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Roles & Responsibilities for Managing Risk of Water Shortage and Quality Surrounding Domestic Wells and State Small Water Systems

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INTRODUCTION

Roles and responsibilities have been unclear surrounding the risk management for drought impacts and water quality pressures for **domestic wells** and **state small water systems** (SSWS) in California. Without clarity, misconceptions of responsibilities create challenges that can ultimately burden households reliant on well water. Foremost, this primer recognizes that private drinking water wells are on private property for the individual (or small set of) households; yet the broader context in which the wells exist affects the availability and quality of their drinking water. The primers are presented by components of the framework below, which combine the well lifecycle phases, risk management cycle categories, and the greater environmental-social system of the wells.

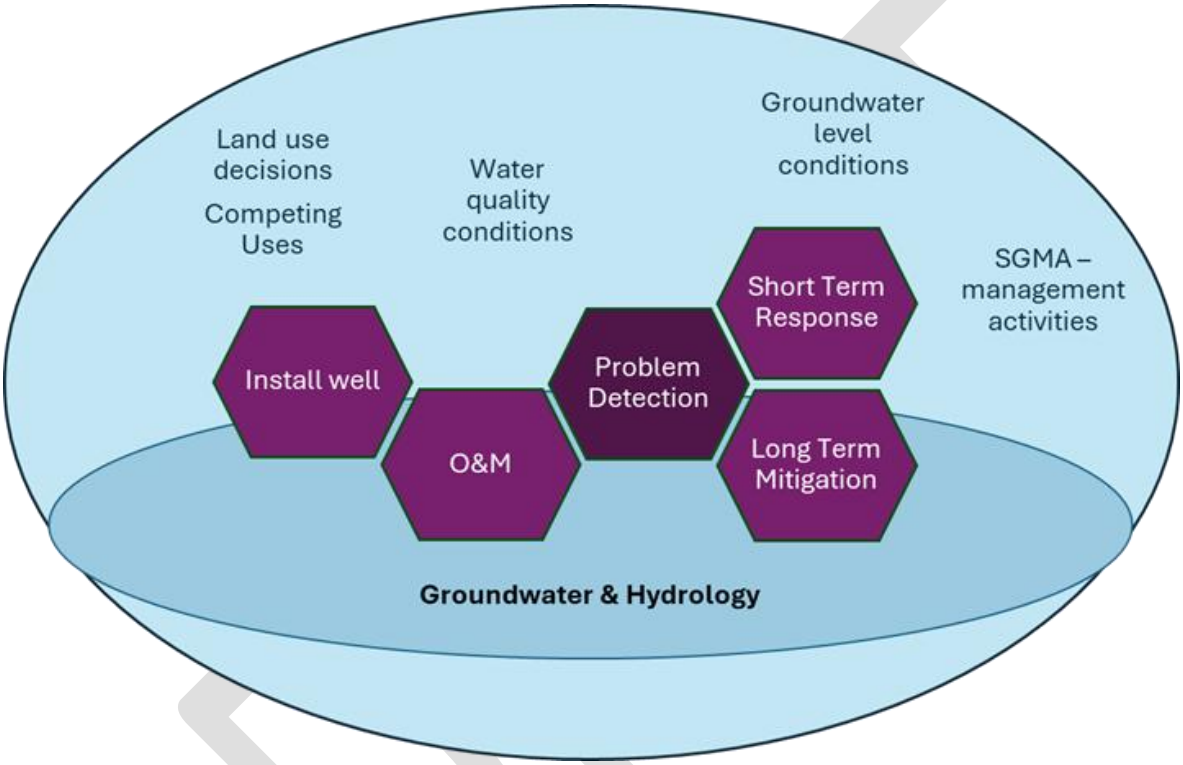

Figure 1. Conceptual framework for exploring roles and responsibilities of domestic wells and state small water systems. The hexagons represent key phases in the well lifecycle (install, operations and maintenance, problem detection, and response/mitigation) and the surrounding circles depict external drivers and considerations (e.g., land use, water quality, and management activities) that influence these phases. The underlying oval represents the broader groundwater system and environmental context within which wells operate.

Lifecycle Phase

INSTALL WELL

OVERVIEW

Domestic wells in California are initiated and operated under a layered legal system where the property owner bears primary responsibility for permitting, maintenance, water quality testing, and eventual abandonment. Similarly for **state small water systems** where the system operator plays an important role. A licensed C-57 driller constructs the well to state standards and files required completion reports, while the county agency (usually environmental health) serves as the frontline permitting and inspection authority. County ordinances and state law, anchored by the Water Code (§13750 et seq.) and overseen through the SWRCB and DWR establish the broader framework within which all well activity must occur. SSWS slightly differ from domestic wells as they require additional permitting by and reporting requirements to the county.

BY ENTITY

Property Owner / Occupant (Domestic Well) and Operator (SSWS)

- The property/system owner applies for and holds the permit, bears ongoing responsibility for the well's maintenance and water quality testing, and is legally responsible for properly abandoning the well when it is no longer in service.

Licensed Driller (C-57)

- Contractor must hold a California Contractors State License Board C-57 (Water Well Drilling) license, follow all state construction standards, and file a Well Completion Report (DWR Form 188) with DWR after finishing the work.

Local Agency (Typically County Environmental Health)

- The county environmental health department is the primary permitting authority in most counties.
- Issues well permit ahead of drilling, inspects the proposed site, reviews the completion report after drilling, and typically require water quality testing before the well can be used for drinking.
- Can add stricter rules above state minimums through local ordinances. Also manage zoning and land use, which can restrict where a well can legally be sited, and may impose additional fees or review steps.

GSA

- May have additional rules for the well permitting in its Groundwater Sustainability Plan, including for de minimus users.

Department of Water Resources

- The Department of Water Resources (DWR) publishes well construction standards (Bulletin 74-90)

State Water Resources Control Board

- Sets DWR well construction standards as regulations, enforcement for which is delegated to the county local agency

Lifecycle Phase

OPERATE & MAINTAIN

O&M

OVERVIEW

Domestic well owners bear sole responsibility for maintaining their system with no required schedule, no routine oversight, and no guaranteed access to financial assistance, making maintenance quality entirely dependent on individual initiative and resources. Licensed contractors are the only other party with a direct hands-on role, while state agencies, GSAs, and CBOs contribute technical assistance, funding, and education.

Relative to domestic wells, **state small water system operators** face more structured obligations, with county-mandated monitoring, recordkeeping, and inspections providing a baseline of accountability. Some state small systems have a separate operator than owner of the system. The operator has a permit issued by the local health officer (often county environmental health). As part of the permit, the operator must prepare a technical report with information about the service area, distribution system, source of water, storage and pumping, quality and treatment. Additionally, the report describes who is responsible for running the system, including an emergency notification plan. The owner and operator are responsible for water quality testing.

The core distinction between the operation and maintenance (O&M) for a domestic well vs a state small water system is that a domestic well owner is accountable only to themselves (and to tenants under AB 2454 (2024)), while a state small water system operator is accountable to the local health officer and county, with documented, reportable obligations (note these requirements are lighter than for community water systems).

BY ENTITY

Property Owner (Domestic Well)

- Solely responsible for day-to-day operation and maintenance of the well, pump, and pressure system
- Must keep the wellhead secure, casing intact, and well cap sealed to prevent surface contamination
- Responsible for scheduling and funding water quality testing, pump inspections, and repairs
- No required maintenance schedule, frequency and thoroughness depend entirely on owner initiative and resources
- Responsible for properly abandoning the well at end of useful life

Operator (State Small Water System)

- Responsible for day-to-day operation under the terms of the county operating permit
- Maintains all system components, well, pump, pressure tank, distribution lines, and treatment equipment
- Must follow county monitoring schedules, maintain operational records, and report results to the local health officer
- Must implement and maintain an emergency response plan for system component failures

Licensed Driller / Pump Contractor (C-57 / C-61 / D-21)

- Performs well inspections, pump servicing, casing repairs, and equipment replacement
- Advises owners/operators on maintenance needs and system performance
- Required for any physical modifications to the well or pump system
- Files required documentation for any well construction, modification, or destruction

Local Agency (Typically County Environmental Health)

- **Domestic wells:** Engagement is limited to complaint-driven response or permit modification requests
- **SSWS:** conducts periodic inspections to verify permit compliance and can issue corrective orders if deficiencies are found
- Reviews and approves any modifications to permitted systems

Groundwater Sustainability Agency (GSA)

- No direct role in individual well or system operations and maintenance
- Basin-level groundwater monitoring informs whether existing wells are at risk of declining yield and can identify areas where future well development may be unsustainable due to declining groundwater levels
- Some GSAs with mitigation plans may provide technical or financial assistance for well maintenance in vulnerable areas

Department of Water Resources (DWR)

- No direct role in individual well or system operations and maintenance
- Maintains statewide well completion report database informing understanding of well construction and locations
- Drought vulnerability tools help local planners identify wells most at risk of operational failure

State Water Resources Control Board (SWRCB)

- **Domestic wells:** No direct role in day-to-day O&M. Funds local water quality programs supporting ongoing monitoring of domestic well water quality
- **SSWS:** Sets regulatory standards that county operating permits must reflect. Can provide technical assistance and funding for treatment system installation in disadvantaged communities

Community Based Organizations (CBOs) and Nongovernmental Organizations (NGOs)

- Educate well owners on proper maintenance practices and warning signs of system failure
- Connect low-income owners to funding or technical assistance for maintenance and repairs
- Advocate for expanded public support for well maintenance programs in underserved communities

Lifecycle Phase

PROBLEM DETECTION

OVERVIEW

Detecting problems early, whether a declining water table, a failed pump, or a newly emerging contaminant, is the difference between a manageable maintenance issue and a full-blown water supply emergency. For **domestic wells**, detection depends almost entirely on the owner or occupant noticing something is wrong, because there is no required monitoring and no external oversight, with the exception of AB 2454 (2024). **State small water systems** have mandatory monitoring for certain contaminants, but detection of supply problems and many water quality issues still depends on the operator's attention and resources. Drought makes detection more urgent and more difficult: it accelerates groundwater depletion, concentrates naturally occurring contaminants like arsenic, and can shift the chemistry of a well that tested fine for years. Regional early warning for both comes from the State Water Board, Department of Water Resources, and Groundwater Sustainability Agencies, which track basin-wide water quality and declining groundwater levels. However, this data usually informs agency response rather than reaching individual owners and operators directly.

BY ENTITY

Property Owner / Occupant (Domestic Well)

- First line of detection in nearly all cases
- No required monitoring, so detection is often reactive (well runs dry or water quality changes noticeably)
- Responsible for initiating testing if contamination is suspected
- Under AB 2454 (2024), rental property owners must participate in testing programs if located in area identified by SWRCB as at risk for unsafe drinking water

Operator (SSWS)

- Has a greater detection obligation due to county-required monitoring schedules
- Must track water quality results and report exceedances to SWRCB (clarify*)
- More likely to detect slow-developing contamination proactively versus a domestic well owner

CBOs and NGOs

- Where present, can serve as a first point of contact for residents who don't know who to call or distrust government agencies
- Can act as an informal detection network, identifying patterns of dry wells or water quality complaints before they reach agencies
- Connect residents to free or subsidized testing programs they may be unaware of
- Bridge language and cultural barriers that cause problems to go unreported
- Aggregate community-level complaints, creating early warning signals that can prompt agency attention
- Escalate issues to county or state agencies on behalf of residents who lack capacity to self-report

Local Agency (Typically County Environmental Health)

- Receives reports from owners/operators
- May conduct inspections that reveal problems
- Maintains records that can reveal patterns across a region
- **SSWS:** Can mandate additional monitoring if water quality risk is suspected

Groundwater Sustainability Agencies (GSAs)

- Under SGMA, monitor basin-wide groundwater levels and track "undesirable results" for beneficial users including chronic lowering of groundwater levels
- Declining levels detected by GSAs can be an early warning signal for domestic well/SSWS failures before individual owners/operators notice
- Do not necessarily interact directly with individual owners/operators but their data informs county and state response

State Water Resources Control Board – GAMA Program

- Monitors regional groundwater quality trends
- SWRCB's GeoTracker GAMA GIS portal aggregates water quality data from domestic well monitoring programs and state small system reporting
- Can flag areas with known contamination plumes or drought-stressed basins, including as part of the Aquifers at Risk Map for the SAFER Needs Assessment.
- Provides data that may prompt county-level action

Department of Water Resources (DWR)

- No required monitoring of domestic wells or SSWS
- DWR's groundwater level monitoring network provide statewide data for detecting basin-scale supply problems (CA Statewide Groundwater Elevation Monitoring (CASGEM) Program).
- Community Groundwater Level Monitoring Program (pilot) offers training, support, and equipment to domestic well owners and state small operators to track groundwater levels over time.
- Tracks statewide drought conditions and groundwater basin health, including an annual assessment estimating basin levels in relation to domestic well depths
- Hosts Dry Well Reporting website and dataset; receives and hosts public database on voluntarily reported dry wells, which can inform drought declarations that can then trigger county or state assistance programs; offers county and GSA login to access full set of local reports.

Lifecycle Phase

SHORT TERM INTERIM RESPONSE

OVERVIEW

Short-term interim solutions refer to efforts that ensure safe water is available to a resident relying on an otherwise inoperable domestic or state small well or the groundwater is not safe to consume. This typically encompasses emergency water provision (bottled water, hauled water, and temporary tanks), as well as protective measures like 'do not drink' advisories and emergency connections to alternative supplies. **Domestic well owners** are responsiblee for seeking immediate assistance when an issue emerges. **State small water systems** present a distinct challenge: a single well failure can simultaneously affect multiple households, but the system may be too small and informally organized to navigate emergency assistance programs on its own. The county is the most active government partner, serving as the first institutional point of contact, but engagement is largely complaint-driven rather than preventative/proactive.

Supporting roles for short term interim solutions can include (1) GSAs where mitigation plans exist, (2) the State Water Board through limited funding and assistance programs, and (3) CBOs and NGOs who fill critical gaps in disadvantaged and rural communities by connecting residents to programs and escalating unmet needs. The core vulnerability is that domestic well owners (especially renters) have the least structured support system of any water users in the state, with detection, response, and recovery depending heavily on individual initiative and local program availability.

BY ENTITY

Property Owner / Occupant (Domestic Well)

- Responsible for securing their own interim water supply (bottled water, hauled water)
- Must notify tenants and provide safe drinking water if rental property is in a covered testing program and contamination is confirmed
- Initiate contact with county or assistance programs for support

Operator (SSWS)

- Notify all users immediately when the system cannot deliver safe water
- Implement emergency operating procedures outlined in the system's permit
- Coordinate with county on interim water delivery or connection to alternative supply
- Report system status and actions taken to the local health officer

NGOs and CBOs

- If funded, administer water replacement programs, outreach to residents, and provide other technical assistance. Highly variable by region.

County

- Issue emergency orders and public notifications
- Coordinate and oversee interim water replacement programs (bottled water, hauled water, point-of-use filters)
- Connect affected residents and owners to state assistance programs
- Conduct follow-up inspections to verify interim measures are in place
- Host drought task force (or similar alternative), per SB 552 (2021), convening tracking and collective discussions on domestic well and state small drought impacts, response needs, and mitigation.

Groundwater Sustainability Agencies (GSAs)

- No direct interim response role for domestic and state small wells. May have well mitigation program developed as part of their GSP or developed separately. Eligibility criteria and services offered varies.
- May provide data to county and state to help prioritize response in drought-stressed areas
- Can coordinate with local agencies on basin-level drought response planning

State Water Resources Control Board

- Fund limited state interim water assistance programs
- Issue emergency regulatory relief or compliance flexibility where needed
- When funding is available, support counties with technical assistance and resources

Department of Water Resources (DWR)

- Provide hydrologic conditions data and technical support to response agencies
- Administer drought relief funding programs where applicable, when available and directed
- No direct role in individual well or state small system interim response

CalOES

- In the recent past drought, CalOES was activated as part of the drought emergency declaration, playing a central role in coordination across state agencies, counties, and others

Table 4-1. Napa County Drought Response Short-Term Response Actions

ID	Action	Category	Action Descriptions and Possible Steps to Implement	Potential Barriers to Implementation	Lead Entity
			Tier 1		
ST-01	Packaged or Bottled Water	Emergency and interim drinking water solutions	Short-term transportation of packaged or bottled water will be provided to vulnerable communities that rely on domestic wells and SSWS. The County will coordinate the procurement and delivery of packaged water to identified drop off areas. This can be achieved by continuing to evaluate this action and outline the steps necessary to support the SSWSs and domestic wells impacted. This action would be subject to funding and availability.	Lead entity ownership and action.	Napa County, OES and PBES
ST-02	Water Hauling	Emergency and interim drinking water solutions	The County will establish a list of vendor contacts that domestic well owners or SSWS communities can contact to provide hauled-water services. This hauled water may be used to fill available storage tanks in vulnerable communities that rely on domestic wells and SSWS. The City of Napa has a list of approved water-hauling vendors. The County would provide this list to affected users who need water-hauling services.	None; Napa County to make the water hauling vendor list available.	Napa County, PBES
ST-03	Expedite Well Replacement Permits	Planning and Engagement	When a drought emergency is declared, the County will continue to expedite the permitting to replace wells that have run dry. The County would assess the drought situation and determine if well permits should be expedited.	None; however, if there are large number of permits requests this could delay processing of these permits.	Napa County, PBES

Key:
LSCE = Luhdorff & Scalmanini Consulting Engineers
OES = Napa County Office of Emergency Services
PBES = Napa County Planning, Building, and Environmental Services Department
PIO = Public Information Office
SSWS = state small water system

Figure 2. Example of short-term response actions from the Napa County Drought Resilience Plan (shortened).

Lifecycle Phase

LONG TERM MITIGATION STRATEGIES

OVERVIEW

Long-term mitigation strategies and actions provide long-term solutions, in many cases preventive measures, to areas susceptible to drought and water shortage conditions and those with water quality issues**.** Solutions range from building local staff capacity and resources to manage drought, deepening or replacing wells, installing treatment systems to consolidating multiple small systems into a single more resilient utility or connecting them to a larger water system. For **domestic wells**, at the individual level, long-term mitigation falls on individual owners, who must make and fund decisions about well deepening, treatment, or alternative water sources, with limited support from state, local, and community-based programs. For **state small water systems**, long-term mitigation often involves difficult questions about governance, cost-sharing, and whether the system can sustain itself organizationally. Roles and responsibilities vary widely for each of these place- or region-specific strategies.

BY ENTITY

Property Owner / Occupant (Domestic Well)

- Decides whether to deepen the well, install treatment equipment, connect to an alternative source, or abandon the well, often at significant personal expense and largely without public subsidy unless qualifying for state or local assistance programs

Operator (SSWS)

- Evaluate system sustainability, including technical, managerial, and financial capacity, and may determine whether continued independent operation is viable. Assess whether consolidation or connection to a larger system is a more sustainable long-term approach.
- Seek funding for capital improvements and long-term solutions
- Coordinate with regulators, local agencies, and neighboring systems on compliance, consolidation, or service extension opportunities
- Can engage proactively in groundwater sustainability planning and local land use processes to represent system needs

CBOs and NGOs

- Frequently advocates to surface need for long-term mitigation programs, bringing community data and lived experience to state and local policy processes
- Directly administer or assist in delivering state-funded programs, e.g., well replacement, consolidation, treatment installation, for households that lack the capacity to navigate complex application processes
- Bridge the gap between available funding and the communities most in need of long-term solutions

County

- Reviews and issues permits for well modifications, deepening, and abandonment, ensuring compliance with state and local standards; may also track the reported need for these modifications (especially during dry periods) and flag chronic problem wells for follow-up, connecting owners/operators to state-funded mitigation programs.
- Some counties have administered state-funded well replacement and deepening programs for low-income households, though these tools/programs vary widely by county
- Host drought task force (or similar alternative), per SB 552 (2021), convening tracking and collective discussions on domestic well and state small drought impacts, response needs, and mitigation.
- Can advance long-term mitigation through general plan policies restricting contamination-generating land uses near domestic well areas, zoning changes that support water system consolidation, and investment of state and federal infrastructure funds in upgrading or connecting vulnerable state small water systems to more resilient supplies.
- Apart from permitting and drought task force, other roles and responsibilities are highly variable by county.

Groundwater Sustainability Agency (GSA)

- Primary long-term lever for controlling basin-wide groundwater decline under SGMA, which is the root cause of many domestic well/SSWS failures
- Sustainable management criteria and pumping limitations can reduce overdraft conditions that render domestic wells/SSWS non-functional over time
- Some GSAs include domestic well mitigation measures in their Groundwater Sustainability Plans (highly variable by GSA), Project and Management Actions, or as an otherwise separate domestic well mitigation program.

Department of Water Resources (DWR)

- Has administered state drought relief funding streams for long-term mitigation including well replacement, consolidation, and treatment installation for low-income households. Funding has been highly variable based on drought conditions and federal and state budget availability, such as drought relief funds from the 2021–22 drought must be expended by June 30, 2026.

State Water Resources Control Board (SWRCB)

- Has co-administered state drought relief funding for long-term mitigation alongside DWR, including consolidation of failing domestic wells to more secure water-sourced public water systems
- Funds water quality mitigation programs targeting domestic well contamination in disadvantaged communities
- Plays a regulatory role in ensuring long-term solutions meet safe drinking water standards

Table 5-1. Napa County Drought Response for Long-Term Mitigation Strategies and Actions

ID	Action	Category	Action Descriptions and Possible Steps to Implement	Potential Barriers to Implementation	Lead Entity
LT-01	Education	Planning and Engagement	The County will promote water conservation and other drought-related topics through outreach and educational materials. Topics would be directed toward domestic wells and SSWSs. This can be achieved by collaboration with local agencies to create relative material and distribute the material through various communication channels.	County staffing to provide outreach activities.	Napa County, PBES, OES, PIO, and Public Works
LT-02	Treatment of Water from Alternate Sources	Drinking water solutions	The County will provide technical assistance to SSWSs, upon request, to explore short-term treatment options that would allow for an emergency source of supply during disruptions. An alternate source includes a nearby well that has water but does not meet the desired water quality. Approval of the water source and/or treatment unit by the Environmental Health Division will be required to ensure that the treatment is sufficient for addressing the source water contamination. The County will develop an emergency water treatment guide, consult SSWS operators, facilitate regulatory communication, provide technical assistance, and stress proper approval for addressing contamination.	EHD will need to provide staff to provide technical assistance.	Napa County, EHD
LT-03	Website and Online Educational Materials	Planning and Engagement	The County will maintain a web portal with County information, permits, and forms in one place. It will also provide a map depicting water shortage vulnerability areas. Educational information will include well maintenance (see *Well Owner's Guide: A Guide for Private Well Owners in Napa County* at https://www.countyofnapa.org/3210/Resources-for-Well-Owners). The County will ensure that portals and tools are simple, accessible, and easy to navigate to remove avoidable associated barriers. This can be achieved by maintaining the website for groundwater related information.	County resources.	Napa County, PBES
LT-04	Improve Water Efficiency	Drinking water solutions	The County will encourage individuals to improve the efficiency of existing irrigation systems for vineyards, landscape and/or small agriculture plots to decrease demand and reduce water use. This can be achieved by public education campaigns and potentially working with local hardware stores and landscaping companies to offer workshops on irrigation efficiency.	County has the information and needs staff to prepare a presentable material in their website.	Napa County, PBES
LT-05	Installation of Water Measuring Devices	Water mitigation programs	The County will explore expanding its current well-monitoring networks. It will also offer guidance to private well owners on how to accurately measure their water usage, with some information already available in the *Well Owner's Guide: A Guide for Private Well Owners in Napa County*. The County will provide technical assistance to encourage well users to install flow meters and voluntarily record groundwater levels. The County will assess and expand its well-monitoring networks while developing guides on accurate water usage measurement for domestic well owners and SSWS. An outreach program will be created to encourage flow meter installation and voluntary groundwater level recording, offering technical assistance and information through various channels. The County will also compile a list of potential grants for flow meter installation and create a user-friendly guide for the grant application process, making all resources easily accessible online and through local offices.	The County need staff resources who can track the types of potential funding programs and provide technical assistance.	Napa County, PBES
LT-06	Connect SSWS to Larger Systems	Consolidation Consideration	Infrastructure upgrades will improve the reliability of the SSWS and increase the likelihood that a close-by public water agency would consolidate with a well maintained SSWS. Another approach is to provide an intertie of a SSWS within close proximity to public water systems. SSWS shall perform needed infrastructure upgrades to improve their service reliability and reduce system losses. Some efforts include managing system water pressure, repairing aging pipelines, and replacing outdated meters, etc. The County and public water agency(s) will provide technical assistance to facilitate consolidation, where applicable. The County can guide SSWS owners on system improvements, including pressure management, pipeline repairs, and meter upgrades. It will offer advice on best practices and funding sources, while facilitating communication with public water agencies for potential consolidations.	SSWS does not have the resources to engage with the County and nearby public water agencies.	SSWS

Key:
DWR = California Department of Water Resources
EHD = Napa County Environmental Health Division
PBES = Napa County Planning, Building, and Environmental Services Department
SAFER = Safe and Affordable Funding for Equity and Resilience
SSWS = state small water systems

Figure 3. Example of long-term response actions from the Napa County Drought Resilience Plan (shortened).

External Consideration

GROUNDWATER & HYDROLOGY

OVERVIEW

Domestic wells and **state small water systems** draw from shared groundwater basins whose hydrology**,** geology, recharge rates, and pumping patterns determine water availability and quality. As groundwater levels decline, wells may draw from different geological zones, reducing yield and concentrating naturally occurring contaminants like arsenic and manganese. While individual well owners and system operators have little control over basin-scale hydrologic conditions, they are directly exposed to their impacts. As a result, groundwater management decisions and regional hydrologic trends play a critical role in shaping the reliability and safety of domestic wells and state small water systems.

BY ENTITY

Property Owner / Occupant (Domestic Well) and Operator (SSWS)

- No control over regional hydrology but directly exposed to its consequences (e.g., declining water tables from drought or overdraft can lead to a non-functional well)
- Can develop a basic understanding of local basin hydrogeology using GSA annual reports, DWR basin characterizations, well completion reports, other public resources, and participating in local water resources planning discussions.

CBOs and NGOs

- In some areas, can translate consequences of changing hydrology, such as declining yields, seasonal dry conditions, into community-level data that can inform state and local planning
- Can conduct or commission independent hydrological assessments to advocate for basin management decisions protecting domestic well users and state small water systems

County

- Limited direct role in hydrological assessment but fields complaints from owners affected by declining water tables, serving as an early indicator of basin-wide stress
- Counties can protect recharge areas through land use authority and require hydrogeologic assessments for new large-scale pumping projects that may affect existing domestic wells

Groundwater Sustainability Agency (GSA)

- Primary local authority for monitoring groundwater levels, subsidence, and water quality trends under SGMA
- Data informs domestic well vulnerability assessments and mitigation planning

Department of Water Resources (DWR)

- Primary state authority on groundwater hydrology, managing the CASGEM monitoring program, basin characterization modeling, and others to understand groundwater.
- Publishes annual dry well susceptibility estimates for basin areas, hosts groundwater data publicly, and maintains and updates regularly the domestic well and state small water shortage vulnerability scoring tool for local planners

State Water Resources Control Board (SWRCB)

- Funds over 10 local programs assessing domestic well water quality
- Compiles groundwater quality datasets from multiple organizations, compiled and assessed annually as an updated Aquifer Risk Map (per SB 200)

External Consideration

LAND USE DECISIONS

Land use decisions

OVERVIEW

Land use decisions (including zoning, permitting, agricultural practices, and development approvals) shape the physical and chemical environment in which **domestic wells** and **state small water systems** operate. Domestic well owners and small water system operators have limited ability to control surrounding land use that can compromise groundwater quality or recharge, leaving them dependent on local planning processes they may have little access to.

Counties hold the most direct authority on land use planning and permitting through tools like hydrogeological assessments, wellhead protection overlays, and project conditioning, though use of these tools varies widely. County environmental health departments contribute by enforcing setbacks and flagging threats during permitting review. At the basin level, GSAs must account for beneficial user impacts in Groundwater Sustainability Plans as they are 'beneficial users', providing a regional layer that can constrain harmful land uses or pumping patterns. The state shapes local decisions indirectly through funding conditions, discharge permitting, and General Plan Guidance. CBOs and NGOs may support well-dependent communities to have a voice in planning processes through public comment, community organizing, and legal challenges where needed.

BY ENTITY

Property Owner / Occupant (Domestic Well) and Operator (SSWS)

- Has limited ability to influence nearby land use decisions (including development, agriculture, industrial activity) that can introduce contamination risks or affect recharge patterns,
- Can participate in public processes, including comment on major development projects, agricultural permits, and general plan updates that may affect groundwater quality or quantity

Licensed Driller / Pump Contractor (C-57 / C-61 / D-21)

- Comply with local permitting requirements and setback standards when siting wells
- Responsible for siting wells to minimize contamination risk

CBOs and NGOs

- Play a critical advocacy role in land use proceedings, representing the interests of domestic well-dependent and state small water system communities that are often not organized enough to engage individually in complex planning and permitting processes
- Engage in general plan updates, specific plans, and environmental impact reviews to advocate for groundwater protections
- Submit comments, organize community input, and challenge project approvals that inadequately protect groundwater for well-dependent households

Local Agency

- County Environmental Health: Enforces well setback requirements from contamination sources; flags proposed land uses threatening existing domestic wells during planning review; permitting data serves as a key input for land use decisions affecting groundwater
- County Planning: A direct long-term lever for protecting domestic wells; can require hydrogeological assessments, restrict incompatible uses near wellhead protection areas, and condition project approvals on demonstrated groundwater protection

Groundwater Sustainability Agency (GSA)

- Groundwater Sustainability Plans (GSPs) must account for beneficial user impacts from land use and pumping decisions
- Sustainable management criteria can limit land uses or pumping patterns that threaten domestic well viability

State Water Resources Control Board (SWRCB)

- Regulates discharges that may impact groundwater quality through water quality permitting

Governor's Office of Land Use and Climate Innovation (LCI)

- Provides General Plan Guidance that informs how local agencies structure land use planning and zoning decisions

External Consideration

SGMA – management activities

SGMA – management activities

OVERVIEW

The Sustainable Groundwater Management Act (SGMA), enacted in 2014, requires that California's most critically overdrafted groundwater basins achieve sustainability by 2040 (meaning no chronic lowering of groundwater levels, no significant degradation of water quality, and no other undesirable results). For **domestic wells** and **state small water systems**, SGMA is simultaneously a threat and an opportunity. It is a threat because the management actions required to achieve sustainability, such as pumping reductions, recharge projects, and allocation systems, can have direct and sometimes severe impacts on domestic well supply and water quality if they are not designed with these users in mind. It is an opportunity because SGMA creates, for the first time, a legal and institutional framework that explicitly requires groundwater managers to account for all beneficial users (including domestic well users and SSWS) and to prevent the undesirable results that have historically led to their wells dry or unusable.

* Note this is only relevant for domestic wells and SSWS located within overdrafted basins, as determined by DWR.

BY ENTITY

Property Owner / Occupant (Domestic Well) and Operator (SSWS)

- Are affected by SGMA management decisions, including pumping limits, recharge projects, and groundwater allocation approaches
- Can participate in GSA processes, including attending meetings and submitting input on GSP development and updates
- Can engage with GSAs to communicate how groundwater conditions and management actions affect their water supply reliability
- Can use GSP information (e.g., thresholds, measurable objectives) to understand potential risks to their water supply

CBOs and NGOs

- Advocate for domestic well and small system protections in SGMA planning processes
- Provide technical assistance to help communities interpret GSPs and develop input
- Engage in public comment and legal processes where GSPs do not adequately address domestic well impacts

Groundwater Sustainability Agencies (GSAs)

- Develop and implement GSPs that achieve sustainable groundwater management
- Evaluate and address impacts to domestic wells and state small water systems as beneficial users
- Establish measurable objectives and minimum thresholds for groundwater conditions
- Implement management actions to avoid undesirable results
- Can design mitigation programs to address impacts to domestic wells (varies by basin)

County

- Invite GSAs within their jurisdiction to participate in the county drought task force, established under SB 552, for domestic wells and state small water systems
- Can participate in GSA governance and align land use planning with groundwater management
- Can incorporate domestic well and state small water system considerations into emergency response planning related to SGMA impacts

Department of Water Resources (DWR)

- Reviews and evaluates GSPs to ensure they meet SGMA requirements
- Provides technical guidance and data to support groundwater sustainability planning

State Water Resources Control Board (SWRCB)

- Provides backstop regulatory authority in basins that fail to achieve sustainability
- Can intervene in non-compliant basins through State Water Board actions under SGMA

External Consideration

Water Quality Conditions

Water quality conditions

OVERVIEW

Groundwater quality is shaped by natural geology and decades of land use; drought can exacerbate quality issues. Falling water tables draw from different geological zones, concentrating naturally occurring contaminants like arsenic, manganese, and uranium. Anthropogenic sources (agricultural nitrate, legacy pesticides, industrial chemicals) compound the problem. **Domestic well owners** have direct responsibility for testing and treating their own water, while state small water system operators are accountable for monitoring, treatment, and notifying users when standards are exceeded. Counties, GSAs, and CBOs play important supporting roles through well testing programs, SGMA-mandated quality monitoring, and community sampling. The SWRCB maintains the GeoTracker GAMA portal as a statewide data resource, and through the SAFER program funds counties, testing programs, and treatment assistance for small and disadvantaged communities. DWR's water quality-related role is primarily about well construction standards, technical guidance to GSAs on quality monitoring under SGMA, and maintaining data infrastructure.

BY ENTITY

Property Owner (Domestic Well)

- Can test water quality (suggested annually)
- Can install and maintain treatment systems to address contamination
- Can notify the county to seek assistance when contamination is identified

Operator (SSWS)

- Conduct water quality monitoring and reporting in accordance with county permit requirements
- Take corrective action when contaminants exceed allowable levels (e.g., provide alternative drinking water)
- Notify users when water quality is unsafe
- Maintain treatment systems as necessary to ensure compliance with drinking water standards
- Can coordinate with state agencies to receive financial or technical assistance

CBOs and NGOs

- Conduct community sampling programs where regulatory monitoring falls short; aggregate results to identify spatial contamination patterns that individual owners cannot see.
- Help residents interpret test results, access free or subsidized testing, navigate filter options, and connect to legal resources when contamination is linked to an identifiable source or regulatory failure.

County

- Operate domestic well testing programs and maintain water quality databases; varies by county
- Can use monitoring data to identify emerging contamination patterns and inform response actions

Groundwater Sustainability Agencies (GSAs)

- Monitor groundwater quality as part of their SGMA obligations (water quality degradation is an undesirable result)
- Design and maintain monitoring networks and objectives that account for domestic wells and state small water systems in the basin.

State Water Resources Control Board (SWRCB)

- Maintain statewide water quality data system – the GeoTracker GAMA portal aggregates water quality data from domestic well monitoring and small system reporting statewide.
- Can fund domestic well monitoring programs to offer free testing in priority areas
- Enforce drinking water standards for state small water systems through required monitoring and reporting.
- Provide treatment guidance, funding, and technical assistance (through SAFER) to small and disadvantaged community systems

Department of Water Resources (DWR)

- Maintain groundwater data and assessment tools that inform understanding of water quality risks
- Can provide technical guidance and support related to groundwater quality and drought impacts