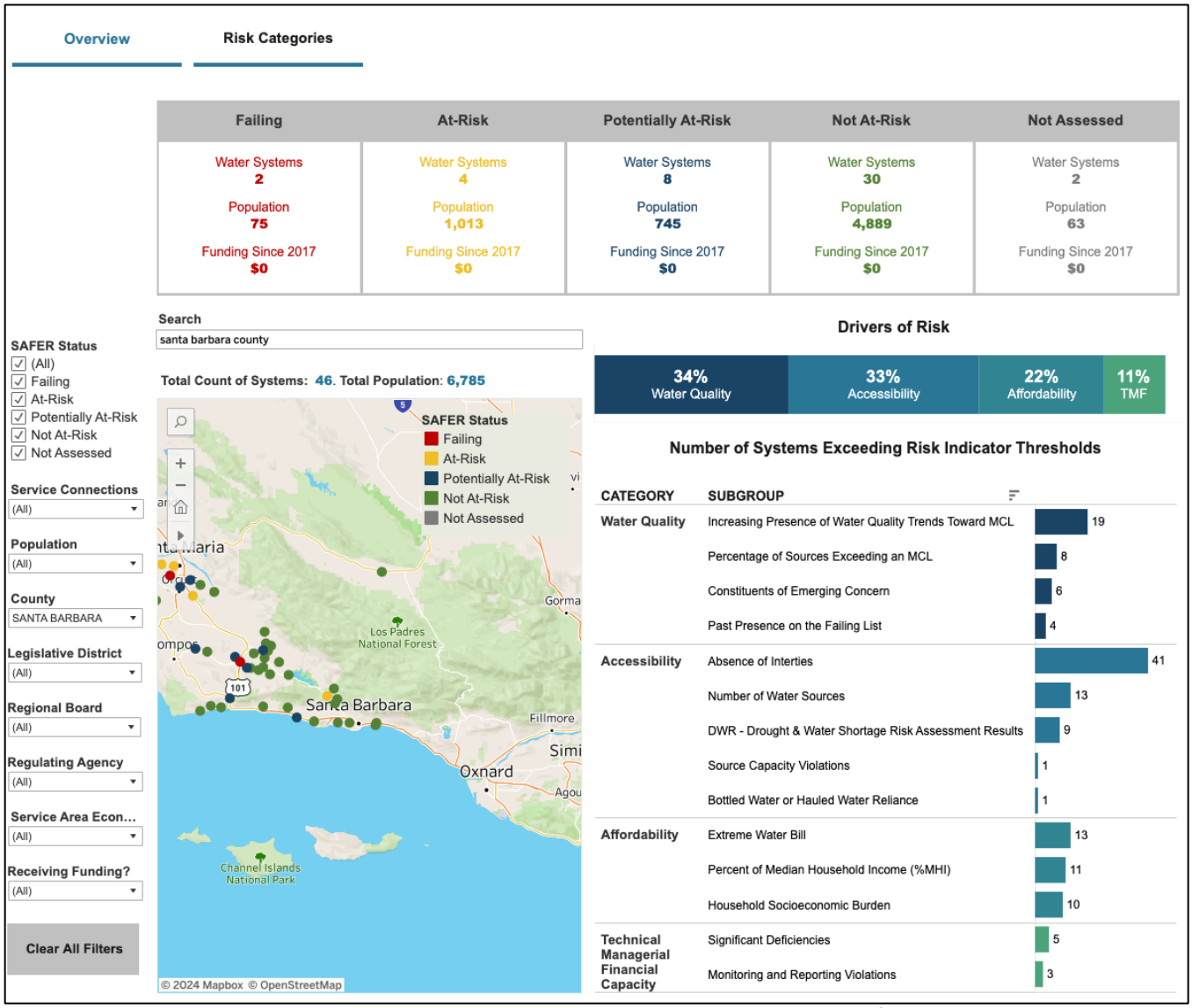
Data Source: PSPS

Figure 3-20. Screenshot from the PSE dashboard that displays census tract with >75% in high fire threat districts. The highlighted census tract (6083001800) includes the Cuyama Valley and the Los Padres National Forest, also a tract with a higher SVI.

State of California SAFER Risk Assessment for Community Water Systems and K-12 Schools

For a more holistic view of risk, the State of California has developed resources to monitor water systems, standardizing a way of measuring water systems risk. The Safe and Affordable Funding for Equity and Resilience (SAFER) program is a collaborative effort between the State Water Board's Division of Drinking Water, Division of Financial Assistance, and Office of Public Participation. The program developed an analytic water system risk tool called the SAFER status that combines four categories: water quality, accessibility, affordability, and technical, managerial, financial capacity (TMF). Figure 3-21 shows data for the 2024 Drinking Water Needs Assessment[12] which evaluates 46 community water systems and K-12 schools that are "at-risk" across Santa Barbara County. There are two water systems that are 'Failing', together they serve a population of 75. The four water systems 'At-Risk' of failing are distributed mostly in Santa Maria. Together these systems serve a population of 1,013. The majority (65%) of water systems are considered 'Not At-Risk'. Water quality is the largest driver of risk for these water systems, with many systems trending towards or exceeding a drinking water maximum contaminant level (MCL). Accessibility in the form of the absence of interties also imposes risk to these water systems. 41 of the 46 systems evaluated in the County do not have a documented intertie.

[11] https://www.psehealthyenergy.org/work/california-public-safety-power-shutoff-interactive-map/
[12] https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/needs/2024/2024-needs-assessment.pdf



Data Source: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/saferdashboard.html.

Figure 3-21. The SAFER status of public water systems and domestic wells in Santa Barbara County, California. Retrieved on September 30, 2024.

3.6. Limitations and Data Gaps

This analysis was conducted for Santa Barbara County using mostly statewide datasets, supplemented by local data from Santa Barbara County in 2024. These analyses are only a snapshot of the hazards and vulnerability based on the latest available data. As such, there are limitations to the vulnerability analysis, as the State's database is limited in its evaluation of water systems, extent, and data availability. The data resources primarily targeted for SB 552 do not include a separate assessment for small water systems. Both PVI and SVI outputs are not inclusive of all regions (i.e., Vandenberg Space Force Base, the Los Padres National Forest or other Federal or State responsibility areas, and the Santa Barbara Airport).

Additional data such as well activity data could provide insight on output frequency or water source and/or the interconnectedness of the water systems could identify connections in water shortage times. Water rights data can also provide detail for vulnerable areas that do not have a diverse water source portfolio (MJHMP, 2023). However, these data were not publicly available and/or not within the scope of this project. Given these limitations, the analyses from this Section can assist in the decision-making process to determine which areas in the County are more vulnerable than others, however additional tools and local knowledge can further refine the process.

3.7. Summary

As a part of this drought plan, a drought vulnerability assessment was conducted following the framework recommended by SB 552. A summary of the assessment findings are:

- Drought and wildfire are notable environmental hazards to the County. The County has a high physical vulnerability to current and future climate change impacts, thus monitoring emerging dry or drought conditions via “ready-to-use” indices can help with better informed management planning and preparedness.
- There are many wells older than 50 years across each water system. Wells older than 50 years may be more vulnerable to future water shortages, as risk of well component failure increases with age.
- Highly populated areas in the County (e.g., Santa Maria, Lompoc, communities along the South Coast) have higher physical and social vulnerabilities. There are different factors that contribute to an area’s vulnerability, like the risk of saltwater intrusion for the South Coast or housing and income burden in select areas along the South Coast and in the Santa Maria Valley. However, in these populated areas, there is a higher risk of water shortage because it will affect a larger portion of the County’s population.
- In terms of social vulnerability, the Cuyama Valley region is underrepresented as its Tract boundary includes the Los Padres National Forest region which might dilute the vulnerability calculation. Regardless, its SVI indicates a high social vulnerability. This region is also more likely to receive power shutoffs, and with its relative remoteness to the rest of the County and lower density of water systems, its ability to connect to larger systems or receive resources may be limited.
- While areas that rely exclusively on groundwater are inherently vulnerable during drought-induced water shortage times, the Cuyama Valley and Mission Hills particularly face greater risk as they also have higher social vulnerability.

4. Assessment of Short-term Emergency Response Needs

Short-term response actions are used to mitigate the impacts during the onset and duration of drought conditions, or to address water shortage events as they are occurring. These short-term actions will differ from long-term actions as they are only meant for quick response in an emergency, as opposed to long-term strategies that will be taken in preparation for future events. However, some of these short-term response needs have elements that can be or should be considered prior to an incident. Chapter 4 of the Drought Guidebook[13] provides examples of short-term response actions that the County should consider. Short-term emergency response actions to be taken during drought and water shortages should be organized and established with partners prior to an emergency. Here we provide an assessment of many short-term emergency response needs the County, Water Systems, and Water Users can consider implementing.

4.1. Mutual Aid Agreements

Mutual aid agreements should be considered as a tool for public water systems to address water shortage events and restore critical operations during emergencies. Mutual aid agreements are generally arranged between large water suppliers, small water systems, and/or domestic wells to establish how they may help each other improve water supply reliability during an emergency.

The County may serve as a facilitator to the formation of these agreements. Facilitation would occur before an emergency and would be generalized (i.e., not for a specific event). These facilitations would be inclusive of all large water purveyors in the County to discuss options for equitable sharing and flexibility, and to avoid unintended negative impacts.

One option for the County is to consider a potential collaboration with the California Water/Wastewater Agency Response Network (CalWARN). A list of CalWARN member agencies in Santa Barabara County are documented in Section 6 of the Appendix. CalWARN promotes emergency preparedness and disaster response with the provision of a standard omnibus mutual assistance agreement, resources to respond and recover more quickly from a disaster, and a Statewide mutual assistance program.

The California Utilities Emergency Association (CUEA) could also be considered for potential collaboration. The CUEA provides emergency operations support for utilities and can assist with emergency response, planning, and training exercises.

The following is the suggested course for setting up mutual aid agreements:

- **Step 1) Engage with large water suppliers, small water systems, and domestic well users**
  - Determine large water purveyors willing to enter into agreements.
  - Identify small water systems and domestic wells that may be vulnerable to water shortages.
  - **Outcome**: A list of potential members who may enter into a mutual aid agreement.
- **Step 2) Identify potential collaborators**
  - Explore collaboration with California Water/Wastewater Agency Response Network (CalWARN).
  - Explore collaboration with the California Utilities Emergency Association (CUEA).
  - Determine roles and activities of collaborators.

[13] https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/SB-552/DWR_Final_Guidebook_20230313_ADA_508_v5.pdf

  - **Outcome**: A group of collaborators has been established.
- **Step 3) Facilitate the formation of agreements**
  - Refer to templates for mutual aid agreements (Appendix C in the Drought Guidebook)
  - See examples of existing agreements, for example between Butte County and Paradise Irrigation District (Appendix D in Drought Guidebook).
  - Schedule convening with members and collaborators.
  - Discuss options for mutual aid agreements.
  - Facilitate development of terms and conditions of the agreements.
  - Plan for potential unintended impacts.
  - **Outcome**: Draft mutual aid agreements under consideration.
- **Step 4) Follow up to ensure official establishment of mutual aid agreements.**

4.2. Interties

An intertie represents a physical interconnection between water systems permitting the exchange or delivery of water between those systems. Similar to mutual aid agreements, the intertie would serve as an agreement between two willing water systems. Also, like mutual aid agreements, unless the County serves as a water purveyor, the County may serve as a facilitator for these interties to be arranged. Implementation of the interties would then be the responsibility of the water systems.

The terms and agreements for water sharing within the intertie should be established by these entities prior to a water shortage event. Once in place, an intertie may be considered as a quick response action during times of drought emergency or water shortage events.

When considering the potential development of interties, the County should engage relevant parties to devise beneficial arrangements. Meetings may then be facilitated by the County to discuss the accessibility of water supply needed and the terms of the agreement. Ideally, these arrangements would lead to regional solutions and long-term collaborations.

4.3. Permit Streamlining and Coordination

Prior to drought or water shortage events, the County may wish to develop procedures and protocols that would streamline permitting to provide timely assistance to impacted households and state small water systems. The County should also consider limitations during development. Procedures would need to include defined triggers for activation and deactivation.

The County does have processes in place to streamline permitting during emergencies. The County Ordinance for Water Wells (34A) and Water Systems (34B) have emergency provisions that detail development actions that can be completed prior to- or without obtaining a permit, subject to additional provisions:

- Wells: Sec. 34A-10. - Emergency.[14]
- Domestic Water Systems: Sec. 34B-3. - Acts prohibited—Permit required.[15]

The County may use Executive Order (EO) N-7-22 as a model for establishing protocols and procedures. This EO is only effective during a drought emergency and provides guidance on new well permits and

[14] https://library.municode.com/ca/santa_barbara_county/codes/code_of_ordinances?nodeId=CH34AWE_S34A-10EM
[15] https://library.municode.com/ca/santa_barbara_county/codes/code_of_ordinances?nodeId=CH34BDOWASY_S34B-3ACPRERRE

exemptions. Other permit streamlining could be considered for activities such as well construction, deepening, and rehabilitation.

4.4. Emergency and Interim Drinking Water Supplies

The County should develop protocols and actions to be taken during an emergency to continue to meet basic health and safety needs. As a guideline, the CA DWR notes that the 2023 indoor water use efficiency standard is 55 gallons per capita per day for urban water suppliers (CA DWR, 2021). The protocols would include options for emergency water supplies (provided as a last resort option) and interim drinking water supplies (a temporary supply to meet needs until a permanent water supply is secured).

Prior to drought or water shortage events, the County should designate a County-level emergency response unit that will aid in planning and developing an Emergency and Interim Distribution Plan and implement response actions in times of need.

The following options were adapted from the 2014 Emergency Drinking Water Procurement and Distribution Planning Guidance[16] document by Cal OES. The County should consider these as part of the Emergency and Interim Distribution Plan.

Dedicated Water Filling Stations

Counties may reach out to large water purveyors to assess willingness to provide emergency water supplies to state small water systems and domestic wells. During emergencies, when they cannot access their regular water supply, large water purveyors may have the capacity to share their water stations as long as it doesn't put additional burdens on them and is within their regulatory requirements.

Counties can coordinate with the large water purveyors to establish agreements, evaluate water quality standards for potable drinking water, and plan for residents to haul their own water (as the purveyors are unlikely to agree to transporting water from stations to residents).

Treatment of Available Water from Alternate Sources

The County should identify water sources that may have been rejected for use but could be considered during water shortages. The State Water Board's Drinking Water Program or County Public Health Officer can provide guidance to ensure compliance with regulations and requirements, to set up portable water treatment systems as needed, and get the use of these alternate sources approved.

Packaged or Bottled Water

Prior to an emergency event, the County may wish to consider an agreement with vendors on the provision of bottled water to state small systems and domestic well owners. The California Department of Public Heath's (CDPH) Food and Drug branch maintains a list of approved vendors. The California Department of General Services has established a statewide bottled water contract (that can be found in Appendix E of the 2014 Emergency Drinking Water document linked above) and statewide bulk water delivery contract. The County can develop a bottled water distribution plan that identifies vendors and other distributors for sources of bottled water, plans for storage based on vendor recommendations, and provides a plan for distribution.

Water Hauling or Bulk Water Delivery

[16] https://www.caloes.ca.gov/wp-content/uploads/Preparedness/Documents/EmergencyDrinkingWaterProcurementDistributionPlanningGuidance2014.pdf

The County should consider three types of water hauling contracts. First type would be a direct purchase order for a specific amount of water delivered to a specific location. The second type is a transportation contract to move water as requested. The third is service contract for a contractor to provide bulk water and storage at a receiving location.

4.4.1. Partnership with Non-Governmental Organizations (NGOs)

Partnerships with NGOs can be a viable option for the County seeking support during an emergency. These organizations can assist with storage and delivery of water and may also be beneficial through their existing relationships within local communities. The State Water Board maintains a list of NGO resources by region.

4.4.2. Points of Distribution

Along with the preparation of diverse options for emergency and interim water supplies, the County should identify locations that would be ideal for distributing water. These locations may be selected based on size, proximity to infrastructure and facilities, accessibility, delivery and storage considerations, security, and staffing.

4.4.3. Potential Barriers

There are potential barriers that the County should identify with respect to the options that will be contained in the County's Emergency and Interim Water Distribution Plan. In anticipation of some of the challenges, the County must address limitations due to regulatory requirements, have a plan to ensure standards are met for water quality, and get approval from state and health officials when necessary.

Due to limited resources, small water systems may not have the capacity to implement various mitigation measures. The county should consider additional support for an equitable distribution of emergency response measures across larger purveyors and small water systems.

Accessibility will be another important consideration. Based on community feedback from **Cuyama**, the potential for disruptions due to road closures during wildfire and flood events could limit the feasibility of water hauling or bulk delivery. It's critical for the County to ensure that points of water distribution have not only road access for delivery of water, but access via public transportation, clear planning around the location and routes to the location, and central to the communities in need.

It will also be important to consider what vulnerable populations will be most impacted and develop strategies to ensure those groups' needs are met. Information from Section 3 of this Plan can help inform the County with prioritizing which communities are most vulnerable to water shortage. Established partnerships with local community organizations may help with communicating building trust with these vulnerable communities.

4.5. Triggers to Activate Response Actions

Clear triggers need to be identified for the purpose of activating drought response actions. One trigger may be a declared emergency by the State. Some triggers will require regular monitoring of available data, such as drought and hydrologic conditions. Other triggers may be considered based on information requested or received from various sources, such as reports of water shortages or dry wells.

When developing triggers, consider the various stages to monitor for. One example is to have 3 stages for 1) no drought, 2) moderate drought, and 3) severe drought. The County will need to work with the Drought and Water Shortage Task Force and other relevant stakeholders to determine the metrics that will be assessed for the different stages. Once the metrics have been determined, the County will need

to identify the action that will be taken for each stage, an important step in planning and preparing for future drought. Table 4-1 shows an example drought trigger matrix that can be used to identify drought stage and the related actions based on predetermined thresholds.

Table 4-1: Sample design for evaluating metrics that will trigger actions.

Drought Status	Metric 1	Metric 2	Metric 3	Actions
Normal	Within normal range	Within normal range	Within normal range	Monitoring
Moderate	Lower threshold	Lower threshold	Lower threshold	Moderate actions
Severe	Higher threshold	Higher threshold	Higher threshold	Emergency actions

Some recommended metrics the County may include as triggers:

- Current U.S. Drought Monitor drought category for Santa Barbara County.
- Short-term Standardized Precipitation Index (1 to 3 months) for Santa Barbara County.
- Groundwater levels.
- Number of dry well reports received.

Triggers may activate the emergency response actions that have been developed and agreed upon by the County (e.g., mutual aid agreements, interties). Triggers can also initiate different communication and coordination types and levels (see Section 4.6.1 below for more details). Actions during a “normal” stage might include work on recovery from a previous event, assessment and evaluation, and long-term mitigation activities. Once in a “moderate” type stage, the County may wish to consider establishing and activating the existing or a more focused drought task force that can help coordinate actions to be implemented. Depending on the type of situation in the “severe” stage, this could be the time for activation of the Emergency and Interim Water Distribution Plan and other emergency responses.

4.6. County Implementation

Once Water Systems have explored and/or established agreements of mutual aid and interties, and have planned for different pathways of distributing water, the County DRP should serve as a toolbox of many options to meet health and safety needs during a water shortage. With these options, the County will want to include plans for communicating and coordinating before, during, and after an emergency. This will also include the development of the Emergency and Interim Water Distribution Plan.

4.6.1. Communication and Coordination

Regular communication will be important for the success of establishing agreements, monitoring for triggers, and preparing for a possible emergency. Communication also becomes essential during emergency response situations, from coordinating with water purveyors and those who provide resources to communicating with communities and residents. This is a list of potential communication and coordination steps the County may wish to consider in the drought response plan:

- **During normal times:** This is the time to establish or modify plans for emergency response.

  - Coordinate early with large water purveyors, collaborators, state small water systems and domestic well users.
  - Facilitate convenings for mutual aid agreements and/or interties.
  - Communicate with local community organizations and NGOs to establish relationships.
  - Regularly communicate status of indicators and the potential for triggers in the near future.
- **Prior to an emergency:** In this time, some triggers may have been activated, but not all, and emergency response is not needed yet. However, water shortages may soon become an issue, requiring preparation for emergency responses.
  - Increase communications with partners, water purveyors, and residents.
  - Communications should include recommendations to increase preparedness.
  - Designate and coordinate with the County's emergency response unit.
  - If the County has a task force, this may be the time to activate it.
- **During an emergency**: Short-term emergency response plans have been implemented and it's possible that the Emergency and Interim Water Distribution Plan will also be implemented. Communication and coordination efforts will be at their highest.
  - Information distribution could include public meetings, newsletters and email lists, updating the County website, radio or television, or door-to-door distribution.
  - In addition to distribution of information, ensure that communications can be received in languages widely spoken in the County, are accessible to hearing and visually impaired, and can also be received by those with no internet access.

4.6.2. Emergency and Interim Water Distribution Plan

An Emergency and Interim Water Distribution Plan should be integrated into the County's drought response plan. Lead agencies should be identified for the following items:

- Development of the plan.
- Implementation of the plan during emergencies.
- Community engagement and coordination.
- Distribution of information.

When developing the plan, some parts might clearly detail actions to be taken during an emergency. However, other items may need to be tailored depending on the specific event. During a water shortage, the County agencies and their partners will need to consider:

- Water quantity that will be needed for distribution.
  - Estimate the duration of the water shortage.
  - Assess the geographic area that is impacted.
  - Consider the population and demographics within the impacted area.
- Preferred methods of distribution.
  - Identify staging areas and points of distribution.
  - Explore options for bulk or bottled water.

- Assess the need for delivery of water.
- Determine staff resources and equipment needed for the emergency.

Drought and water shortage emergencies can be localized and highly variable from one event to another. Flexibility and customizations within the distribution plan will make it more useful.

4.6.3. Adaptive Management

The County may want to consider ad hoc updates to the assessment of short-term emergency response needs that are detailed in the County DRP. After emergencies, the County could facilitate a meeting with partners, water purveyors, state small water systems, and domestic well users identified in the short-term response needs. Discussions during the convening should include:

- Assessment of short-term response actions taken.
- Evaluation of actions taken, including performance metrics.
- Identification of gaps and lessons learned to be added or modified in the plan for the next emergency.
- Determination of the effectiveness of water distribution during the emergency.

Outcomes from the meetings would be integrated into the portfolio of short-term emergency response actions through modifications of existing actions, addition of new actions (or follow up to develop new actions identified as necessary), and/or removal of actions where significant unanticipated barriers arose.

5. Long-Term Mitigation Strategy & Actions to Implement Recommendations

Short-term emergency response needs are identified, developed, and implemented to meet immediate and basic needs during an emergency. Long-term mitigation strategies encompass plans that will 1) **mitigate** the impacts of a drought or water shortage event, 2) **build capacity** to better prepare for events, and 3) **increase resilience** during and after the event. In short, long-term mitigation strategies seek to reduce the vulnerability and impact of future drought events. Additionally, effective implementation of long-term strategies may help to reduce the extent and cost of some short-term emergency response actions. When considering the costs of implementing long-term mitigation strategies, it's also important to consider the cost of impacts from events, which many times can be higher than the cost of preparation. Given the range of potential long-term mitigation strategies, they can be evaluated and prioritized using standardized methods like the STAPLEE developed by FEMA[17], which is also implemented in the SB County MJHMP. These structured steps help to focus and provide foundation to mitigation actions using a 7-criteria approach: Social, Technical, Administrative, Political, Legal, Economic, and Environment.

S.T.A.P.L.E.E.

Mitigation Prioritize and Plan

Social: Is there support from and benefit to the community?

Technical: Is it technically feasible and sustainable?

Administrative: Is there available staff and management?

Political: Is there local, regional, and national political support?

Legal: Is it legal under current law?

Economic: Is it cost-effective?

Environment: How will this project affect the environment?

Chapter 5 of the Drought Resilience Plan Guidebook details several long-term mitigation strategies that the County may want to consider. While short-term emergency response needs should still be identified and planned, the goal of these strategies is to reduce the reliance on such response actions.

5.1. Drinking Water Well Mitigation Program

A domestic well drinking water mitigation program can help to identify the necessary steps to take for wells that are more susceptible to shortages. It is recommended that a program is developed so that it is ready in advance of its need for users in the County. The Drinking Water Well Mitigation Program in Santa Barbara County should include shallow wells or those in certain locations that are more prone to drying up, making it vital for the County to establish a mitigation program. This program is a requirement under SB 552, mandating counties to develop strategies to help rural communities relying on groundwater for drinking water. The program aims to ensure that residents have access to resources to reduce water shortage risks and offset impacts.

The mitigation program identifies wells at risk, developing options for mitigation (such as well rehabilitation), implementing community-supported solutions, and ongoing coordination for well monitoring. It emphasizes the importance of counties collaborating with GSAs to manage groundwater levels effectively. Additionally, the County can seek technical and financial assistance from State and Federal agencies to support the planning and implementation of this program, ensuring sustainable water management for all residents.

[17] https://toolkit.climate.gov/sites/default/files/PG_Resource_5.3_V2.pdf

- **Step 1) Assess Hydrologic Conditions**
  - Identify areas with large groundwater demand.
  - Determine wells prone to drying up during droughts.
  - **Outcome**: If susceptible wells are found, proceed to step 2. If not, periodically reassess hydrologic conditions.
- **Step 2) Form County Leadership**
  - Collaborate with local and State agencies.
  - Establish leadership roles under SB 552 implementation.
  - **Outcome**: If leadership is established, proceed to step 3. If not, resolve leadership roles and reassess collaboration efforts.
- **Step 3) Develop Mitigation Program**
  - Identify impacted wells through a drought and water shortage risk assessment.
  - Develop mitigation options (e.g., well rehabilitation, deepening, new installations).
  - **Outcome**: If a program is developed, proceed to step 4. If not, reassess risk assessment and mitigation options.
- **Step 4) Implement Solutions**
  - Coordinate with local and State agencies for community-supported solutions.
  - Monitor wells for maintenance and adapt to changing conditions.
  - **Outcome**: If solutions are implemented, proceed to step 5. If not, reassess community support and coordination efforts.
- **Step 5) Engage with GSAs**
  - Integrate mitigation efforts with Groundwater Sustainability Plans (GSPs).
  - Recognize groundwater level fluctuations and long-term sustainability goals.
  - **Outcome**: If integration is achieved, proceed to step 6. If not, reassess coordination with GSAs.
- **Step 6) Seek Assistance**
  - Apply for technical and financial assistance from State and Federal agencies.
  - Identify suitable grants and funding opportunities for planning and implementation.
  - **Outcome**: If assistance is obtained, proceed to step 7. If not, reassess funding opportunities and application strategies.
- **Step 7) Monitor and Report**
  - Establish a groundwater monitoring network.
  - Record and analyze water levels and quality data.
  - **Outcome**: If monitoring is not effective, reassess monitoring strategies and data collection. Otherwise, plan to periodically repeat the steps as needed.

5.1.1. Well Rehabilitation

For those wells identified in Step 3 above where well rehabilitation is the most viable option, the County should outline the following actions:

- Prioritize wells that have experienced water shortages or are high risk in the near-term.
- Investigate the cause for dry wells to develop well-specific solutions.

- Address limitations for well owners, including affordability of immediate costs and long-term operating and maintenance costs. This might be addressed with the development of an assistance program to support well rehabilitation and new well installations.

5.1.2. Water Shortage Prevention for New Wells

The County is encouraged to consider preventive measures as part of its well permitting practices. These measures may be expanded upon as requirements or formalized ordinances.

- The drought and water shortage risk assessment can be used to identify high risk areas for water shortages. The construction of new wells in these areas could be restricted. This option would align with Step 5 above, as the County is encouraged to consult with GSAs on these new well installation requests.
- New wells should be constructed to an appropriate depth to provide adequate supply even when water levels drop. With the establishment of a groundwater monitoring network, nearby water levels can inform the depth targets for new construction.
- Requirements for new permits should include demonstration of no apparent risks to existing well operations. In addition to following State well standards, the County should also work with GSAs where the area is subject to a GSP or consult with State and local agencies where the area is not subject to a GSP.

5.1.3. Water Shortage Prevention for Existing Wells

Consistent collaboration and communication with regional partners, including well operators, are key components for water shortage prevention. The establishment of a groundwater monitoring network can provide early warning of drought and potential water shortage events. The County should review existing monitoring efforts within the County (this could include sampling data from small water systems) and work done by GSAs. Additionally, there are State (e.g., California's Statewide Groundwater Elevation Monitoring program) and Federal monitoring efforts (e.g., USGS) that can be included in the network.

Distribution of educational and informational materials can also be a part of water shortage prevention. These materials could contain:

- Guidance on management and well maintenance responsibilities.
- Potential drought risks associated with drinking water wells.
- Risk maps highlighting areas likely to have wells run dry or experience water shortages.
- Direct outreach options to discuss remedial actions or long-term planning.

5.2. Consolidation Plan

SB 552 requires the County to consider Water System Consolidation, which is the joining of two or more water systems in a manner to improve the reliable supply or quality of drinking water for at least one of the systems. Typically, consolidation involves a smaller water system being absorbed into a larger system, extending drinking water infrastructure or the extension of water services to households on domestic wells and communities that are not connected to publicly regulated systems. Below are steps to determine if consolidation is appropriate for individual wells or small systems.

Consolidation can involve a spectrum of collaborative efforts that merge aspects of two or more water systems. Consolidation can occur at a managerial level, such as merging and sharing of operations like administration and billing. Consolidation can also be considered at the physical level, which involves

the merging of the physical water system infrastructure, including distribution pipelines and water treatment facilities. One successful example from the City of Santa Maria is the connection of city water to Bonita Elementary School, which relies on domestic well water. Their consolidation effort includes construction of pipelines and shifting the use of existing well water to non-potable uses (see Appendix Section 5 for more details).

- **Step 1) Identify Consolidation Candidates for Wells and Water Systems**
  - Based on the drought and water shortage risk assessment, identify areas where system consolidation may be beneficial.
  - Proceed to Step 2 if areas are identified; otherwise, terminate the process.
- **Step 2) Evaluate Nearby Public Water Systems**
  - Use tools like the Consolidation Outreach Map Tool to find the nearest public water systems.
  - If a nearby system is found, proceed to Step 3; if not, consider managerial consolidation or water partnerships and terminate the physical consolidation process.
- **Step 3) Check Service Boundaries**
  - Verify if the small water system or domestic wells fall within the service boundary of the identified public water system.
  - If within the boundary, proceed to Step 4; if not, check Local Agency Formation Commissions (LAFCO) boundaries and surface water rights boundaries and then proceed accordingly.
- **Step 4) Contact Local Water System for Consolidation**
  - Discuss consolidation options with local water system managers.
  - Identify and document any barriers to consolidation.
  - If barriers are manageable, proceed to Step 5; if not, address barriers or consider alternative solutions and then proceed.
- **Step 5) Contact Division of Drinking Water District Office**
  - Discuss the information and potential funding mechanisms with the Division of Drinking Water SAFER Engagement Unit staff.
  - If support and funding are viable, proceed to Step 6; if not, seek additional guidance or terminate the process.
- **Step 6) Determine Funding for Consolidation**
  - Explore and secure funding from State and Federal sources.
  - If funding is secured, proceed to Step 7; if not, re-evaluate funding options or terminate the process.
- **Step 7) Implement Consolidation**
  - Carry out the construction and logistical steps needed for consolidation.
  - Provide assistance to residents for signing up with the new public water system.
  - If the consolidation is completed successfully, proceed to Step 8; if issues arise, address them and then proceed.
- **Step 8) Dissolve Old Water System**
  - Ensure the legal dissolution of the old water system, including canceling permits, licenses, and transferring records to the new system.

- If dissolution is complete, terminate the process; if not, resolve any outstanding issues and then terminate the process.

5.3. Regional Water Infrastructure Investment

Investment into water infrastructure can be an important component of long-term mitigation activities. These investments can increase the County's resilience by mitigating the impacts of drought and potentially minimizing future water shortages. Infrastructure investments should focus on projects that allow for movement of water to areas experiencing higher demand or to address a water shortage emergency. The following types of projects may include:

- Construction of surface water diversions.
- Improvement or expansion of water infrastructure interties.
- Augmentation of groundwater resources.
- Augmentation of surface water storage.

The following steps can aid in the planning for regional water infrastructure investment.

- **Step 1) Review local planning documents**
  - Integrated regional water management plans.
  - Regional drought contingency plans.
  - Urban water management plans.
  - Other relevant studies, this DRP, etc.
  - Identify regional projects within these plans that can help with leveraging existing infrastructure, developing additional interties, or providing mutual aid.
- **Step 2) Prioritize projects**
  - The drought and water shortage risk assessment (detailed in Section 3) can be used to identify those areas that are more susceptible to water shortages.
  - Regional projects can also be used to extend services to underserved areas.
- **Step 3) Develop a plan**
  - Consider strategies for funding-prioritized projects.
  - Allocate budget for completing feasibility studies.
  - Additional allocations for local cost share when applying for grants.
- **Step 4) Pursue potential partnerships**

5.4. Filling Data Gaps

Adequate data is essential for conducting and updating drought and water shortage assessments and for monitoring conditions in the County. Long-term mitigation planning should include procedures for evaluating and filling data gaps on a regular basis.

The main source for Statewide data can be found in DWR's Water Shortage Vulnerability Explorer. The County should inventory existing county-level and local data sources that could enhance the drought and water shortage risk assessment and identify where new data may be necessary. While acquiring and maintaining supplemental local data can be expensive, the County can develop a strategic plan for identifying needs, estimating costs, and using partnerships to make filling data gaps feasible.

- **Step 1) Data gaps assessment**

  - Map out data from DWR's Water Shortage Vulnerability Explorer.
  - Integrate local and county-level supplemental data.
  - Identify areas that are data sparse and datasets that are scarce or non-existent.
  - Highlight vulnerable areas from the drought and water shortage risk assessment where more data is needed.
- **Step 2) Plan for data acquisition**
  - Estimate long-term costs for data collection, such as necessary equipment and installations, operations, and maintenance.
  - Establish guidelines for data collection, how often it will be collected, and data dissemination (e.g., raw data distribution, via dashboard, etc.).
- **Step 3) Leverage resources and partnerships**
  - Identify funding sources and strategize how to obtain funds.
  - Identify County departments or local agencies that can assist in collecting, processing, and managing data.
  - Establish partnerships for sharing data acquisition efforts. Academic and research institutes and extension programs are options.
  - Consider collaboration with neighboring counties with similar data gaps to increase cost efficiency.
- **Step 4) Implementation**
  - Consider integrating new and existing data into one consistent format (or dashboard) for easy access and monitoring.
  - Include in long-term mitigation plan a process to assess and update data gaps as needed.

6. Implementation

This section reviews implementation strategies for the Santa Barbara County DRP with regards to 1) potential funding sources, 2) alignment with previously published State and County plans and efforts. Understanding alignment with other programs and plans helps with better prioritization and coordination to implement actions during drought periods.

6.1. Funding Analysis

This section presents potential funding sources for plan implementation, focusing on local, state, and federal opportunities. State-level funding includes options from the California Department of Water Resources (DWR), the California Department of Conservation, and the State Water Resources Control Board, which support projects to improve water supply reliability and quality. Regional resources from the Central Coast Regional Water Quality Control Board and the Santa Barbara County Water Agency are available for water conservation and drought mitigation. Federal programs like WaterSMART from the Bureau of Reclamation also assist with drought resiliency efforts. Additionally, private and NGO funding sources are explored.

Several key funding opportunities support water projects focused on recycling, drought resilience, and infrastructure improvements. California's Small Community Drought Relief Program, managed by the Department of Water Resources (DWR), provides $95 million in immediate relief funding for small communities facing water shortages. This program offers support for water storage tanks and hauled water for households with dry wells, ensuring short-term water security during droughts. Additionally, State-level funding sources such as Proposition 68 and Proposition 1 target water recycling projects, offering up to $15 million per project and covering 35% of eligible construction costs, focusing on augmenting water supplies through treated municipal wastewater.

Federal funding opportunities complement these State programs by enhancing drought resiliency and infrastructure improvements. The WaterSMART Small-Scale Water Efficiency Projects program offers up to $125,000 per project to improve water conservation, while the Small Surface Water and Groundwater Storage Projects program provides up to $30 million for planning and construction of small-scale storage projects aimed at improving water reliability, groundwater management, and environmental benefits. The WaterSMART Large-Scale Water Recycling Projects program supports recycling initiatives with federal funding for up to 25% of project costs for efforts over $500 million. Additionally, the Water Infrastructure Finance and Innovation Act (WIFIA) program provides credit assistance for infrastructure projects, including desalination, wastewater management, and stormwater improvements, strengthening long-term water supply and drought resilience.

6.1.1. Rate Changes

The most dependable funding source for small water systems is often to adjust their rate structure. A rate designed to build reserves significantly enhances a system's resilience against challenges such as drought and aging infrastructure. However, to minimize short-term cost increases for customers, small systems often avoid making charges for long-term expenses like infrastructure replacement from their regular billing. These systems may need to make a concerted effort to plan for future infrastructure replacement. Establishing a financial reserve is often a crucial step toward building resilience. Additional support and guidance from the County would assist these systems in financial planning and rate-setting, helping them gradually raise rates to accumulate sufficient reserves to support required drought resilience projects.

6.1.2. Local Funding

Currently, no local funding opportunities have been identified. Future programs may emerge, but their availability may be limited, depending on the opportunities provided by grant funding.

6.1.3. State Funding

6.1.3.1. Small Community Drought Relief Program

The Small Community Drought Relief Program[18], established by the Department of Water Resources (DWR), offers immediate financial and technical assistance to small communities experiencing water supply challenges due to drought. Authorized by the Budget Act of 2021 and amended in 2022, the program allocated $200 million, with $185 million designated for grants for eligible projects, already committed to 89 projects. An additional $95 million was made available in Budget 2022 to continue the program, along with $20 million for a new tank program aimed at providing household water storage tanks and hauled water for residents with dry wells. Eligible projects must serve small communities not supplied by Urban Water Suppliers and focus on improving water supply reliability, enhancing storage, replacing aging infrastructure, and providing backup power sources. The program also funds temporary solutions, including hauled water, community water tanks, bottled water, water vending machines, and emergency interties. Applications are accepted on a non-competitive, first-come, first-served basis, with prioritization for urgent needs.

6.1.3.2. Proposition 68

Proposition 68[19] presents a compelling funding opportunity for bolstering drought resiliency in Santa Barbara County by offering targeted financial and technical assistance for water recycling projects. With an estimated total funding of $3 million, this program specifically aims to promote the beneficial use of treated municipal wastewater to augment freshwater supplies, which is crucial as the region faces persistent drought conditions. Eligible applicants, including local public agencies, can leverage this funding to construct essential infrastructure for recycled water treatment, storage, and distribution. The program supports various eligible project types, such as groundwater recharge, indirect potable reuse, and surface water augmentation, which align perfectly with the County's needs for sustainable water management. Importantly, the grant can cover up to 35% of eligible construction costs, with potential reimbursements of up to $15 million per project, making it financially viable for local agencies and organizations. By facilitating these critical projects, Proposition 68 not only enhances the reliability of local water supplies but also fosters community resilience against future droughts, particularly benefiting disadvantaged and severely disadvantaged communities throughout the County.

6.1.3.3. Proposition 1

The Proposition 1 Water Recycling program[20] offers a significant funding opportunity for enhancing drought resiliency in Santa Barbara County by supporting the construction of innovative water recycling projects. With a total estimated funding of $4.6 million, this program aims to provide technical and financial assistance to local agencies that seek to augment freshwater supplies through the beneficial use of treated municipal wastewater. Eligible applicants include local public agencies, nonprofit organizations, public utilities, and federally recognized Native American tribes, ensuring that a broad range of community entities can participate.

Projects funded under this program can include recycled water treatment facilities, storage and distribution systems, groundwater recharge initiatives, and indirect potable reuse projects, all of which

[18] Small Community Drought Relief Program https://water.ca.gov/Water-Basics/Drought/Drought-Funding/Small-Community-Drought-Relief
[19] Proposition 68 https://www.waterboards.ca.gov/water_issues/programs/grants_loans/docs/wrfp_guidelines.pdf
[20] Proposition 1 https://www.waterboards.ca.gov/water_issues/programs/grants_loans/docs/wrfp_guidelines.pdf

are essential for diversifying water sources and improving water management practices. Notably, the program mandates a local cost share of at least 50%, which can be reduced for disadvantaged communities, making it particularly accessible for those in Santa Barbara County facing economic challenges. The funding mechanism operates on a reimbursement basis, covering 35% of eligible construction costs, up to $15 million per project. This financial support is crucial in fostering collaboration among local agencies, enhancing infrastructure resilience, and ultimately contributing to a more sustainable and reliable water supply for the region.

6.1.3.4. Proposition 13 Water Recycling Planning Grant

The Proposition 13 Water Recycling Planning Grant[21], administered by the State Water Resources Control Board, provides technical and financial assistance to local agencies for planning water recycling projects that utilize treated municipal wastewater to augment fresh water supplies in California. Eligible applicants include local public agencies, nonprofit organizations, public utilities, tribal governments, and mutual water companies. The grant supports projects related to recycled water treatment, storage, distribution, pumping, groundwater recharge, and indirect potable reuse, while ineligible costs include operation and maintenance expenses. The grant covers all necessary costs to determine the feasibility of using recycled water. All community types are eligible, including disadvantaged and severely disadvantaged communities, with a requirement for a minimum 50% local cost share for non-disadvantaged applicants. For further details, the Water Recycling Funding Program (WRFP) Guidelines can be reviewed at the provided link.

6.1.3.5. Water Recycling Funding Program (WRFP) – Construction Grant

The Water Recycling Funding Program (WRFP)[22], administered by the State Water Resources Control Board, supports the use of treated municipal wastewater to augment fresh water supplies in California. It funds eligible projects, including the construction of recycled water treatment, storage, pumping, and distribution facilities, as well as groundwater recharge systems. Grant funding covers 35% of estimated construction costs, with a maximum amount set by the State Water Board. Applications are accepted continuously, with priority scoring used to develop an annual fundable list, where projects scoring above the cutoff will receive funding agreements for the fiscal year. Eligible applicants include local public agencies, nonprofit organizations, tribal governments, and regulated private utilities, with a minimum 50% local cost share required—this may be reduced for disadvantaged communities. The total estimated funding for the program is $5,000,000, with expected awards between $250,000 and $5,000,000, provided through reimbursement for eligible costs. The funding sources include Proposition 13, Proposition 1, and Proposition 68, with a performance period of three years.

6.1.3.6. Integrated Regional Water Management (IRWM)

Integrated Regional Water Management (IRWM)[23] is a collaborative initiative aimed at identifying and implementing regional water management solutions to enhance self-reliance, reduce conflicts, and build resilience against climate challenges while achieving social, environmental, and economic goals. Established following the passage of the Regional Water Management Planning Act (SB 1672) in 2002, IRWM has facilitated the approval of over $2 billion in bond funds for more than 1,450 multi-benefit regional projects throughout California. These projects focus on mitigating drought impacts, improving water supply reliability, and restoring ecosystems, among other objectives. Local communities have matched State funding at an average ratio of 2.5 to 1. DWR and the State Water Board have conducted various grant programs since 2002, including planning grants for regional water management groups,

[21] Proposition 13 https://www.waterboards.ca.gov/water_issues/programs/grants_loans/docs/wrfp_guidelines.pdf
[22] Water Recycling Funding Program (WRFP) – Construction Grant
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/
[23] Integrated Regional Water Management https://water.ca.gov/Programs/Integrated-Regional-Water-Management

implementation grants for over 800 projects, and grants supporting the involvement of disadvantaged communities and Tribes in the planning process. Moving forward, IRWM practitioners emphasize the need for greater recognition, alignment of policies, and sustained funding to ensure its future viability, as documented in the 2017 report "Stakeholder Perspectives – Recommendations for Sustaining and Strengthening IRWM."

6.1.3.7. Drinking Water State Revolving Fund (DWSRF) Planning

The Drinking Water State Revolving Fund (DWSRF) Planning[24] program offers funding for drinking water infrastructure improvements in Santa Barbara County, focusing on disadvantaged communities. Managed by the State Water Resources Control Board, the program assists public water systems in financing projects necessary to comply with the Safe Drinking Water Act (SDWA).

The DWSRF prioritizes funding for small community water systems (SCWS) and non-transient non-community water systems (NTNC) serving disadvantaged areas. Eligible applicants can receive principal forgiveness or grants up to $500,000 for planning and design costs. The program covers expenses such as feasibility studies, environmental documentation, and engineering specifications.

Applications are accepted on a continuous basis, facilitating access to funding as needs arise. By providing low-interest loans and grants, the DWSRF supports local efforts to enhance water quality and ensure reliable drinking water access. This funding opportunity addresses water scarcity challenges and aims to strengthen infrastructure in Santa Barbara County.

6.1.3.8. Small Community Clean Water/Wastewater (SCWW) Funding

The Small Community Clean Water/Wastewater (SCWW) Funding[25] program represents a valuable opportunity for enhancing drought resiliency in Santa Barbara County, particularly for small, disadvantaged communities (DACs) with populations under 20,000. With a total estimated funding of $110 million, this program provides low-interest loans, grants, and principal forgiveness to facilitate the planning, design, and construction of essential water quality improvement projects. Given that many communities in Santa Barbara face challenges related to water quality and accessibility, the SCWW program specifically targets areas with median household incomes below 80% of the Statewide average, ensuring that financial assistance reaches those who need it most. Eligible projects under this program include wastewater treatment facilities, sewer system improvements, stormwater reduction and treatment, and water reclamation facilities, all of which are critical to maintaining safe and reliable water supplies. The program's funding mechanisms, which utilize both federal and State resources, aim to promote sustainable drinking water and wastewater solutions, addressing the financial and technical needs of local agencies.

6.1.3.9. Technical Assistance Funding Program

The Technical Assistance (TA) Funding Program[26], managed by the State Water Resources Control Board's Office of Sustainable Water Solutions (OSWS), provides support to disadvantaged communities (DACs) in addressing drought-related challenges. The program offers assistance with developing capital improvement projects, conducting water audits, leak detection, and compliance reviews, helping communities improve the resilience of their water systems. Priority is often given to systems with insufficient water delivery or those affected by drought. Additionally, the program provides support for

[24] Drinking Water State Revolving Fund (DWSRF) Planning https://www.waterboards.ca.gov/drinking_water/services/funding/SRF.html
[25] Small Community Clean Water/Wastewater (SCWW) Funding https://www.grants.ca.gov/grants/small-community-clean-water-wastewater-scww-funding/
[26] Technical Assistant (TA) Funding Program https://www.waterboards.ca.gov/water_issues/programs/grants_loans/tech_asst_funding.html

financial and operational planning, which can help communities better manage water resources and plan for future drought conditions.

6.1.4. Federal Funding

6.1.4.1. WaterSMART Small Scale Water Efficiency Projects

The WaterSMART Small-Scale Water Efficiency Projects, offered by the U.S. Department of the Interior's Bureau of Reclamation for Fiscal Years 2024 and 2025[27], provide funding opportunities for drought resiliency efforts in Santa Barbara County. This program supports projects aimed at improving water conservation and efficiency through federal and non-federal cost-sharing partnerships. Eligible applicants, including states, tribes, irrigation districts, and local water agencies, can receive up to $125,000 per project. Priority is given to projects backed by existing water management plans and those aligned with federal goals like climate resilience and racial equity. The total program funding is $12 million, with application deadlines in January 2025.

6.1.4.2. Small Surface Water and Groundwater Storage Projects

The Small Surface Water and Groundwater Storage Projects (Small Storage Program)[28], managed by the U.S. Department of the Interior's Bureau of Reclamation, provides significant funding to support drought resiliency and water storage initiatives in Santa Barbara County. With a total funding pool of $43.5 million and individual awards up to $30 million, the program assists with the planning, design, and construction of small-scale water storage projects. These projects aim to enhance the reliability of municipal and irrigation water supplies, improve groundwater management, and deliver water quality and ecosystem benefits.

Aligned with federal priorities, the program supports efforts to increase climate resilience and promote racial equity, following Executive Orders 14008 and 13985. It prioritizes projects that deliver benefits to disadvantaged communities while expanding water storage capacity and improving water management flexibility to address climate change. The application deadline for the current round of this funding opportunity is December 12, 2024.

6.1.4.3. WaterSMART Large Scale Water Recycling Projects

The WaterSMART Large-Scale Water Recycling Projects program[29], administered by the U.S. Department of the Interior's Bureau of Reclamation, offers significant funding for water recycling projects aimed at increasing drought resilience in Santa Barbara County. Under this program, local water agencies can receive federal funding for up to 25% of project costs, with no cap on individual project awards. Projects must have a total cost of $500 million or more and focus on turning unusable water into reliable, drought-resistant supplies.

These large-scale water recycling initiatives help communities stretch their water supplies, improve efficiency, and provide flexibility during water shortages, all while supporting climate resilience and advancing equity goals under Executive Orders 14008 and 13985. The program also contributes to the Biden-Harris Administration's Justice40 Initiative, which aims to direct 40% of the benefits of federal investments to disadvantaged communities. The total available funding is $180 million, with current application deadline set for November 2024.

[27] WaterSMART Small-Scale Water Efficiency Projects For Fiscal Year 2024 and Fiscal Year 2025 (R24AS00059) https://www.grants.gov/search-results-detail/350845
[28] Small Surface Water and Groundwater Storage Projects (R25AS00392) https://grants.gov/search-results-detail/356327
[29] WaterSMART: Large-Scale Water Recycling Projects for Fiscal Years 2023 and 2024 (R23AS00433) https://www.grants.gov/search-results-detail/350116

6.1.4.4. WaterSMART Environmental Water Resources Projects 2024

The U.S. Department of the Interior's WaterSMART Environmental Water Resources Projects 2024[30] provides funding to enhance water supply reliability through conservation, infrastructure improvements, and watershed restoration. The Environmental Water Resources Projects Notice of Funding Opportunity (NOFO) for 2024 supports projects focused on water efficiency, water management upgrades, and nature-based solutions with ecological benefits. These efforts directly contribute to groundwater and drought resiliency by reducing water demand, improving water storage systems, and enhancing natural groundwater recharge through ecosystem restoration. Water conservation and efficiency projects help maintain groundwater levels, while infrastructure improvements prevent water loss. The program emphasizes collaboration and alignment with federal priorities like climate resilience (Executive Order 14008) and advancing racial equity (Executive Order 13985). With total funding of $5 million, the program offers awards up to $5 million. Applications for this funding opportunity are due by March 11, 2025.

6.1.4.5. Water Infrastructure Finance and Innovation Act (WIFIA) Program

The Water Infrastructure Finance and Innovation Act (WIFIA)[31] allows the Environmental Protection Agency (EPA) to provide credit assistance for a variety of drinking water, wastewater, and stormwater infrastructure projects. Eligible projects include those qualifying for the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF), covering areas like wastewater management, drinking water treatment, and the creation of new water systems.

WIFIA also supports infrastructure repair and replacement, energy efficiency enhancements, and innovative solutions such as desalination and water recycling, as well as projects aimed at drought prevention and mitigation. Additionally, the program permits the acquisition of real property and allows for a single application covering multiple eligible projects secured by a common pledge. For further details, refer to the WIFIA program handbook on the EPA website.

6.1.4.6. Individual Water & Wastewater Grants in California

The USDA Rural Development's Colonia Grant Program[32] provides funding to improve water access for disadvantaged communities in designated Colonia areas recognized before October 1, 1989. Available in rural parts of Arizona, California, New Mexico, and Texas, the grants help connect homes to community water systems by covering costs such as service line extensions, utility hook-up fees, and the installation of essential plumbing fixtures. Grant funds may be used to extend service lines from a system to a residence, connect service lines to a home's plumbing, and pay necessary charges or fees for these connections. The maximum grant for water-related improvements is $3,500, with a lifetime limit of $5,000 per household. Eligible applicants must own and occupy a home in a Colonia, meet income requirements, and have no outstanding federal debts. This program is designed to increase access to safe, reliable water systems for communities that have historically lacked essential infrastructure.

[30] WaterSMART Environmental Water Resources Projects 2024 (R24AS00299) https://www.grants.gov/search-results-detail/353621
[31] Water Infrastructure Finance and Innovation Act (WIFIA) Program https://www.federalregister.gov/documents/2024/09/09/2024-20220/notice-of-funding-availability-for-credit-assistance-under-the-water-infrastructure-finance-and
[32] Individual Water and Wastewater Grants by USDA https://www.rd.usda.gov/media/file/download/508-rd-fs-individualwaterwastewatergrants.pdf

6.1.4.7. Water Infrastructure Improvements for the Nation (WIIN) Act establishes the Small, Underserved, and Disadvantaged Communities (SUDC)

The Water Infrastructure Improvements for the Nation (WIIN) Act establishes the Small, Underserved, and Disadvantaged Communities (SUDC)[33] grant to fund projects in communities defined as underserved, small, and disadvantaged under SDWA 1459A. Eligible projects include improving water treatment, transmission, distribution, and storage systems; creating new water systems; consolidating existing systems; conducting household water quality testing; and increasing access to drinking water services. The grants also support technical, managerial, and financial capacity-building activities, as well as efforts to respond to drinking water contaminants. Projects must meet SDWA regulations and are funded through a noncompetitive application process.

6.1.4.8. Rural Development For Small Communities

Funding from several United States Department of Agriculture may be available through the Rural Development For Small Communities[34] initiative grants, though these grant funding opportunities are not currently open. These funds may be used to improve housing, community facilities, and community and economic development projects in rural areas.

6.2. Crosswalk County and State Plans

The Santa Barbara County Drought Resilience Plan is one of several plans that may address how the County responds to drought and emergency conditions. Here we review how the County DRP relates with previously published State, County, or other agency documents to ensure the Plan aligns with objectives presented in the documents. Table 6-1 lists the reports that helped inform or support the Santa Barbara DRP. While this list may not be comprehensive of all documents, it highlights the main existing local and regional planning efforts.

State Adaptation Planning Guide

The California Adaptation Planning Guide (APG; 2020) was developed by Cal OES to guide communities through the process of climate change adaptation and resilience that is consistent with State statues. At a high level, the APG emphasizes both the need for mitigation (offensive) and adaptation (defensive) measures but recognizes the impacts of climate change are already prevalent in the State and are expected to influence communities, thus adaptation is needed. The APG defines a four-phase process: 1) Explore, define, and initiate, 2) Assess vulnerability, 3) Define adaptation framework and strategies, 4) Implement, monitor, evaluate, and adjust, while stakeholder engagement is integrated within each phase. The various plans developed by or on behalf of the County and GSAs/groundwater districts, including this Plan, fall under Phase 1, 2, and 3 of the APG. While this Plan does not include explicit physical development plans, but rather a guide to inform decisions when in times of drought, elements from the State of California General Plan Guidelines (most recent update 2017; more specific information to Santa Barbara County: https://www.countyofsb.org/954/Comprehensive-Plan) are integrated into this Plan to inform long term mitigation strategies and actions. Both these State-wide plans act as the foundational blueprint for all future decisions related to land use, infrastructure, and resource conservation.

State Hazard Mitigation Plan (2023 Update)

The State of California State Hazard Mitigation Plan (SHMP, 2023) thoroughly reviews natural and non-natural hazards that most impact the State. There are a total of 34 hazards described, with the 15

[33] WIIN Act for SUDC https://www.epa.gov/dwcapacity/wiin-grant-small-underserved-and-disadvantaged-communities-grant-program-0
[34] Rural Development for Small Communities Grants https://www.rd.usda.gov/programs-services/community-facilities/rural-community-development-initiative-grants/ca

natural hazards fully described with the "hazard location, previous occurrences, impact analysis, probability of future events, vulnerability of State assets, how the State is currently mitigating the hazard, and new mitigation opportunities" (Executive Summary).

According to the SHMP, Santa Barbara County's highest natural risk hazards are wildfire, drought and water shortage, earthquake, and extreme heat and freeze. Climate change continues to impact the County, raising coastal hazards as a growing concern for the County. In terms of drought risk, the SHMP records that the County continues to experience drought periods and has suffered from the greatest water shortage period relative to larger urban areas during the 1987-1992 drought. The County also ranks the highest among other counties in the State in drought risk with a National Risk Index (NRI) score of 100 and an estimated expected annual loss of $214,679,980. The SHMP also highlights various efforts from the local-, community-, to governmental- scale to manipulate the hazard (e.g., recycling gray water), reduce exposure and vulnerability (e.g., reduce water system losses), and build local capacity (e.g., community engagement/education) (SHMP Table 13-4). This collective effort to mitigate drought impacts with SB 552 (i.e., this Plan) and other local efforts are a response to the known drought hazard.

County Multi-Jurisdictional Hazard Mitigation Plan

As for County-wide developed plans, the Santa Barbara County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP, 2023) comprehensively reviews hazards and vulnerabilities across Santa Barbara County and is updated every 5 years. Drought and water shortage is detailed as a cyclical 'natural and destructive hazard' for the County, further noting that these hazards lead to increased risk to natural hazards like wildfire, and significantly impacts agriculture which harms the economy as high yield/value crops have high water demands. Additionally, the MJHMP features a list of previous mitigation projects and prioritized mitigation actions (as of 2022) that address the identified hazards, which include drought and drought-related hazards. The MJHMP uses the STAPLEE[35] methodology to evaluate and prioritize mitigation actions. Such actions include developing the Drought Task Force (medium priority; ID number 2022-100) and building infrastructure for areas that may not have sufficient emergency backup water supplies (high priority; ID number 2022-102).

We conducted a review of the MJHMP and included relevant information in this Plan. It is important to note that the MJHMP is larger in scope in comparison to this Plan which focuses on drought for state small and small water systems and domestic well users. Additionally, the MJHMP is not a vulnerability analysis as it outlines at a high-level the hazards that affect the County. However, the vulnerabilities and hazards related to drought and water shortage in the MJHMP are consistent with information in this Plan.

The MJHMP notes that the Cuyama Valley, the City of Lompoc, and Los Alamos, Mission Hills, and Vandenberg Village communities are dependent on groundwater resources exclusively. The plan also notes the High and Medium priority SGMA basins, which are also provided in Section 1.1:

- Carpinteria Groundwater Basin
- Montecito Groundwater Basin
- Santa Ynez River Valley Groundwater Basin
- San Antonio Creek Valley Groundwater Basin
- Cuyama Valley Groundwater Basin

[35] https://toolkit.climate.gov/sites/default/files/PG_Resource_5.3_V2.pdf

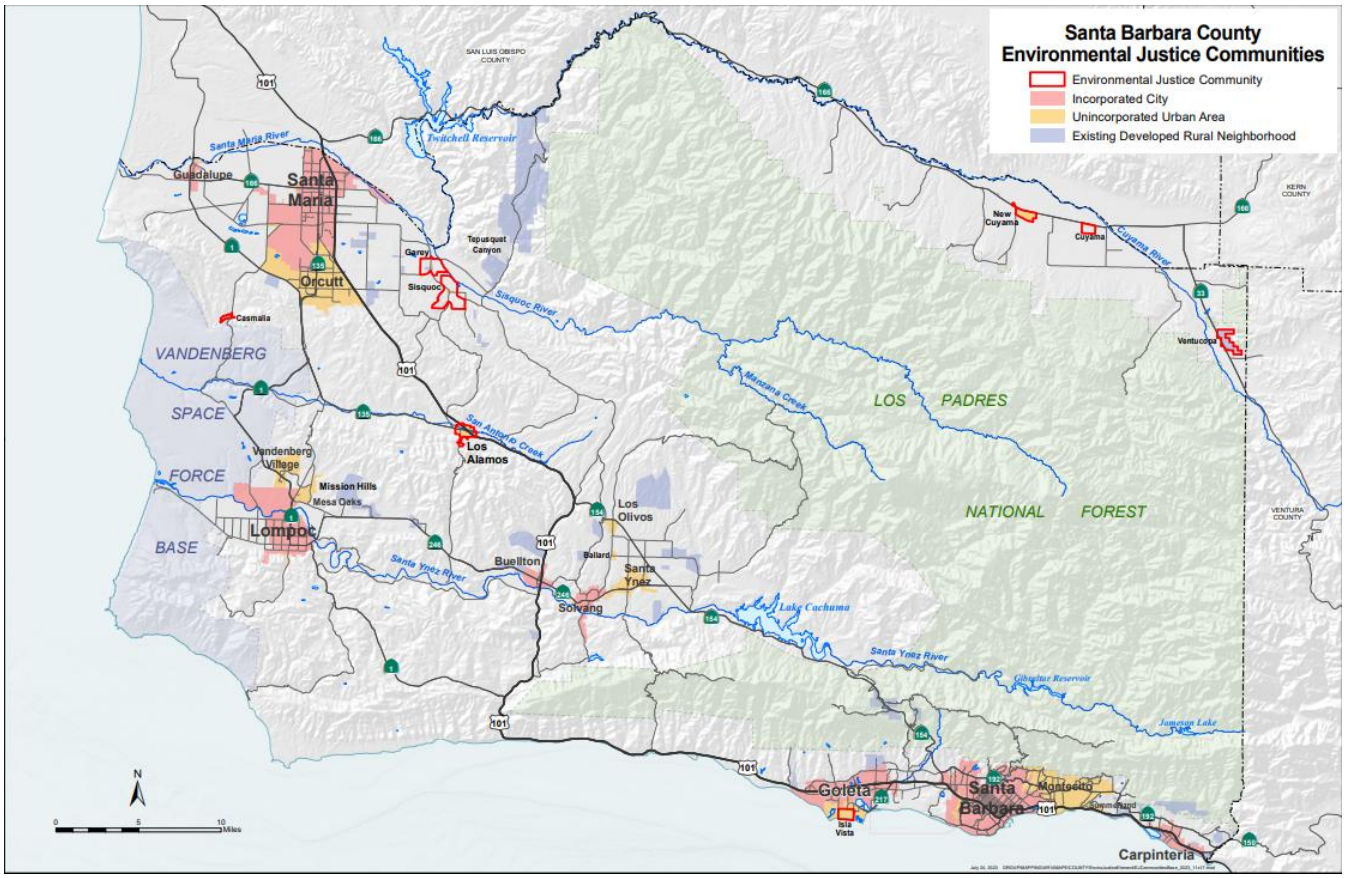
The MJHMP also presents a general mitigation plan focusing on four key elements: 1) communication, 2) use of existing procedures/regulations, 3) implement, and 4) monitor. This process is in alignment with the steps provided to address short- and long-term response needs.

County Climate Change Vulnerability Assessment

The Santa Barbara County Climate Change Vulnerability Assessment (2021) focuses on how climate change may impact the County and further identify specific communities and assets that would experience the greatest harm. The report suggests with the variability in precipitation extremes, drought periods may extend longer and occur more frequently. Under the most extreme climate projection scenario (RCP 8.5), the baseflows will decline significantly in the North County and South Coast subregions affecting much of where the County's population reside. As stated in this Plan, drought emerges because of the cascading effects from primary climate drivers such as increased air temperatures and changes in precipitation. It is essential to holistically consider drought emergence and its impacts as climate change continues to influence hydrometeorological processes.

County Environmental Justice Element

Included within the Santa Barbara Long-Range Planning Projects, the Environmental Justice Element focuses on the needs of environmental justice (EJ) communities. The purpose of the EJ Element project is to reduce risk, promote access to resources and engagement, and prioritize improvements and programs in the identified communities. There are eight identified communities across the County: Casmalia, Cuyama, New Cuyama, Ventucopa, Garey, Sisquoc, Los Alamos, and Isla Vista (red outline; Figure 6-1). As noted in this Plan, these communities tend to be more likely at risk of water shortage during drought because of the lack of or restricted access to resources. For example, in the Cuyama Valley area there is more geographic isolation making it harder for emergency resource delivery and relatively less water resources available than other parts of the County (e.g., existing wells and systems).



Data Source: Santa Barbara County, Environmental Justice Element.

Figure 6-1. Environmental justice communities in Santa Barbara County.

Table 6-1. A summary of plans or tools developed in response to hazards or water resources for the State of California, Santa Barbara County, or Groundwater Agencies and Districts.

Name of Plan or Tool	Resolution Extent
County Drought Resilience Plan Guidebook: Task Force Formulation, Plan Development, and Implementation Considerations for Implementing Senate Bill 552	State
California Adaptation Planning Guide (2020)[36]	State
State of California General Plan Guidelines (most recent 2017)[37]	State
State Hazard Mitigation Plan (2023 Update)[38]	State
Santa Barbara County Multi-Jurisdictional Hazard Mitigation Plan (2023)[39]	County & others
Santa Barbara County Emergency Management Plan (2013)[40]*	County
Santa Barbara County Comprehensive Plan - Safety Element (2015)[41]	County
County of Santa Barbara Climate Change Vulnerability Assessment (2021)[42]	County
Santa Barbara County 2030 Climate Action Plan (under development)[43]	County
County of Santa Barbara Water Supplier Drought Ordinances[44]	County
Santa Barbara County Integrated Regional Water Management Plan (2019 Update)[45]	County (IRWM Region)
Santa Barbara County Long-Range Planning[46] – Environmental Justice Element[47]	County
Santa Ynez Groundwater Basin, Western Management Area GSP (2022)[48]	GSA
Santa Ynez Groundwater Basin, Central Management Area GSP (2022)[49]	GSA
Santa Ynez Groundwater Basin, Eastern Management Area GSP (2022)[50]	GSA
San Antonio Creek Basin GSP (2022)	GSA
Cuyama Basin GSP (2020)	GSA
Goleta Groundwater Basin Groundwater Management Plan (2023)[51]	Groundwater District
Goleta Water District Water Supply Management Plan[52]	Groundwater District
Goleta Water District Drought Preparedness and Water Shortage Contingency Plan (2021)[53]	Groundwater District
Goleta Water District Infrastructure Improvement Plan 2020-2025 (2022)[54]	Groundwater District

*An update to the County Emergency Management Plan, titled the "Santa Barbara County and Operational Area Emergency Operations Plan" is in development and anticipated to be completed in CY2025.

[36] https://resilientca.org/apg/
[37] https://opr.ca.gov/planning/general-plan/guidelines.html
[38] https://www.caloes.ca.gov/wp-content/uploads/Hazard-Mitigation/Documents/2023-California-SHMP_Volume-1_11.10.2023.pdf
[39] https://content.civicplus.com/api/assets/ebc26205-512c-48d7-bca7-cfa0a18faa24
[40] https://www.cafsti.org/wp-content/uploads/OEM_EMP_Draft_09AUG13.pdf
[41] https://content.civicplus.com/api/assets/f0b97ebb-c2c6-4f92-afd0-e04bf738537d
[42] https://sbco.mysocialpinpoint.com/sbc-climate-adaptation/documents
[43] https://sbco.mysocialpinpoint.com/2030cap/
[44] https://www.countyofsb.org/2531/Current-Water-Supply-Status-Drought-Plan
[45] https://content.civicplus.com/api/assets/89d60832-8fd8-47ae-b7e8-787ad1253820
[46] https://www.countyofsb.org/499/Long-Range-Planning
[47] https://www.countyofsb.org/794/Environmental-Justice-Element
[48] https://www.santaynezwater.org/western-management-area-groundwater-sustainability-plan-4813f8c
[49] https://www.santaynezwater.org/central-management-area-groundwater-sustainability-plan-b1412d9
[50] h https://www.santaynezwater.org/ema-documents
[51] https://www.goletawater.com/assets/uploads/Goleta%20GWMP_2023-03-24.pdf
[52] https://www.goletawater.com/assets/uploads/documents/water_supply/Water_Supply_Management_Plan_Final_3-31-11.pdf
[53] https://www.goletawater.com/assets/uploads/GWD%20WSCP%20June%202021.pdf
[54] https://www.goletawater.com/assets/uploads/GWD_5yr_IIP_2022_Amended_March8_2022_FNL.pdf

7. Conclusion

As drought is a common occurrence across California, it is imperative to plan accordingly to prevent catastrophic impacts to water supply and ensure adequate drinking water supplies for all individuals. The Santa Barbara County Drought Resilience Plan was developed in response to SB 552 to proactively prepare the County in case of future dry year- or drought-related water shortage events. This Plan is intended to help the management of small water suppliers (domestic wells, state small water systems, and small water systems with less than 200 connections), as these supplies and the communities they serve are likely to be more vulnerable to water shortages during drought periods than larger water systems. In addition, communities that are vulnerable to physical or socioeconomic stressors may also experience and feel the impacts of water shortage more intensely.

This Plan contains information about the County's Drought and Water Shortage Task Force (Section 2); the physical and social vulnerabilities across the County and specification of certain areas that will be more vulnerable to water shortages (Section 3); the short-term (Section 4) and long-term (Section 5) mitigation strategies and needs; and implementation considerations regarding available funding and existing State and regional efforts (Section 6). Updates to this Plan should be incremental as newer data are available to provide the most accurate information. This Plan can be improved on with additional institutional knowledge from communities and staff members who have previously experienced water shortage events – updating and integrating "lessons learned" into management strategy.

A generalized summary of events is presented in Figure 7-1 to outline the proactive stages the County and community members can take in and out of drought conditions. Planning for prolonged dry periods should be a collaborative and dynamic process, and this Plan is a tool to help guide through each step of the process, from before to after a drought period, in preparation and recovery.

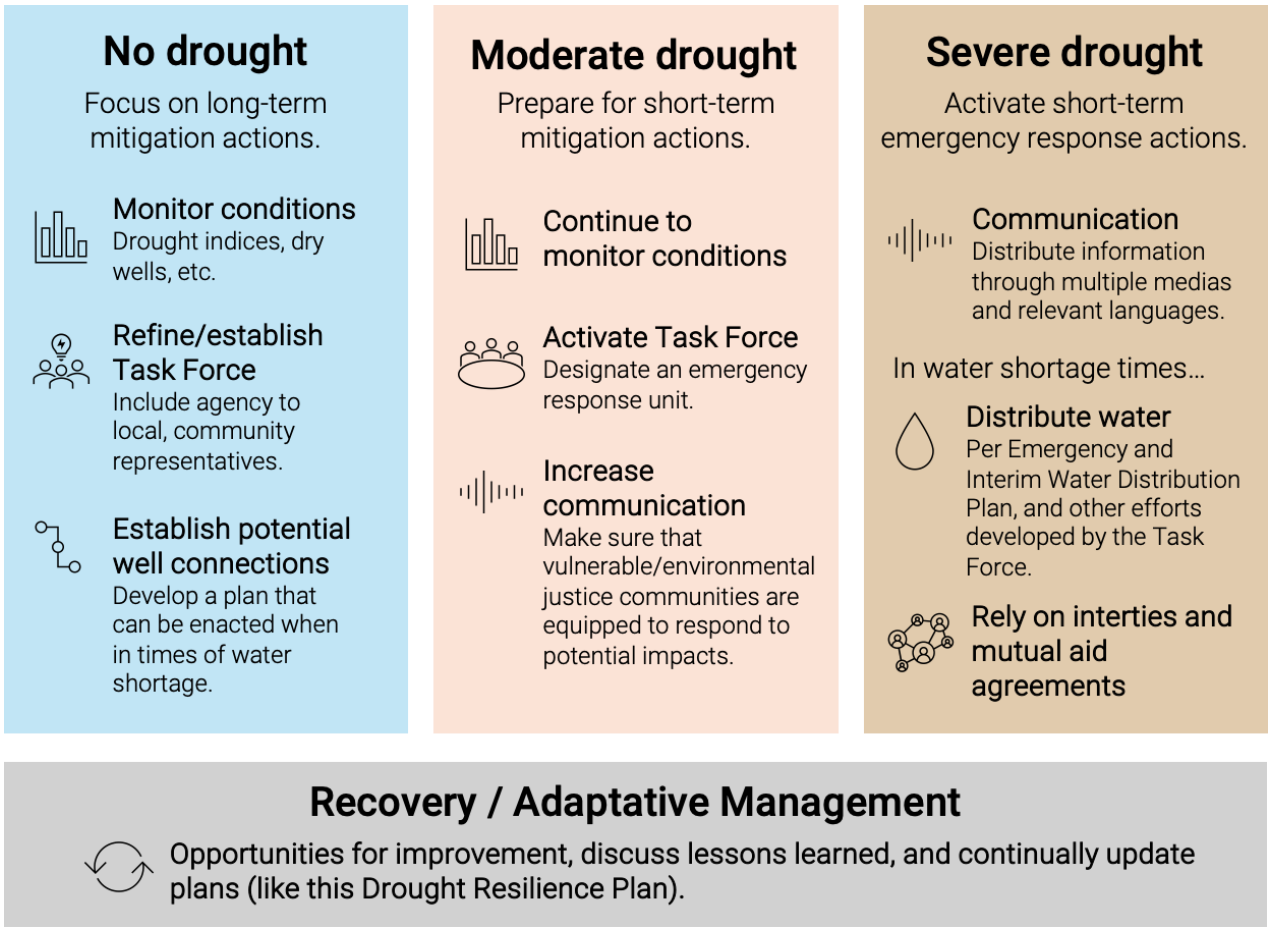


Figure 7-1. A summary of potential actions to take in the various stages of drought.

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Santa Barbara County Drought Resilience Plan

Appendix

County of Santa Barbara

June 2025

Submitted To:

Environmental Health Services
Attention: Lars Seifert
225 Camino del Remedio
Santa Barbara, CA 93110

Submitted By:

Lynker Corporation
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Boulder, Colorado **DC—Metro** **Pacific—Oahu**

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1. Community Engagement Meetings

Lynker held three public meetings to promote the County Drought Resilience Plan and receive public feedback on the risk assessment and short and long-term mitigation strategies. The meeting notes for each public meeting are provided in Sections 1.3 to 1.5.

1.1. Community Meeting Flyers

In preparation for the meetings, we posted flyers in English and Spanish to invite community members to share their ideas and join the discussion on the Drought Resilience Plan. The promotional flyers are on the next page (page 3).

Community Meetings
Santa Barbara County Drought Resilience Plan

Join us to learn about the Santa Barbara County Drought Resilience Plan, a new initiative in response to Senate Bill (SB) 552. This plan aims to enhance drought and water shortage preparedness for state small water systems and domestic wells within our county.

Meeting Schedule (July 2024)

We will hold three community meetings, across the county, for your convenience. Please find the meeting location and date that best suits your schedule.

Virtual attendance option for all meetings via zoom: https://zoom.us/j/97150858838

Monday July 15	**Cuyama**	**Cuyama Joint Unified School District campus** Cuyama Elementary board room 2300 CA-166, New Cuyama, CA 93254	**4PM to 5:30PM**
Tuesday July 16	**Santa Ynez Valley**	**Solvang City Hall, City Council Chambers** 1644 Oak Street, Solvang, CA 93463	**4PM to 5:30PM**
Thursday July 18	**South Coast**	**Carpinteria Public Library** 5141 Carpinteria Ave, Carpinteria, CA 93013	**3:30PM to 5PM**

Why Attend?

Stay Informed
Learn about potential updates in water resource planning across Santa Barbara.

Get Involved
Share your input on drought and water shortage preparedness.

Network
Connect with water professionals and community members.

Who Should Attend?

- General public interested in environmental issues.
- Water professionals concerned about local water resources.

We look forward to your participation!

For more information, submit public comments or questions please email jframe@lynker.com

Santa Barbara County PUBLIC Health DEPARTMENT

CALIFORNIA DEPARTMENT OF WATER RESOURCES

Juntas comunitarias plan de resistencia a la sequía del condado de Santa Bárbara

Únase a nosotros para aprender sobre el Plan de Resistencia a la Sequía del Condado de Santa Bárbara, una nueva iniciativa en respuesta al proyecto de ley del Senado (SB) 552. Este plan tiene como objetivo mejorar la sequía y la preparación para la escasez de agua para los pequeños sistemas de agua estatales y pozos domésticos dentro de nuestro condado.

Programa de reuniones (julio 2024)

Para su conveniencia, celebraremos tres reuniones comunitarias en todo el condado. Busque el lugar y la fecha que mejor se adapten a su horario.

Opción de asistencia virtual a todas las reuniones mediante zoom: https://zoom.us/j/97150858838

lunes julio 15	**Cuyama**	**Instalaciones Cuyama Joint Unified School District** Sala de juntas Cuyama Elementary 2300 CA-166, New Cuyama, CA 93254	**4PM to 5:30PM**
martes julio 16	**Valle de Santa Ynez**	**Cámaras del Ayuntamiento, Solvang City Hall** 1644 Oak Street, Solvang, CA 93463	**4PM to 5:30PM**
jueves julio 18	**Costa Sur**	**Biblioteca Pública Carpinteria** 5141 Carpinteria Ave, Carpinteria, CA 93013	**3:30PM to 5PM**

¿Por qué asistir?

Manténgase informado
Infórmese sobre las posibles actualizaciones de la planificación de los recursos del agua en Santa Bárbara.

Involúcrate
Comparta su opinión sobre la preparación ante la sequía y la escasez de agua.

Crea una red
Conéctese con profesionales del agua y miembros de la comunidad.

¿Quién debe asistir?

- El público en general interesado en los temas medioambientales.
- Profesionales del agua preocupados por los recursos de agua locales.

¡Esperamos su participación!

Para más información, comentarios o preguntas, envíe un correo electrónico a jframe@lynker.com

Santa Barbara County PUBLIC Health DEPARTMENT

CALIFORNIA DEPARTMENT OF WATER RESOURCES

1.2. Meeting Agenda

- Team introductions
- Project overview
    - SB552 background
    - State small and small water systems
    - Domestic wells
- Hazards and vulnerability
    - Physical vulnerability
    - Social vulnerability
    - Combined vulnerability
- Mitigation
    - Short-term response
    - Long-term solutions
- Questions & Answers

1.3. Stakeholder Meeting 1

Date: July 15, 2024

Location: Cuyama: Cuyama Joint Unified School District campus

Start time: 4:04 PDT

Notes

- Consider well depth as an important factor or aquifer depth
    - Can be both a social and physical vulnerability
- Comment from the audience:
    - Tools to look into water quality
    - Discussion about factors not necessarily related to drought but provide insight into hazards (e.g., flooding) or “compounding” events
    - Have you considered the valley? With the fault? ~ more geologic influence
        - What is a good aquifer here, disappears elsewhere
    - Perhaps more funding for the interim steps

1.4. Stakeholder Meeting 2

Date: July 16, 2024, 4 PM

Location: Santa Ynez Valley: Solvang City Hall

Start time: 4:04 PDT

Notes

- Include more landmarks on the map

- Domestic vs. agricultural wells?
- Make sure analysis encompasses all water systems (domestic, state small, and small)
- How does this project integrate with the GSAs?
    - Last part of this project is a crosswalk - not to contradict and to align
- Ability to *pay* for different mitigation measures = social vulnerability?
    - Particularly for smaller water systems
- Are we looking at preventative measures so we don't have to do emergency response?
- Look into LAFCOs
    - https://www.countyofsb.org/1813/Special-Districts---LAFCO
- Not included in the scope of DRP:
    - PFAS and perchlorate - water quality risk
    - Not about density of well, but activity of wells
    - Increased demand on existing systems? As a physical or social vulnerability?
    - Increased water infiltration? - mitigation measure
    - Need to consider source of water
    - Ability to discharge wastewater as a vulnerability
    - When looking at vulnerability… look at regional water infrastructure = consider land use and water use (land management), who has jurisdiction

1.5. Stakeholder Meeting 3

Date: Jul 18, 2024, 3:30 PM PDT

Location: Carpinteria: Carpinteria Public Library

Start time: 3:38p PT

Notes

- Is the 50 year mark appropriate? Yes - good indicator
- Most of the wells are probably active
- Is the type of governance considered as part of a vulnerability? - Not included in the scope of DRP
    - HOA vs MWC? OR transient vs non transient?
    - Smaller HOAs might not have the funds or managerial power
    - What are the local policies for the groundwater management?
    - E.g., if it's too small, might be hard to adapt?
- The ability to finance:
    - Can these groups of water systems even start the process because of the economic burden?
- Increased surface water storage from MWC in the form of water tank capacity?

2. Dataset Statistics

The physical vulnerability and social vulnerability datasets were retrieved from the California Department of Water Resources' Water Shortage Vulnerability tool. We provide summary statistics (median, mean, min, max, and standard deviation (SD)) for each vulnerability variable aggregated for PLSS units (physical) and block groups (social) in Santa Barbara County. These summary statistics reflect the format found in Table 7-9 of *Technical Methods for the Drought and Water Shortage Vulnerability Assessment Update 2023: California's Domestic Wells and State Small Water Systems*.

2.1. Physical Vulnerability Statistics

The following table displays the summary statistics for physical vulnerability variables. These are aggregated for PLSS units that are within Santa Barbara County. The 'Variable' column details which dataset column describes the physical vulnerability.

Table 2-1. Physical vulnerability summary statistics across Santa Barbara County.

Physical Vulnerability	Variable	Median	Mean	Min	Max	SD
Dom Well Count	DomWellCou	2.000	4.103	1.000	73.000	5.946
RC1a Temperature Change	RC1a Projected Heat Risk	2.457	2.428	1.959	2.808	0.203
RC1c Wildfire Projections	RC1c Wildfire Risk	0.366	0.369	0.143	0.636	0.085
rRC1b Sea Level Rise	rRC1b Projected Saltwater Intrusion in Coastal Groundwater	0.000	0.059	0.000	1.000	0.236
RC2a Current Dry Year	RC2a Current Year's Precipitation	1.000	0.767	0.000	1.000	0.423
RC2aa Multiple Dry Years	RC2aa Consecutive dry years	3.000	2.771	0.000	5.000	0.659
rRC2b CalFire *	rRC2b Wildfire Risk (CalFire HAZ_CODE)	0.670	0.483	0.000	1.000	0.464
rRC2c Fractured Rock Area	rRC2c Geology (Fracture Rock Area)	1.000	0.626	0.000	1.000	0.484
rRC2d Subsidence	rRC2d Subsidence	0.199	0.200	0.185	0.242	0.006
rRC2e Saltwater Intrusion	rRC2e Basin Salt (Saltwater intrusion)	0.000	0.059	0.000	1.000	0.235
rRC2f Critically Overdrafted	rRC2f Overdrafted Basin	0.000	0.076	0.000	1.000	0.265
rRC2g Groundwater Decline	rRC2g Chronic Declining Water Levels (2019-2022)	0.000	0.000	0.000	0.000	0.000
rRC2j Percent Farmed	rRC2j – Surrounding Land Use (Irrigated agriculture)	0.000	0.056	0.000	1.000	0.158
RC3a Basin Dry Well Susceptibility	RC3a Dry Domestic Well Susceptibility in basins	0.000	0.117	0.000	9.000	0.518
RC3c Fractured Rock Area – Dry Well Susceptibility	RC3c Domestic Well Density in fractured rock areas	0.000	0.734	0.000	61.000	2.740
rRC5A Household Water Outage	rRC5a Reported household outages on domestic well	0.000	0.000	0.000	1.000	0.018
Total Score	Total Score	30.531	33.673	8.345	87.257	10.200

* Wildfire risk for ONLY State Responsibility Areas (SRAs), excludes Federal Responsibility Area and Local Responsibility Area.

Table 2-2. Physical vulnerability categorical summary statistics for Santa Barbara County.

Physical Vulnerability	Category	PLSS counts
RC2b Wildfire Risk (CalFire HAZ_CODE) *	Low Hazard	1399
	Moderate Hazard	25
	High Hazard	444
	Very High Hazard	1152
RC2c Geology (Fracture Rock Area)	No	1130
	Yes	1890
RC2e Basin Salt (Saltwater intrusion)	No	2843
	Yes	177
RC2f Overdrafted Basin	No	2790
	Yes	230
RC2j – Surrounding Land Use (Irrigated agriculture)	None	2295
	Low	472
	Medium	135
	High	118
RC5a Reported household outages on domestic well	No	3019
	Yes	1

* Wildfire risk for ONLY State Responsibility Areas (SRAs), excludes Federal Responsibility Area and Local Responsibility Area.

2.2. Social Vulnerability Statistics

The following table displays the summary statistics for social vulnerability variables. These are aggregated for block groups that are within Santa Barbara County. The 'in i07 dataset' column notes if the following social vulnerability variable was available in the State's dataset (indicated as y = yes and n = no). The 'Variable' column details which dataset column describes the social vulnerability.

Table 2-3. Social vulnerability summary statistics in Santa Barbara County.

Social Vulnerability	in i07 dataset?	Variable	Median	Mean	Min	Max	SD
Median Household Income ($)	n	-	-	-	-	-	-
Per Capita Income ($)	y	PerCapitaIncome	40439.00	45883.18	2789.00	265772.00	30127.69
Percent 65 and older	y	Percent_65_and_Older	0.200	0.220	0.000	0.770	0.149
Percent 5 and younger	n	-	-	-	-	-	-
Percent No Vehicles	y	Percent_No_Vehicles	0.030	0.058	0.000	0.540	0.078
Percent Unemployed	y	Percent_Unemployed	0.050	0.061	0.000	0.670	0.068
Percent Language	y	Percent_Language	0.270	0.324	0.000	0.910	0.228
Percent Mobile Homes	y	Percent_Mobile_Homes	0.000	0.033	0.000	0.750	0.103
Percent High School Diploma or less	y	Percent_noHighSchool_Diploma	0.070	0.153	0.000	0.890	0.183
Percent Single Parent	y	Percent_SingleMother_Poverty	0.010	0.030	0.000	0.210	0.045
Social Vulnerability Index Score	y	Social_Vulnerability_Score	0.500	0.502	0.000	1.000	0.277

3. Data Sources and Methodologies

This section provides details for the datasets used in the development of the Santa Barbara County Drought Resilience Plan. Section 3.1 lists additional drought monitoring tools and Sections 3.2 to 3.5 cover physical, social, and geographical datasets. Most of the datasets under this section are publicly available and accessible via the website link.

3.1. Drought Indices

Helpful "ready-to-use" tools to display and monitor drought indices:

- Climate Toolbox
    - Climate Mapper: https://climatetoolbox.org/tool/climate-mapper
    - Gridded map output for variables covering climate, agriculture, fire danger, and drought impact areas. Provides past/real-time observations, forecasts (subseasonal to seasonal), and future projections through 2100. Data are averaged over a geographic location and calendar period specified by the user.
- Historical Climate tracker: https://climatetoolbox.org/tool/Historical-Climate-Tracker
    - Timeseries data for variables covering climate, agriculture, fire danger, energy, and drought impact areas. Can be aggregated by user-defined point/polygon area or US State, County, or Hydrologic Unit Code (more specifically, HUC8) boundaries.
- WestWide Drought Tracker: https://wrcc.dri.edu/wwdt/
    - Compiles drought indices and climate (temperature and precipitation) data for the United States. The platform delivers current maps for each climate and drought index for a region (https://wrcc.dri.edu/wwdt/index.php) and user-defined time series outputs (https://wrcc.dri.edu/wwdt/time/) at state, county, and watershed scales.

3.2. Water Resources

This Plan relies on public data sources provided primarily by California State departments, namely the Department of Water Resources and the State Water Resources Control Board. These data include:

Table 3-1. Data sources related to water resources, primarily from California State departments.

Dataset/Tool	Type	Source/Provider	Description*	Link
Water Shortage Vulnerability (State Smalls and Domestic Wells Analysis)	Dashboard	California Department of Water Resources	▪ Developed in response to SB 552 ▪ Displays County level information about state smalls and domestic wells, the calculated vulnerability score and index ▪ Additional layers include climate change projections and current conditions	https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=b20d1b8b751c42f9a067a915544e512c&extent=-13960048.223%2C4383164.2643%2C-13040357.8986%2C4846678.4038%2C102100
Groundwater Ambient Monitoring and Assessment (GAMA) Program: Groundwater Information System	Dashboard	California State Water Resources Control Board	▪ California's comprehensive groundwater quality monitoring program. ▪ Integrates and displays water quality data from various sources.	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/

Dataset/Tool	Type	Source/Provider	Description*	Link
Aquifer Risk Map: Domestic Wells and State Small Water Systems	Dashboard	California State Water Resources Control Board	▪ Raw source groundwater quality risk per square mile section. ▪ Help prioritize areas where domestic wells and state small water systems may be accessing raw source groundwater that does not meet safe drinking water standards.	https://gispublic.waterboards.ca.gov/portal/apps/experiencebuilder/experience/?id=18c7d253f0a44fd2a5c7bcfb42cc158d
SGMA Groundwater Viewer	Dashboard	California Department of Water Resources	▪ Access to groundwater related datasets that are organized by the requirements of SGMA and the Groundwater Sustainability Plan (GSP) regulations. ▪ Data include current conditions, groundwater levels and storage, water quality, land subsidence, interconnected surface water, water budget, and basin characterization.	https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels
SAFER Dashboard	Dashboard	California State Water Resources Control Board	Statuses of water systems are based on the results of the Risk Assessment, which is refreshed quarterly as new data becomes available.	https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/saferdashboard.html
California Water Partnerships	Dashboard	California State Water Resources Control Board	Contains completed water system consolidations and other water system partnership activities.	https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=fabf64fbe50343219a5d34765eb7daad
California WATER WATCH	Dashboard	California Department of Water Resources	▪ Most current local and statewide water conditions. ▪ Compiles information on hydroclimate and water supply conditions.	https://cww.water.ca.gov/

* Data description is from the respective dataset's metadata.

3.3. Vulnerability

Table 3-2. Data sources related to physical and social vulnerability.

Dataset/Tool	Type	Source/Provider	Notes	Link
Social Vulnerability				
i07 Water Shortage Social Vulnerability BlockGroup	Dataset	California Department of Water Resources		https://gis.data.cnra.ca.gov/datasets/f010e3d265ec44679459a48ef9e59745_0
Social Vulnerability Index	Dataset/ Dashboard	Cottage Health and Measure of America of the Social Science Research Council		https://cottagedata2go.org/map
Healthy Places Index (HPI)	Dataset/ Dashboard	Public Health Alliance of Southern California		https://www.healthyplacesindex.org/
California Public Safety Power Shutoff Interactive Map	Dashboard	Physicians, Scientists, and Engineers for Healthy Energy (PSE)		https://www.psehealthyenergy.org/work/california-public-safety-power-shutoff-interactive-map/
Physical Vulnerability				
i07 Water Shortage Vulnerability Sections	Dataset	California Department of Water Resources		https://gis.data.cnra.ca.gov/datasets/d539f06a037f4365b1535fbef6634f27_0
Disadvantaged Communities				
SB 535 Disadvantaged Communities	Dataset/ Dashboard	California Office of Environmental Health Hazard Assessment	2022 update	https://oehha.ca.gov/calenviroscreen/sb535

3.4. Water System

Boundaries

Table 3-3. Data sources to define well locations and water system boundaries.

Water System	Dataset	Source/Provider	Link (if applicable)
Domestic Wells	i07 WellCompletionReports ("B118WellUse" = 'Domestic')	California Department of Water Resources	https://gis.data.ca.gov/maps/7194b8f69ddc4c73a04a417905b8c0b1/about
State Small Water Systems	State Small Water Systems 2022 (DDW)	California State Water Resources Control Board	https://gis.data.ca.gov/datasets/waterboards::state-small-water-systems-2022-ddw/about
Small Water Systems	California Drinking Water System Area Boundaries	Division of Drinking Water of the California Water Resources Control Board (SWRCB DDW)	https://gispublic.waterboards.ca.gov/portal/home/item.html?id=fbba842bf134497c9d611ad506ec48cc#overview
	Small Water Systems	Communications with the County Public Health Department	N/A

Ages

Table 3-4. Data sources to provide information about well/system age.

Water System	Dataset	Source/Provider	Link (if applicable)
Domestic Wells	i07 WellCompletionReports ("B118WellUse" = 'Domestic') – Date Work Ended	California Department of Water Resources	https://gis.data.ca.gov/maps/7194b8f69ddc4c73a04a417905b8c0b1/about
State Small Water Systems	N/A	Communications with the County Public Health Department	N/A
Small Water Systems	N/A	Communications with the County Public Health Department	N/A

3.5. Other Helpful Data

Table 3-5. Information on Special Districts in Santa Barbara County.

Dataset	Type	Source/Provider	Link
Special Districts Information System (LAFCO)	Dashboard	Santa Barbara County	https://apps.simplelayers.com/public/viewer/1386
	Datasets (shapefiles and PDFs)		https://www.countyofsb.org/1813/Special-Districts---LAFCO

3.6. Physical Vulnerability (PV) Total Score

Physical vulnerabilities were calculated by CA DWR using 16 separate datasets, listed in Table 3-6. These datasets can be further grouped into climate change projections, current conditions, well infrastructure, and

observed outages. The data are spatially grouped into Public Land Survey Sections, which are one square-mile grids determined across the United States.

The total physical vulnerability index (PV) score is calculated from 1-100, with a higher score meaning communities within those sections are more vulnerable to physical hazards. This analysis was completed across the State of California to evaluate the risks to communities with water suppliers with less than 15 service connections, therefore, this analysis does not account for small water system infrastructure. Additionally, this analysis only includes State Responsibility Areas to evaluate wildfire risk, therefore federally or locally responsible forested areas are considered with a NULL wildfire risk, which dampens the total physical vulnerability score in those areas (Figure 3-2).

Some metrics, however, do not accurately represent vulnerabilities within Santa Barbara as they were analyzed in a state-wide reference. For example, “Dry Domestic Well Susceptibility” variable is calculated as percentiles across the State (Figure 3-1), so the results are relative to the State.

Table 3-6. Physical variables that computed the total physical vulnerability score across the State of California.

Weight	Physical Vulnerability Variables
1	Projected Heat Risk
1	Projected Saltwater Intrusion in Coastal Groundwater
1	Wildfire Risk
2	Current Year’s Precipitation
2	Consecutive dry years
3	Groundwater Water Quality Risk (SWRCB)
3	Wildfire Risk (CalFire HAZ_CODE): O*nly includes State Responsibility Areas*
3	Geology (Fracture Rock Area)**
2	Subsidence^
3	Basin Salt (Saltwater intrusion)
2	Over-drafted Basin^
3	Chronic Declining Water Levels (2019-2022)^
3	Surrounding Land Use (Irrigated agriculture)
5	Domestic Well Density in fractured rock areas**
5	Dry Domestic Well Susceptibility in basins^
5	Reported household outages on domestic well
** = included only in fracture rock areas ^ = included only for alluvial basins	

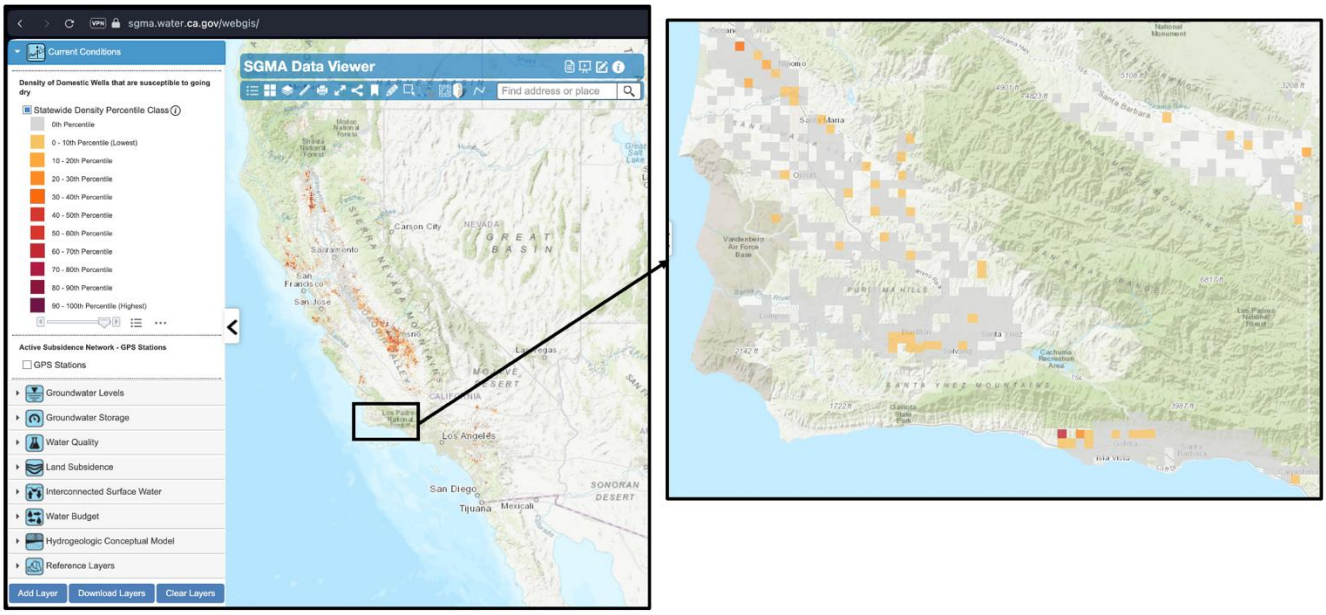

Figure 3-1. Potential bias in the State tool due to analyses on a State-wide reference.

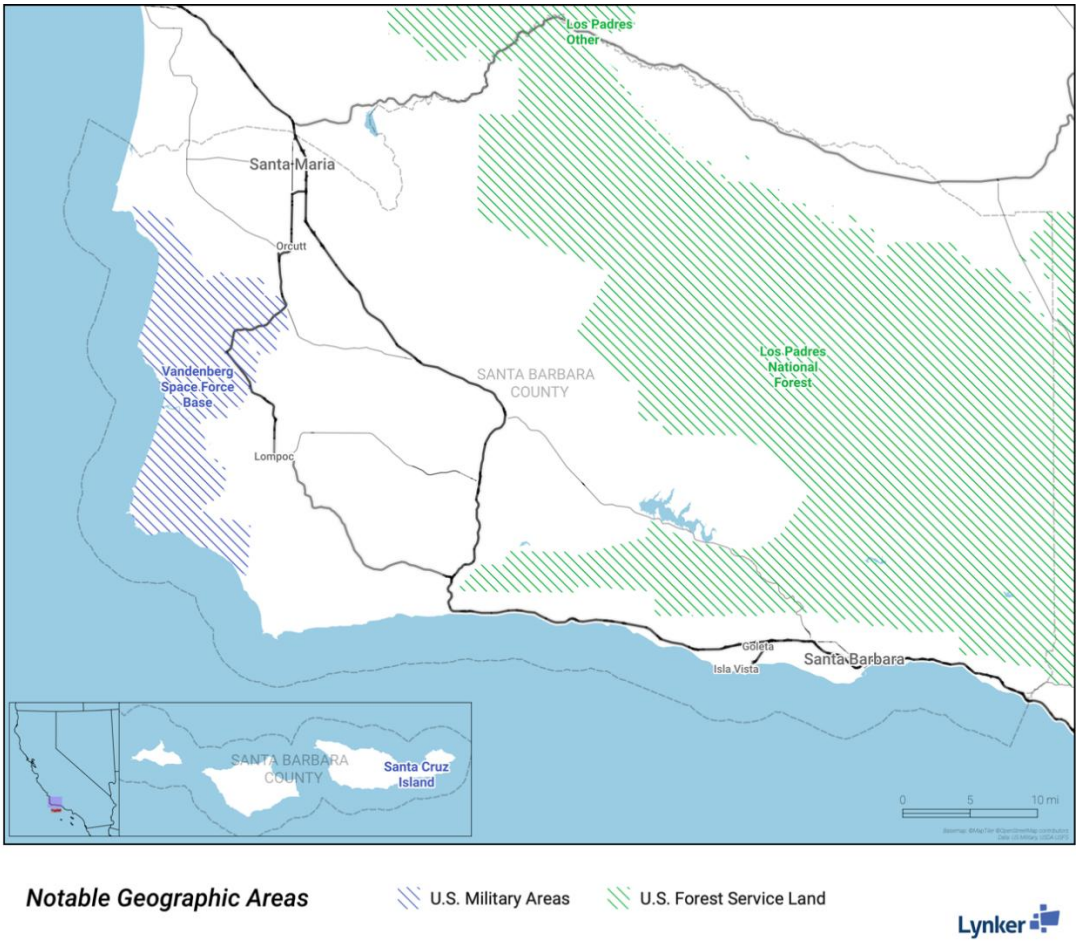

Figure 3-2. Areas not included in the State analysis for certain factors that lead to vulnerabilities.

3.7. Social Vulnerability Index (SVI)

Social vulnerabilities were calculated by CA DWR using 11 variables mostly sourced from the ACS (American Communities Survey), listed in Table 3-7. The data are spatially grouped into 2020 Census block groups. These variables are intended to represent social and economic factors that can influence water shortage vulnerability.

The total social vulnerability index (SVI) score is calculated from 1-100, with a higher score meaning communities within those sections are more vulnerable to socioeconomic factors. Similar to the PV analysis, the SVI was computed across the State of California, but the values used to calculate a block group's SVI is not ranked based. However, there are limitations to the dataset as block groups can be large based on the low density of households in an area, so it may be difficult to understand the socioeconomic pressures on a community level for some areas, for example in the Cuyama region.

Table 3-7. Socioeconomic variables that computed the total social vulnerability index across the State of California. All of these variables are equally weighted, according to the CA DWR methods.

Social Vulnerability Variables
Median Household Income ($)
Per Capita Income ($)
Percent population living in poverty
Percent 65 and older
Percent 5 and younger
No vehicle available
Percent Unemployed
Percent of population who speak English less than well
Percent Mobile Homes
Percent with no High School Diploma
Percent Single Parent

4. Groundwater Sustainability Plan (GSP) Summaries

A summary of the groundwater sustainability plans (GSPs) within Santa Barbara County have been provided in the table below. Santa Maria Valley, Santa Barbara, Foothill, and Goleta Groundwater Basins do not have published GSPs.

Table 4-1: Summary of Groundwater Sustainability Plans

Groundwater Basin*	SGMA Basin prioritization	Summary[1]	Historical Annual Storage changes (Baseline Change in storage)	Projected Annual Storage changes	Link to GSP
Carpinteria	High	Water levels reached near historic minimums during the recent drought of 2012-2018, followed by continued increases in storage after above-average precipitation in 2017 and 2019. Data from 2023 indicate rising water levels throughout the Basin.	-1,229 AF (WY 1985–2020)	50-year projected annual change in storage: -208AF (cumulative depletion of 10,388AF) (WYs 2024-2073)	https://carpgsa.org/public-info/groundwater-sustainability-plan/
Cuyama Valley	High (critically overdrafted)	Shallow wells indicate that water levels have historically remained stable. They continue to remain stable in the western portion of this region. However, deep wells along the river to the east have experienced continued declines as with drought and agricultural development since 2016. Water level data from 2023 measurements indicate an increase in levels.	-23,000 AF (1998-2017)	-25,000 AF (1968-2017 Central Tendency climate scenario data)	https://cuyamabasin.org/assets/pdf/resubmitted-gsp/Cuyama-Final-GSP-Main-Report-July-2022.pdf
San Antonio Creek Valley	Medium	Water levels have declined throughout the basin since the 1950s, with more rapid declines starting in about 2000. Recent water levels generally indicate increases in shallow wells and decreases in deeper wells. Water level declines were observed primarily in the Careaga Formation (western basin) and north of Los Alamos.	-10,600 AF (WY 1981–2018)	-15,300 AF (2042) -16,200 AF (2072)	https://sanantoniobasingsa.org/wp-content/uploads/SACVB_2022-Annual-Report_FINAL-03-17-23.pdf
Montecito	Medium	Recent water level trends starting in 2019 indicate stability or continued increases in storage following above-average precipitation in 2017 and 2019. Data from	-131 AF (1970-2014)	+35 AFY (2020-2069)	https://montecitogsa.com/doc/7530/

[1] https://content.civicplus.com/api/assets/6a3f61bf-d202-4e9b-b281-57c6c18731be

Groundwater Basin*	SGMA Basin prioritization	Summary[1]	Historical Annual Storage changes (Baseline Change in storage)	Projected Annual Storage changes	Link to GSP
		2023 indicate rising water levels throughout the Basin.			
Santa Ynez River Valley (Western Management Area)	Medium	Water levels within the Lompoc Uplands have declined since records have been available starting in 1930. Water levels within the alluvium along the river have historically remained stable. Recent water levels indicate declines in the Lompoc Uplands and Santa Rita Uplands. However, levels have increased in the Lompoc Terrace and Plain.	-1,000 AF (1982-2018)	-2,355 AF (2042) -3,145 AF (2072)	https://www.santaynezwater.org/western-management-area-groundwater-sustainability-plan-4813f8c
Santa Ynez River Valley (Central Management Area)	Medium	Water levels within the central management area have historically been relatively stable, with minimal long-term declines. Levels had rebounded following the 2012-2018 drought. Water levels within the alluvium along the river have historically remained stable. Water level data from 2023 indicate an increase throughout the Management Area.	0 AF (1982-2018)	-395 AF (2042) -627 AF (2072)	https://www.santaynezwater.org/central-management-area-groundwater-sustainability-plan-b1412d9
Santa Ynez River Valley (Eastern Management Area)	Medium	Water levels in the eastern management area have declined in recent years. Water levels within the alluvium along the river have historically remained stable. Water levels have recently indicated decreases south of Los Olivos and within the center of the Basin. However, water levels in other portions of the Basin have shown improvement in both the Paso Robles and Careaga Formations.	-1,830 AF (1982-2018)	-2,060 (2042) -2,270 (2072)	https://www.santaynezwater.org/eastern-management-area-groundwater-sustainability-plan-2df1d8b

5. Water Consolidation Case Study

In Section 5.2 (Consolidation plan) in the Santa Barbara County Drought Resilience Plan, Bonita Elementary School is used as an example of a successful Water System Consolidation case. The physical consolidation efforts resulted in the construction of new pipelines to ensure a permanent solution for clean drinking water. More information on the Bonita School Drinking Water Improvements Project is available on the California Environmental Quality Act (CEQA) Web Portal[2] and from the Santa Maria Times[3] and Santa Maria Sun[4].

[2] https://ceqanet.lci.ca.gov/2024010761/2
[3] https://santamariatimes.com/news/local/education/bonita-elementary-drinking-water-project-moving-forward/article_4ae4a54b-88f9-50f5-abce-643399f87f11.html
[4] https://www.santamariasun.com/news/santa-maria-goes-to-lafco-to-provide-clean-drinking-water-to-bonita-elementary-15728998

Water Consolidation Case Study
Bonita Elementary School

In the City of Santa Maria, within the Bonita School District, Bonita Elementary is located outside the city in an agriculture dense area. They rely on domestic well water that has shown high concentrations of Nitrates in the drinking water.

To **temporarily** address the issue, they have begun treating the water as well as providing water bottles to students and staff. However, a more **permanent** solution was needed, so the school district proposed to connect to the city's water supply. The following list summarizes the steps and considerations to implement this consolidation plan.

PLANNING

Feasibility study

The school district conducted a feasibility study in 2021, which determined the best solution to be connecting to the city's water system.

Out-of-agency service agreement

Once the city was contacted, they must process an out-of-agency service agreement with the Local Agency Formation Commission (LAFCO).

An authorization of out-of-agency service agreement was completed in December 2024.

Funding

The district is responsible for funding the project.

The district has sought grants through the Drinking Water State Revolving Funds with the Water Resources Control Board.

IMPLEMENTATION

Construction

The district is working with Rincon Consultants on the construction project, which includes 8,100 linear feet of pipeline.

Construction to take place between January 2025 and January 2026.

Schedule

Environmental Health Services will work with the city and the district to ensure timely proceedings.

Source: Reference article from the *Santa Maria Sun*.

6. CalWARN Member Agencies for Santa Barbara County

The table below lists the CalWARN member agencies for Santa Barbara County. These data were collected from the CalWARN website's Public Members Map[5].

Table 6-1. Information about CalWARN member agencies in Santa Barbara County.

Organization Name	Org. Type	Website
Guadalupe, City of		http://ci.guadalupe.ca.us/
Vandenberg Village CSD	Water / Wastewater	http://www.vvcsd.org
Golden State Water Company- Coastal District Office/Santa Marina CSA		
Mission Hills Community Services District	Water / Wastewater	http://www.mhcsd.org/
Santa Maria, City of Utilities Department		https://www.cityofsantamaria.org/residents/utilities-city-sewer-water-trash
Santa Maria, City of		https://www.cityofsantamaria.org/
Lompoc, City of		http://www.cityoflompoc.com/
Central Coast Water Authority		http://www.ccwa.com/
Santa Ynez River Water Conservation District, ID No.1		https://www.syrwd.org
Goleta Sanitary District		http://www.goletasanitary.org/
Cachuma Operation and Maintenance Board		http://www.cachuma-board.org/
Goleta Water District		http://www.goletawater.com/
La Cumbre Mutual Water Company		http://lacumbrewater.com/
Santa Barbara, City of		https://www.santabarbaraca.gov/
Montecito Water District		
Carpinteria Valley Water District		http://www.cvwd.net/
Carpinteria Sanitation District		http://carpsan.com/

[5] https://www.google.com/maps/d/viewer?mid=1b3-L9sXlJqNftkzLIaDcQkKyqmn4ly3B&femb=1&ll=34.798787316235895%2C-119.8708155880973&z=10