Del Norte County Drought Resilience Plan

Prepared for:
Del Norte County

Prepared by:
Stantec Consulting Services Inc.

July 28, 2026

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Acknowledgements

The Del Norte County Drought Resilience Plan was developed with direct technical assistance from the California Department of Water Resources' County Drought Resilience Planning Assistance Program. This plan was developed by Del Norte County staff in coordination with Stantec Consulting Services Inc. Additional support was provided by the Del Norte County Drought and Water Shortage Task Force and the California Department of Water Resources Water Justice Office.

Del Norte County was approved to receive direct technical assistance on September 25, 2023, to receive direct technical assistance to comply with the requirements of SB 552.

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Acronyms and Abbreviations

ACS	American Community Survey
CDAG	County Drought Advisory Group
CDD	Del Norte County Community Development Department
Charter	Drought and Water Shortage Task Force Charter
County	Del Norte County
County DRP	Del Norte County Drought Resilience Plan
County OES	Del Norte County Office of Emergency Services
County PHB	County Public Health Branch
County PHO	County Public Health Officer
CSD	Community Service Districts
CWC	California Water Code
DWR	California Department of Water Resources
DWW	State Division of Drinking Water
DWWM	Domestic Water Well Mitigation
EHD	Del Norte County Environmental Health Division
EIDWD	Emergency and Interim Drinking Water Distribution
EPA	Environmental Protection Agency
ERP	Emergency Response Process
FEMA	Federal Emergency Management Agency
GSA	Groundwater Sustainability Agencies
GSP	Groundwater Sustainability Plan
Guidebook	California Department of Water Resources County Drought Resilience Guidebook
HSC	California Health and Safety Code
HUC	Hydrologic Unit Code
Legislature	State Legislature
LTMSA	Long-Term Mitigation Strategies/Actions
MCL	Maximum Contaminant Level
NCRWQCB	North Coast Regional Water Quality Control Board
PCT	Project Coordination Team
PHB	Del Norte County Public Health Branch

PLSS	Public Land Survey Section
PSPS	Public Safety Power Shutoff
Risk Assessment	Drought and Water Shortage Risk Assessment
SAFER	Safe and Affordable Funding for Equity and Resilience Program
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
SSWS	State Small Water Systems
State	State of California
State Water Board	State Water Resources Control Board
STRA	Short-Term Response Action
Task Force	Del Norte County Drought and Water Shortage Task Force
USCB	United State Census Bureau
USDA	United States Department of Agriculture
USFS	United States Forest Service
WSVE	Water Shortage Vulnerability Explorer

1.0 Introduction

The Del Norte County Drought Resilience Plan (County DRP) documents how Del Norte County (County), its Drought and Water Shortage Task Force (Task Force) members, and other entities with water supply and drought management responsibilities will address water supply vulnerabilities for two types of systems in the County: domestic wells, as defined in California Health and Safety Code (HSC) Section 116681(i) and California Water Code (CWC) Section 10609.51(d); state small water systems (SSWS), as defined in HSC Section 116275(n) and CWC Section 10609.51(l). This County DRP was prepared pursuant to Senate Bill (SB) 552: Drought Planning for Small Water Suppliers, State Small Water Systems, and Domestic Well Communities (Hertzberg; see Section 1.2 for additional detail). This County DRP was developed by the County with funding and technical support provided by the California Department of Water Resources (DWR) Drought Resilience Planning Assistance Program.

1.1 Document Organization

Organization of this document draws from DWR's *County Drought Resilience Guidebook* (March 2023; Guidebook). The Guidebook is a resource for counties to use in developing a County DRP specifically for SSWSs and domestic wells. Consistent with the Guidebook, this County DRP is organized into six chapters, as follows:

- **Chapter 1: Introduction** provides an overview of the legislation relating to SB 552 and the development of the County DRP. This chapter also includes background on County demographics, geography, and an overview of domestic wells and SSWSs within the County's jurisdiction.
- **Chapter 2: County Drought and Water Shortage Task Force** provides an overview of the Task Force, including its development process and charter, membership, roles, purpose, and meeting frequency.
- **Chapter 3: Drought and Water Shortage Risk Assessment** characterizes the vulnerability of domestic wells and SSWSs within the County to drought and water shortage. This chapter also presents the approach and data used to assess vulnerability. It highlights areas within the County that have a higher risk of drought and water shortage where domestic wells and SSWSs are present. Additionally, data gaps are identified to help inform potential long-term strategies.
- **Chapter 4: Short-Term Response Actions** details the proposed short-term response actions for emergency and interim drought solutions, including specific actions, local response triggers, and public engagement.
- **Chapter 5: Long-Term Mitigation Strategies and Actions** details the proposed long-term mitigation strategies and actions for improving the water supply resilience of domestic wells and SSWSs.
- **Chapter 6: Implementation Considerations** presents a roadmap for implementing short-term actions and long-term strategies consistent with the mission and authority of involved agencies. This includes identifying agencies and entities responsible for implementation, the status of implementation, funding, authorization for implementation, and the anticipated schedule. This

section also summarizes the level of multi-agency collaboration identified by agencies to support implementation.

- **Chapter 7: References** provides a list of references used in this plan.

1.2 Legislative Requirements

Signed into law September 2021 by Governor Gavin Newsom, SB 552 (Hertzberg)[1] obligated the State of California (State) and local governments to share the responsibility in preparing for and responding to a water shortage event. These new requirements are expected to improve the ability of Californians to manage future droughts and to help prevent catastrophic impacts on drinking water for communities vulnerable to the effects of climate change. The bill outlines the new requirements for small water suppliers, county governments, DWR, and the State Water Resources Control Board (State Water Board) to implement more proactive drought planning and be better prepared for future water shortage events or dry years.

SB552 also implements legislation on Water Conservation and Drought Planning (SB 606 [Hertzberg] and AB 1668 [Friedman], as amended; collectively referred to as "2018 Legislation") passed by the State Legislature (Legislature). The 2018 Legislation provides a new framework for urban water use efficiency; directives for eliminating water waste; additional requirements for strengthening local drought resilience for urban areas, vulnerable small water suppliers, and rural communities; and recommendations for improving agricultural water use efficiency and drought planning.

Water users protected under SB 552 include the following:

- **Small Water Supplier:** A community water system serving 15 to 2,999 service connections, inclusive, and that provides less than 3,000 acre-feet of water annually (CWC Section 10609.51(j)).
- **Community Water System:** A public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system, as defined in HSC Section 116275(i) and CWS Section 10609.51(a).
- **State Small Water System:** A system for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year, as defined in HSC Section 116275(n) and CWS Section 10609.51(l).

[1] In 2018, DWR convened a County Drought Advisory Group (CDAG) to assist in a vulnerability assessment and to develop recommended actions for improving drought planning for small water suppliers and rural communities. The CDAG consisted of representatives from counties and other local agencies, small water systems, tribes, academics, non-profit organizations, and other interested parties. The CDAG's recommendations were provided to the Legislature in March 2021 and served as the basis for SB 552. DWR has also established a standing drought and water shortage interagency task force, in coordination with the State Water Board and other relevant state agencies, to facilitate proactive state planning and coordination for pre-drought planning, emergency response, and post-drought management, consistent with SB 552. The interagency task force, called the Drought Resilience Interagency and Partners Collaborative, serves as a public forum with state and non-state agency members to advance drought strategies and continue building resilience to the increasingly arid conditions California faces. More information is available at: https://water.ca.gov/drip.

- **Domestic Well:** A groundwater well used to supply water for the domestic needs of an individual residence or a water system that is not a public water system and that has no more than four service connections, as defined in HSC Section 116681(i) and CWC Section 10609.51(d).
- **Nontransient Noncommunity Water System:** A public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year, as defined in HSC Section 116275(k) and CWC Section 10609.51(f).

For the water users protected under SB 552, this County DRP addresses water shortage vulnerabilities for domestic wells and SSWSs. Other water users protected under SB 552 not included in this County DRP have separate requirements to address water shortage vulnerabilities.

1.2.1 County Agency Requirements

This plan fulfills County requirements for preparation of a plan that includes potential drought and water shortage risk and proposed interim and long-term solutions for domestic wells and SSWSs systems within the County's jurisdiction (CWC Section 10609.70). While measures to protect small water suppliers and nontransient noncommunity water systems are not within the scope of this document, this plan considers integration opportunities consistent with the intent of SB 552. Applicable County requirements are:

- Establish a standing County Drought and Water Shortage Task Force (CWC Section 10609.70(a))
- Develop a plan that considers, at a minimum, each of the following (CWC Section 10609.70(b)):
    1) Consolidations for existing water systems and domestic wells
    2) Domestic well drinking water mitigation programs
    3) Provision of emergency and interim drinking water solutions
    4) An analysis of the steps necessary to implement the plan
    5) An analysis of local, State, and federal funding sources available to implement the plan

1.2.2 State Agency Involvement and Implementation

SB 552 defined a series of requirements for the State Water Board and DWR. These include the following:

State Water Resources Control Board (CWC Section10609.70(c)):

The state board shall work with counties, groundwater sustainability agencies, technical assistance providers, nonprofit organizations, community-based organizations, and the public to address state small water system and domestic well community drought and emergency water shortage resiliency needs, including both of the following:

> *(1) Proactive communication to domestic well communities before a drought occurs, such as information on local bottled water and water tank providers.*
>
> *(2) Funding for installation of basic drought and emergency water shortage resiliency infrastructure, such as well monitoring devices.*

California Department of Water Resources (CWC Section 10609.80(a)):

The department shall take both of the following actions to support implementation of the recommendations of its County Drought Advisory Group:

> *(1) Maintain, in partnership with the state board and other relevant state agencies, the risk vulnerability tool developed as part of the County Drought Advisory Group process and continue to refine existing data and gather new data for the tool, including, but not limited to, data on all of the following:*
>
> > *(A) Small water suppliers and nontransient noncommunity water systems serving a school.*
> >
> > *(B) State small water systems and rural communities.*
> >
> > *(C) Domestic wells and other self-supplied residents.*
>
> *(2) Update the risk vulnerability tool for small water suppliers and rural communities periodically, by doing all of the following:*
>
> > *(A) Revise the indicators and construction of the scoring as more data becomes readily available.*
> >
> > *(B) Make existing and new data publicly available on the California Open Data internet web portal.*
> >
> > *(C) In consultation with other relevant state agencies, identify deficits in data quality and availability and develop recommendations to address these gaps.*

(b) (1) The department, in collaboration with the state board and relevant state agencies, shall establish a standing interagency drought and water shortage task force to facilitate proactive state planning and coordination, both for predrought planning and post-drought emergency response, to develop strategies to enhance collaboration between various fields, and to consider all types of water users.

> *(2) The interagency drought and water shortage task force shall include representatives from local governments, community-based organizations, nonprofit technical assistance providers, the public, and experts in land use planning, water resiliency, and water infrastructure.*

1.3 Purpose of the Del Norte County Drought Resilience Plan

The County DRP documents how the County, Task Force members, and other entities with water supply and drought management responsibilities intend to address water supply vulnerabilities of water users protected under SB 552 in the County. It is a single document for ease of reference and future updates. It describes the water shortage vulnerabilities present in the County; the responses to identified vulnerabilities; and the policy, financial, and regulatory considerations necessary for the implementation of the County DRP. Implementation of the County DRP is led by the Environmental Health Division (EHD) of the Community Development Department (CDD) in close coordination with other divisions of the CDD and other County departments.

This County DRP was developed by the County with funding and technical support provided by DWR's County Drought Resilience Planning Assistance Program; to comply with legislative requirements of SB 552.

1.4 Del Norte County Overview

The County is located in the northwest corner of California along the Pacific Ocean. The County is adjacent to the Oregon border and the County seat is Crescent City. There are six census designated places within the County, as identified in Table 1-1.

Table 1-1. Household Income Among Census Designated Places of Del Norte County

Census Designated Place	Population estimates (ACS 2024a)	Median Household Income (ACS 2024b)	Persons in poverty, percent (ACS 2024c)
Crescent City	6,046	$35,540	17.2
Bertsch-Oceanview	2,250	$73,173	9.6
Smith River	898	--	16.9
Klamath	931	$46,979	31.1
Gasquet	346	$48,750	27.5
Fort Dick	1,365	$70,610	15.6

Key:
ACS = American Community Survey
--= The estimate could not be computed because there were an insufficient number of sample observations.

1.4.1 Demographics

Selected demographics of the State and County are summarized below per the 2020 United States Census Bureau and 2022 American Community Survey (ACS) (USCB 2020a; 2020b).

- **Population:** The State of California has a population of 39,538,223 people. The County has a population of 27,743 people. The County is primarily rural with small towns and communities including Smith River, Crescent City, Klamath, and Gasquet.
- **Age:** The County has a median age of 40.0. Around 19.2 percent of the population is 65 years and over which is higher than the State median of 9.4 percent.
- **Ethnicity:** The three largest ethnic groups in the County are White (Non-Hispanic or Latino) (62 percent), Native American (9 percent), and Other (11 percent).
- **Household Income:** The median household income of the County, per the 2022 ACS five-year Estimates, is $61,149. The median household income of the State, per the 2023 ACS one-year Estimates, is $95,521.
- **Education:** The County has a lower-than-average percentage of residents 25 years or older with a bachelor's degree or higher at around 17.7 percent compared to 37 percent for California overall.
- **Poverty Level:** About 14.3 percent of the population in the County live below the poverty line, a number higher than the national average of 12.6 percent. The largest demographic living in poverty are residents under 18 years of age, followed by those 18 to 64 years, followed by those 65 years and over.

1.4.2 Geography

The County is the northernmost county on the California Coast. Its geography ranges from the conifer forest of the Klamath Mountain area to the sand beaches and dunes of the pacific coastal plain. The County is a coastal region with the headwaters of several rivers, plus mountains and coastal flatlands. The majority of the County is forestland owned by the United States Forest Service (USFS) (Del Norte County 2003).

Hydrology

This County DRP applies the U.S. Geological Survey's Hydrologic Unit Codes (HUCs) system. Developed to classify and manage watersheds across the United States, the system organizes watersheds into six levels of classification within six two-digit fields that represent different scales of hydrologic units. The fourth level of classification – referred to as HUC 8 – has been applied to this County DRP for planning purposes. There are five HUC 8 hydrologic subregions that overlay the County, as shown in Figure 1-1. Two are tributaries to the Southern Oregon Coastal Basin, the Chetco and Illinois subbasins; two are tributaries to the Northern California Coastal Basin, the Smith and Redwood-Mad subbasins and portions of the Klamath subbasin as part of the greater Klamath Basin (USGS 2024). Water within these subbasins originates both in and outside the County; there are many tributaries and streams. The Lake Earl Wildlife Area encompasses Lake Earl and Lake Tolowa, two lagoons connected by a deep channel known as the Narrows, and bordered by salt and freshwater marshes.

Figure 1-1. Hydrologic Subregions within Del Norte County

Precipitation

Precipitation within the County is seasonal. Most of the precipitation occurs between November and May, with minimal precipitation occurring during the summer months July to September. This precipitation can be highly variable from year-to-year and is geographically influenced (e.g., inland versus coastal areas). Gasquet, an unincorporated community located inland in the central mountainous, recorded precipitation levels of 81.45 inches in 2023, 57.51 inches in 2022, 73.66 inches in 2021, 65.21 inches in 2020, and 98.92 inches in 2019 (CDEC 2024a). Conversely, the annual precipitation in Crescent City along the coast was 55.68 inches in 2023, 45.29 inches in 2022, 50.23 inches in 2021, 40.53 inches in 2020, and 59.58 inches in 2019 (CDEC 2024b). Del Norte County's higher rainfall contributes to its lush, green landscapes and diverse ecosystems.

Topography

Topography within the County is shown in Figure 1-2. The County is primarily mountainous as it is situated within the Coast Range and the Klamath Mountains. The highest point in the County is Bear Mountain, a 6,415-foot-tall peak located approximately 14 miles south of the California-Oregon border. Average annual precipitation at Bear Mountain is 153.43 inches (Prism 2026). However, some flatlands are present along the coast with the Pacific Ocean. This topography can influence precipitation, with more precipitation typically falling in higher terrain than on the coastal flatlands.

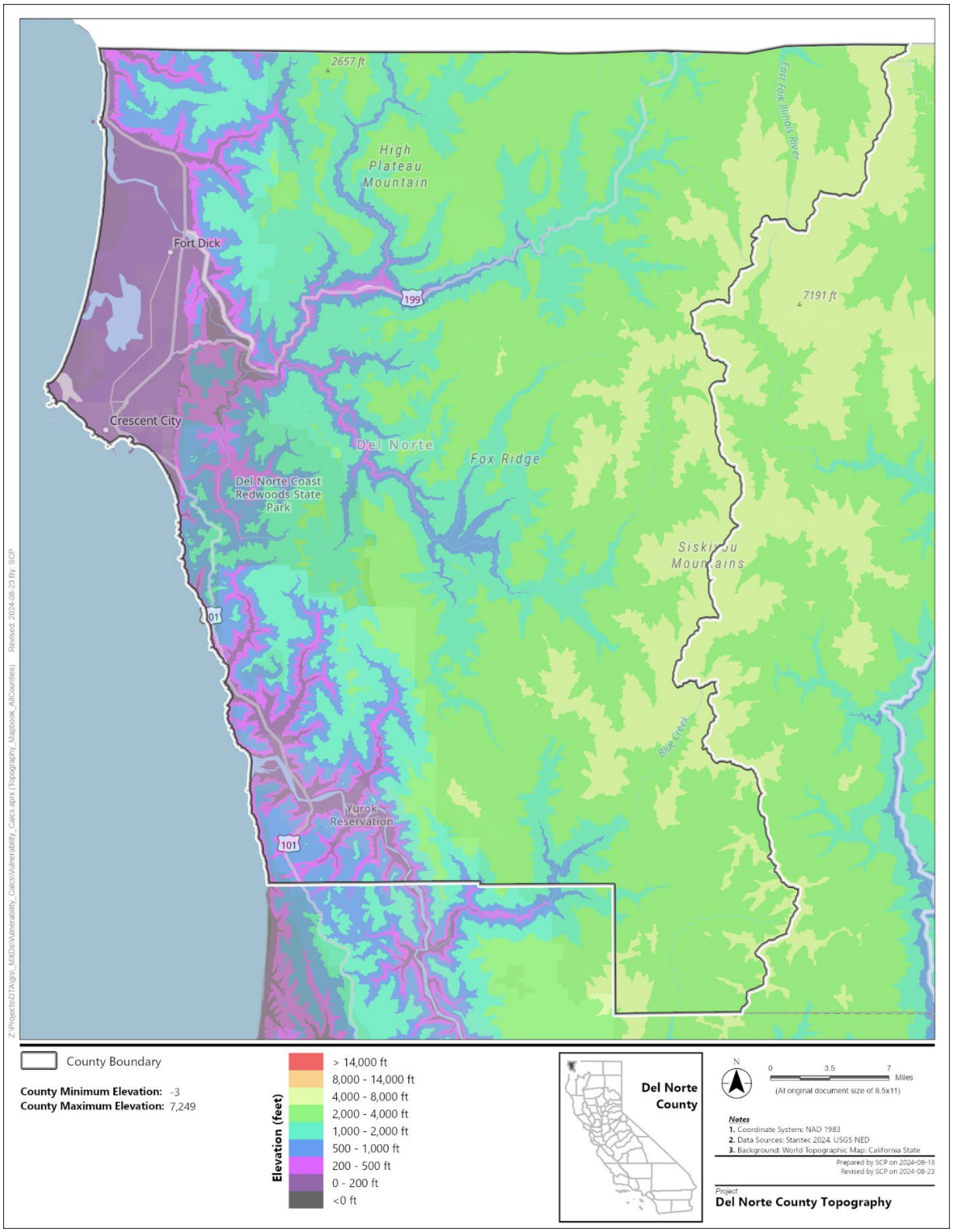


Figure 1-2. Topography of Del Norte County

Land Use

The County is largely forest land owned by USFS, the U.S. National Park Service, California State Parks and the Green Diamond Resource Company, a large timber company, with small sections of agricultural land and rural towns as shown in Figure 1-3. Agriculture occurs primarily in the Smith River Plain Groundwater Basin region, where the majority of farmland is categorized as croplands for hay production and flower bulbs (DWR 2022). The County's leading commodities for 2023 were timber, dairy, and miscellaneous horticultural products (Del Norte County 2023). Around two-thirds of the land area is managed by USFS (BLM 2024).

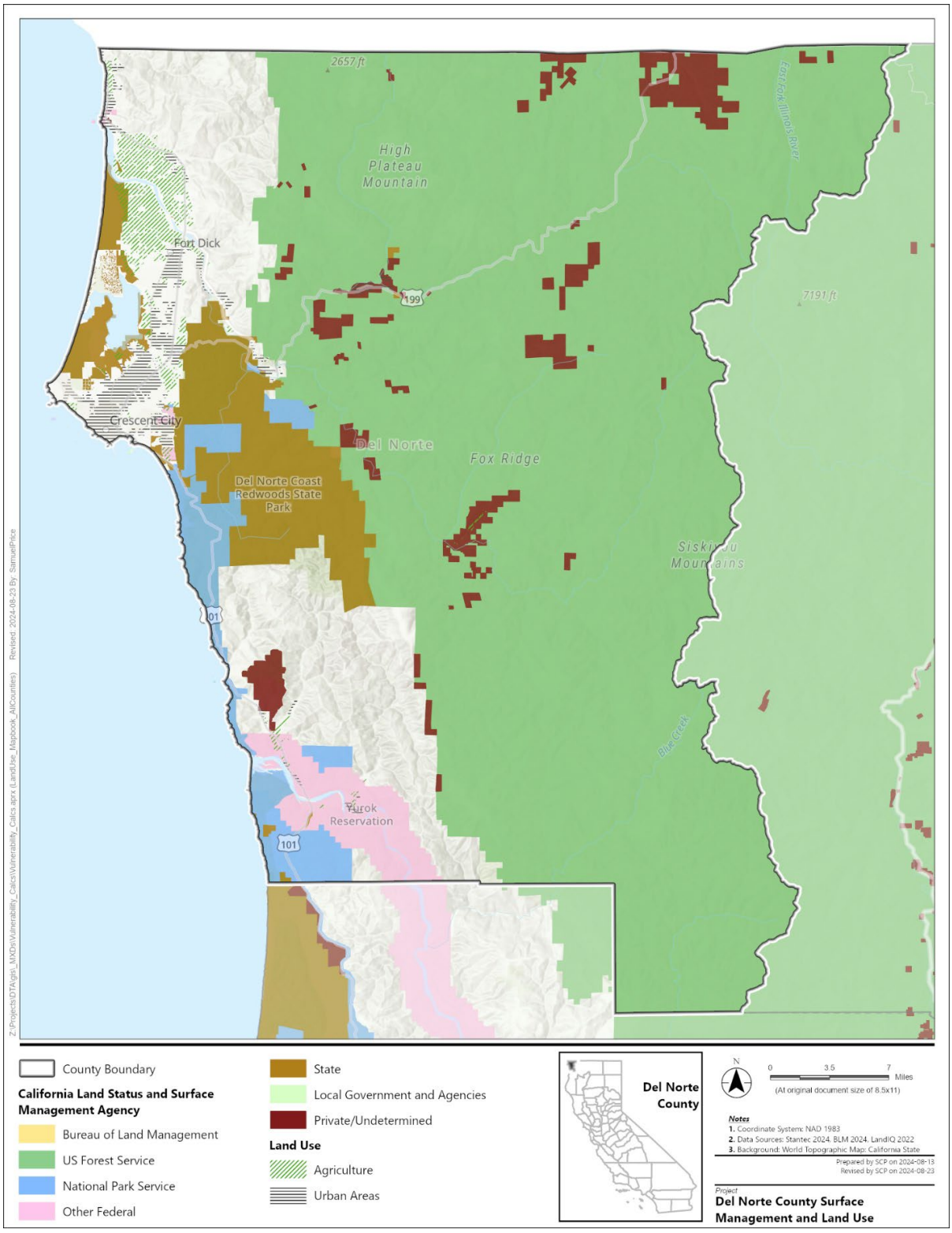


Figure 1-3. Land Use within Del Norte County

Geology

Major features within the County include the Coast Range, Klamath Mountains, Smith River Plain Groundwater Basin and Lower Klamath River Valley Groundwater Basin. The Smith River Plain is an emerged low-relief marine terrace. The surface of the plain is comprised of sand dunes, floodplain deposits, unconsolidated river terrace deposits, and surface exposures of the marine Battery Formation. Underlying the terrace deposits are the marine Battery Formation and the St. George Formation. Beneath the St. George Formation is basement rock of the Jurassic-Cretaceous Franciscan Complex (DWR 2004b). The Lower Klamath River Valley Groundwater Basin consists of Quaternary alluvial deposits, terrace deposits, and dune and beach sand deposits from the Klamath River and its tributaries. The basin is bounded on all sides by the Franciscan Formation (DWR 2004a).

1.4.3 Water Landscape: Supply, Use, and Management

Water supplies, water uses, water management actions and additional details on groundwater are described below.

Water Supplies:

- **Groundwater:** Groundwater represents the primary water supply resource for many of the rural communities in the County, accounting for 35 percent of the County's overall water supply from 2005 through 2010 (Del Norte County 2019). The region includes two groundwater basins, the Smith River Plain Basin and the Lower Klamath River Basin (DWR 2024a). The amount of groundwater varies with precipitation, infiltration, and annual withdrawals (Del Norte County 2019). The remainder of the groundwater resources include fractured rock regions, whose supply is dependent on precipitation.
- **Surface Water:** Surface water is the other major source of water supply, with the Smith River and the Klamath River watersheds being the primary sources. Surface water in the County is extremely dependent on precipitation and atmospheric conditions (Del Norte County 2019).

Water Uses:

- **Agriculture:** Agriculture in the County includes cropland, pastureland and woodland (USDA 2022). Key crops include nursery, greenhouse, floriculture, and hay (USDA 2022).
- **Municipal and Domestic:** The County has 32 public water systems, primarily serving community and noncommunity populations (State Water Board 2020). In addition, some of the 32 public water systems include vacation homes, recreational resorts, and campgrounds. There are many community services districts (CSD) within Del Norte County, including Smith River CSD, Gasquet CSD, Big Rock CSD, Redwood Park CSD, HRC CSD, and Klamath CSD, that provide users with safe and reliable drinking water sources. Additionally, the City of Crescent City is the largest single provider of public water in the County.
- **Industrial:** Industrial water uses in the County include the Rowdy Creek Fish Hatchery.
- **Drought Preparedness:** The County has a Hazard Mitigation Plan that specifies hazards, vulnerability and issues related to drought.

Groundwater Detail

The County contains two Bulletin 118 Subbasins: Smith River Plain Basin (DWR Basin Number 1-001) and the majority of the Lower Klamath River Valley Basin (DWR Basin Number 1-014). Analysis completed by DWR to support implementation of the Sustainable Groundwater Management Act (SGMA) classified both basins as very low priority basins. The remainder of County groundwater supplies are in fractured rock regions (DWR 2024b). Only a small portion of Prairie Creek Area Basin (DWR Basin Number 1-025) is located within the County and is owned by the State of California, or Green Diamond (timberland land), thus this basin will not be evaluated in this DRP.

Passed in 2014, SGMA represents a statewide framework to protect groundwater resources in alluvial groundwater basins over the long term. SGMA led local public agencies[2], pursuant to CWC Section 10723, to form groundwater sustainability agencies (GSA) in high- and medium priority basins. Formation of a GSA in low and very low priority basins is voluntary. GSAs in high- and medium- priority basins are required to develop a groundwater sustainability plan (GSP) to achieve sustainable groundwater management within 20 years. GSAs subject to SGMA regulations are required to operate in perpetuity unless its groundwater basin's priority status is amended to low or very low priority by the State. The County includes two alluvial groundwater basins: Smith River Plain, and Lower Klamath River Valley. While all are classified as very low priority, the Smith River Plain was originally designated as a medium priority basin under SGMA. It was redesignated to very low status as part of the Phase 2, 2019 Basin Prioritization process by DWR.

1.4.4 Water Systems Within Del Norte County's Jurisdiction

California Water Code Section 10609.70(b) requires that the County DRP include domestic wells and SSWSs. Figure 1-4 shows the location of domestic wells and SSWSs within the County, and Table 1-2 summarizes how many domestic wells and SSWSs are in the Bulletin 118 basins and fractured rock areas. The total number of SSWSs in the County as reported by County staff differs from the information available from the State. The WSVE Tool currently shows no documented SSWSs within the County. Two SSWSs were identified by County Staff and incorporated into Figure 1-4. This discrepancy likely reflects differences in local and state data sources. In addition, the figure and table show domestic wells within adjacent counties that share groundwater basins with the County.

[2] CWC Section 10721(n)

Table 1-2. Summary of Groundwater Basins, Domestic Wells, and State Small Water Systems in Del Norte County

Bulletin 118 Basin ID	Groundwater Basin Name	SGMA Priority	Domestic Wells Drilled After 1977[1]	Domestic Wells Drilled Before 1977[1]	SSWSs	Domestic Wells in Basin but Outside County
1-001	Smith River Plain	Very Low	1,033	273	1	0
1-014	Lower Klamath River Valley	Very Low	25	13	1	0
N/A	Fractured Rock Aquifer Wells	N/A	131	83	0	N/A

[1] Information presented in this table and figure are based on well completion reports. Geographic information on well completion reports may be inaccurate and/or place the well not at the actual well location. As a result, the number of domestic wells may be underestimated, and the placement of wells may not reflect actual locations.

Key:
N/A: Not applicable
SSWS: State Small Water System

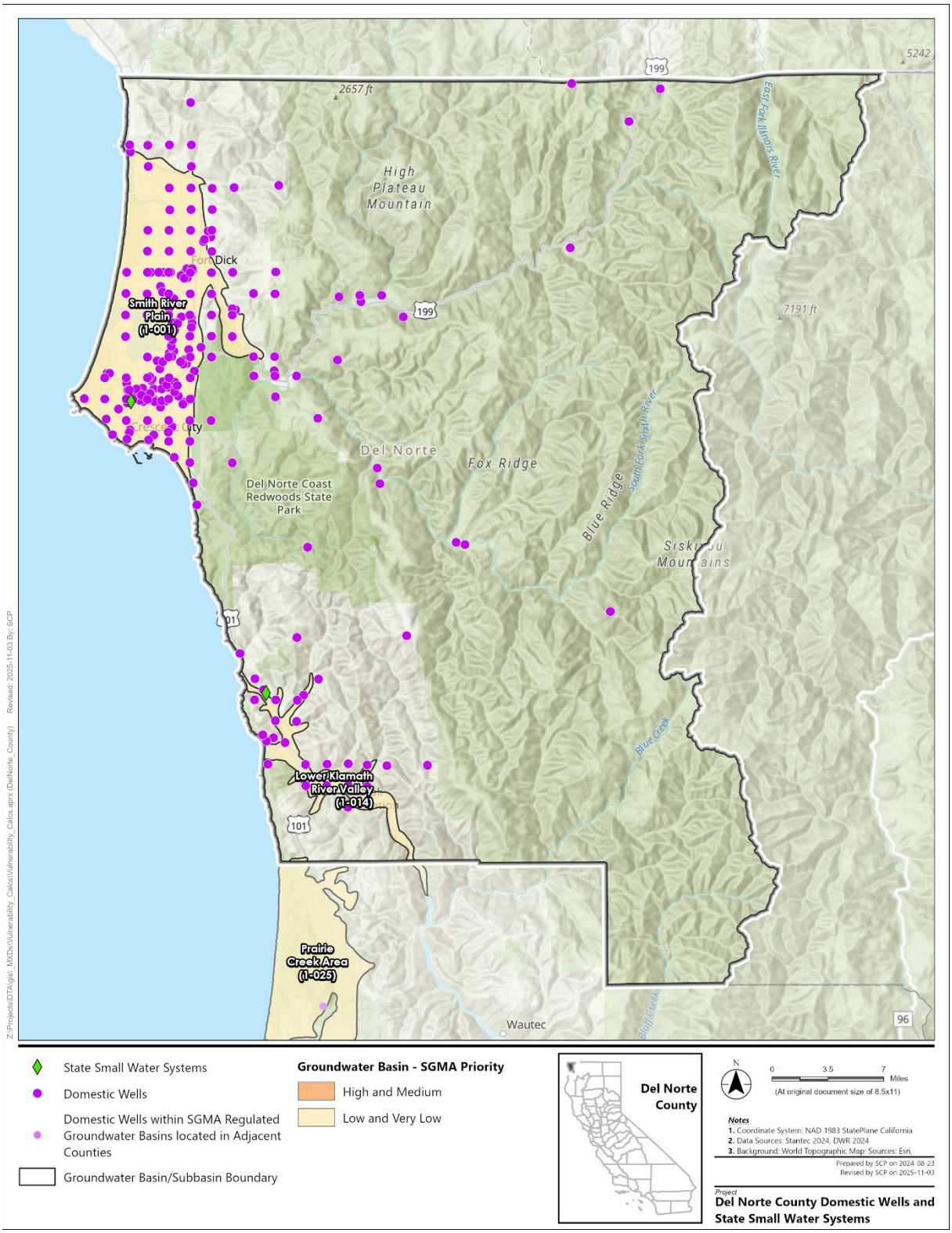


Figure 1-4. Locations of Domestic Wells and State Small Water Systems in Del Norte County

2.0 County Drought and Water Shortage Task Force

Passage of SB552 requires counties to establish a standing county drought and water shortage task force to facilitate drought and water shortage preparedness for SSWS and domestic wells within the county's jurisdiction. This section describes the legislative direction, purpose, goals, and decision-making process associated with the County's response to this requirement.

2.1 Legislative Direction

In September 2021, SB 552 (Hertzberg) was enacted to address, among other things, water shortage risks faced by small water suppliers and domestic well users during drought and water shortage events. Under SB 552, counties are required to prepare a County DRP to achieve meaningful and long-term improvements in water resilience for domestic well and SSWS communities.

Passage of SB 552 mandates establishment of a standing Task Force to cultivate the continued practices of drought planning and improving long-term water resilience. Composition of the Task Force is guided by CWC Section 10609.70 (a)(1) and (2):

> *(a)(1) A county shall establish a standing county drought and water shortage task force to facilitate drought and water shortage preparedness for state small water systems and domestic wells within the county's jurisdiction, and shall invite representatives from the state and other local governments, including groundwater sustainability agencies, and community-based organizations, local water suppliers, and local residents, to participate in the task force.*
>
> *(2) In lieu of the task force required by paragraph (1), a county may establish an alternative process that facilitates drought and water shortage preparedness for state small water systems and domestic wells within the county's jurisdiction. The alternative process shall provide opportunities for coordinating and communicating with the state and other local governments, community-based organizations, local water suppliers, and local residents on a regular basis and during drought or water shortage emergencies.*

The County Task Force has been established pursuant to CWC Section 1609.70(a)(1). The composition, roles, and responsibilities defined in this charter are intended to fulfill the County's obligations under SB 552.

2.2 Organizational Structure

The Task Force is a community- and agency-based body focused on water shortage vulnerabilities and the water supply reliability of domestic wells and SSWS communities. Figure 2-1 illustrates the decision-making framework of the Task Force in relation to the County Board of Supervisors and County staff.

2.2.1 County Board of Supervisors

The County Board of Supervisors adopts the County DRP and approves implementation actions requiring board-level decisions and funding actions. The Board of Supervisors also reviews recommendations provided by the Project Coordination Team (PCT) and the Task Force.

2.2.2 Project Coordination Team

The PCT is comprised of County offices and departments responsible for preparation, revision, and implementation of the County DRP. The PCT is led by the County's CDD. Additional participating County departments include the County EHD and the County Office of Emergency Services (OES).

Unless otherwise agreed upon, County CDD leads engagement efforts with the County Board of Supervisors. The PCT may be supported by additional entities as needed.

The PCT responsibilities include:

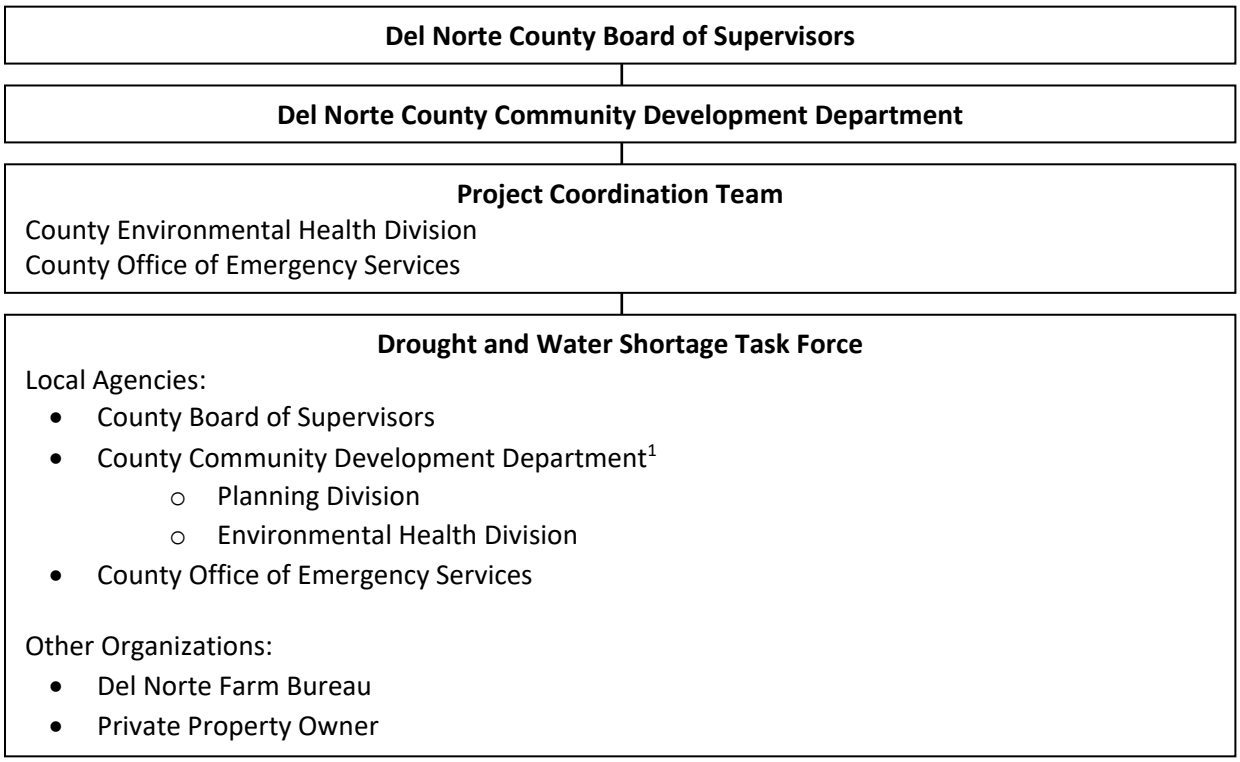
- Lead and manage preparation and revision of the County DRP
- Convene, collaborate, and respond to informational needs of the Task Force with respect to the preparation, revision, implementation, and adoption of the County DRP
- Support the Task Force in the conduct of annual and emergency meetings
- Coordinate revision and adoption of the County DRP with the Board of Supervisors consistent with County policies and regulations
- Lead and coordinate implementation of the County DRP by County agencies and other partner agencies
- In collaboration with the Task Force, lead communication and engagement activities with County DRP interested parties
- Evaluate and accept non-County parties as PCT members where such parties serve as implementation partners of the County DRP

2.2.3 Drought and Water Shortage Task Force

The Task Force, as shown in Figure 2-1, is a standing body established pursuant to CWC Section 10609.70(a)(1) and formed administratively by the PCT. The Task Force is an advisory and consultative entity to the Board of Supervisors and the PCT.

Task Force members serve as representatives to one or more of the following interest groups:

- State and other local government entities, including GSA
- Community-based organizations
- Local water suppliers
- Local residents, including operators of domestic wells and SSWSs



[1]Also serving as the Del Norte County GSA

Figure 2-1. Structure of Parties Involved in Del Norte County Drought and Water Shortage Task Force

2.2.3.1 Task Force Roles and Responsibilities

The roles and responsibilities of the Task Force are as follows:

- Facilitate drought and water shortage preparedness for domestic wells and SSWSs within the County's jurisdiction.
- Facilitate regular coordination and communication among staff of relevant County departments, local water agencies, local water suppliers, GSAs, and others representing the concerns of domestic wells and SSWS users.
- Develop a County DRP that supports drought and water shortage preparedness and responsiveness for domestic wells and SSWSs within the County's jurisdiction.
- Support implementation and periodic revision of the County DRP.

2.3 Communication and Engagement

To facilitate communication and collaboration both on a regular basis and during droughts or water shortage emergencies, the County CDD will implement a series of communication and engagement activities. These activities provide opportunities for broad community awareness among County DRP interested parties. The communities and engagement activities to be completed by County staff are:

- Website: County CDD has established a page/section to support distribution and dissemination of information associated with the County DRP. The page includes general information that contains:
    - Background on SB 552, related links such as:
        - DWR County Drought Resilience Assistance Planning Program
        - DWR Water Shortage Vulnerability Tool
    - Meeting materials and summaries, information materials, and draft documents
    - Contact information of the County's project manager (email)

3.0 Drought and Water Shortage Risk Assessment

A drought and water shortage risk assessment (referred to as a risk assessment) was prepared as part of the development of this County DRP as directed in CWC Section 10609.70(b). This risk assessment evaluated how physical and social hazards impact water shortage vulnerability for the County's domestic well, and SSWS, and other community assets. The risk assessment results informed response plans with short-term actions to employ when a water supply shortage occurs and long-term mitigation strategies and actions that reduce the vulnerability to water shortages. This chapter presents the risk assessment results for Del Norte County.

The risk assessment presented in this County DRP does not replace the regulatory requirements of the Federal Emergency Management Agency (FEMA).

3.1 Terminology

This County DRP adapted the following definitions from the FEMA *Local Mitigation Planning Handbook* (FEMA 2013) within the context of drought and water shortage planning:

- **Community Assets:** The people, structures, facilities, and systems that have value to the community. The minimum assets considered as part of the SB 552 plan include domestic wells, SSWSs, and populations relying on those water supplies.
- **Hazard:** A source of harm or difficulty created by a meteorological, environmental, geological, hydrological, or other event conditions. In the context of SB 552, hazards are the natural, human-made, and social processes that can lead to water shortages in the County.
- **Impact:** The consequences or effects of a hazard related to drought and water shortages on the community and its assets.
- **Risk:** The potential for damage, loss, or other impacts (e.g., water shortage) created by the interaction of natural hazards with community assets and their physical and social vulnerabilities.
- **Risk Assessment:** Product or process that collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making.
- **Vulnerability:** Characteristics of community assets or populations that make them susceptible to damage from a given hazard. It includes both physical vulnerability and social vulnerability.

3.2 Risk Assessment Methodology

The nature and severity of hazards that can cause water shortages vary at regional and local scales due to differences in conditions such as precipitation patterns, groundwater levels, topography, geology, infrastructure, and regulatory frameworks. Communities lacking access to reliable water sources are most vulnerable to water shortage caused by such hazards. To address this, a thorough risk assessment was completed that considered many physical and social hazard indicators. The results and findings of that risk assessment were then used by the County and Task Force to develop actions and strategies to address water shortages (see Chapters 4 and 5).

The risk assessment was completed following the four steps outlined below:

1. **Describe Major Hazards in the County:** Drought, climate change, and water quality hazards were summarized and described.
2. **Complete the Draft Risk Assessment using the DWR Water Shortage Vulnerability Explorer Tool:** The DWR Water Shortage Vulnerability Explorer (WSVE) Tool (https://arcg.is/0jT94f2) was used to (a) identify areas within the County where domestic wells and SSWSs are vulnerable to water supply shortages, and (b) characterize the hazards driving vulnerability to develop a draft risk assessment. The County and the Task Force reviewed the draft risk assessment, provided feedback, and identified data gaps. Additional details on the WSVE Tool and how it was applied in the risk assessment is included below.
3. **Revise the Draft Risk Assessment:** County and Task Force feedback on the draft risk assessment was used to develop a revised risk assessment.
4. **Incorporate Results of Revised Risk Assessment into the County DRP:** Information from the revised risk assessment was included in the County DRP (Section 3.4). Findings from the revised risk assessment were used by the County and the Task Force to develop short-term actions and long-term strategies to improve water supply sustainability (Chapters 4 and 5).

Developed by DWR in collaboration with the County Drought Advisory Group (CDAG), the WSVE Tool is an online geospatial application that quantifies water shortage vulnerability using physical (Table 3-1) and social (Table 3-2) indicators. These indicators were selected by DWR and the CDAG to reflect the hazards that could make a domestic well or SSWS vulnerable to water supply shortage.

The WSVE Tool calculates both a physical vulnerability score and a total social vulnerability score, each combining the associated individual indicators. The process used by the WSVE Tool to calculate those total scores is summarized below.

- The physical vulnerability score was calculated at the Public Land Survey Section[3] (PLSS) scale by normalizing the indicator value between 0 and 1, with 1 representing the highest possible vulnerability. Normalized scores were multiplied by a weighting factor from 1 to 5 that was assigned by DWR and CDAG to capture how some indicators contribute more to water shortage vulnerability than others.
- The social vulnerability score was calculated at the Census Block Group[4] (CBG) scale by normalizing the indicator value between 0 and 1 and summing the values together without additional weighting.

DWR periodically revises the WSVE Tool to incorporate improved data and/or updated methodology. The 2024 methodology was used and accessed on July 2024to complete the risk assessment for this County DRP. The detailed methodology that describes the water shortage indicators and corresponding values, data sources, and the weighting factors is available on the WSVE Tool website.

[3] A Public Land Survey Section is a geographic delineation of an area equivalent to 1 square mile.
[4] A Census Block Group is a geographic unit with a population between 600 and 3,000 people that are the smallest geographical unit for which the U.S. Census Bureau publishes data collected from a fraction of households.

Table 3-1. Water Shortage Vulnerability Explorer Indicators Used in the Development of Physical Vulnerability Score

Indicator Name[1]	Indicator Description
Climate Change	
Absolute Projected Temperature Change (RC1a)	Projected change in max temperatures by mid-century
Sea Level Rise Impacts Through Saltwater Intrusion into Coastal Aquifers (RC1b)	Spatial extent of projected 1-meter sea level rise by 2040 into coastal aquifers
Rescaled Climate Change Projections of Wildfire by Mid-Century (RC1c)	Projected area burned by 2035–2064
Current Environmental Conditions and Events	
Current Dry Year (RC2a)	If 2024 precipitation was less than 70% of normal
Multiple Dry Years (RC2aa)	Count of dry years within the last 5 years
USFS Wildfire Risk (RC2b)	USFS Wildfire Hazard Potential
Fractured Rock Areas (RC2c)	Fractured rock basin within the PLSS
State Water Board 2024 Water Quality Risk (RC2i)	SAFER Needs Assessment 2024 water quality composite score
Subsidence (RC2d)	Amount of subsidence as measured by remote sensing
Presence of Saltwater Intrusion (RC2e)	Presence of saltwater intrusion into coastal aquifer
Overdrafted Basin (RC2f)	SGMA critically overdrafted groundwater basin
Groundwater Decline Levels (RC2g)	Amount of declining groundwater levels between 2003 and 2023
Amount of Irrigated Agriculture (RC2j)	Proportion of irrigated agriculture in PLSS
Infrastructure Susceptibility	
Domestic Well Susceptibility in Basins (RC3a)	Dry well susceptibility
Fractured Rock Area Competing Demand (RC3c)	Density of well completion reports
Record of Shortage	
Observed Household Shortage RC5a)	Presence of 1 or more households with reported outages in PLSS

Key:
[1] Abbreviations are included next to Indicator Name (i.e., "RC1a") for clarity to underlying methodology
PLSS = Public Land Survey Section
SAFER = Safe and Affordable Funding for Equity and Resilience Program
SGMA = Sustainable Groundwater Management Act
USFS = U.S. Forest Service

Table 3-2. Water Shortage Vulnerability Explorer Indicators Used in the Development of Social Vulnerability Score

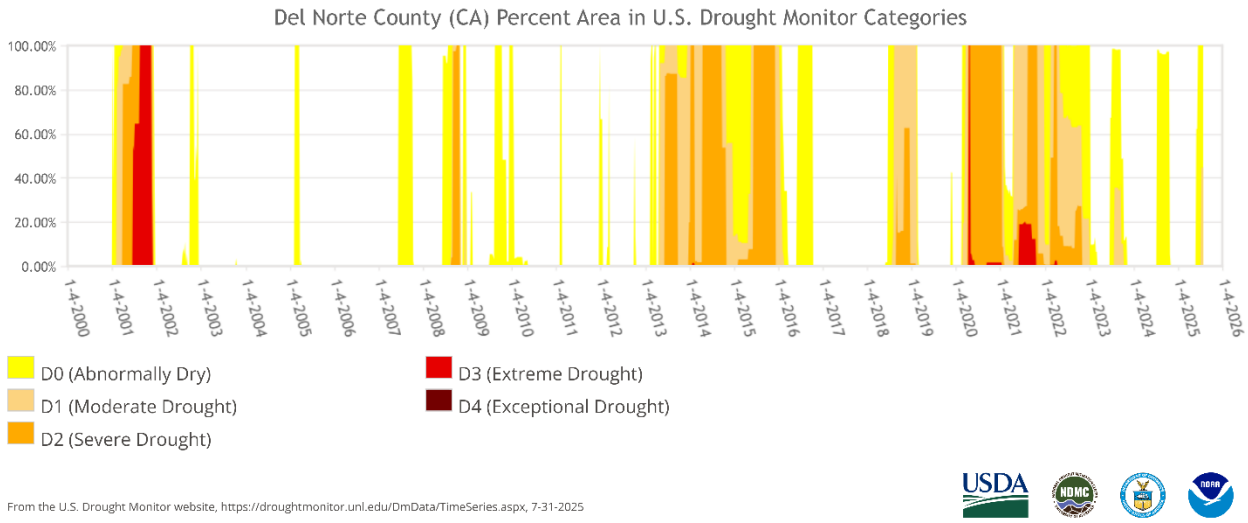
Indicator Name	Indicator Description
Socioeconomic Status	
Poverty Level	Percent of persons below the poverty level
Unemployment	Percent of persons aged 16 years of age or older that are unemployed
Per Capita Income	Per capita income
Language and Education	
Education Attainment	Percent of persons without a high school diploma
English Language Proficiency	Percent of persons who speak little to no English
Demographics	
Elderly Population	Percent of persons 65 years of age or older
Non-Adult Population	Percent of persons 17 years of age or younger
Minority Population	Percent of persons that are in a minority population
Disability	Percent of persons 5 years of age or older with a disability
Single-Parent Households	Percent of single-parent households
Housing and Transportation	
Multi-Unit-Housed Population	Percent of persons living in a multi-unit structure
Mobile Home-Housed Population	Percent of persons living in a mobile home
Crowded Conditions	Percent of persons living in conditions with more than 1 person per room
No Vehicle Access	Percent of households with no vehicle available

3.3 Hazards in Del Norte County

This section summarizes the recent drought, projected climate change, current water quality, and groundwater hazards in the County. Section 3.4 provides more detail on the vulnerabilities related to these hazards.

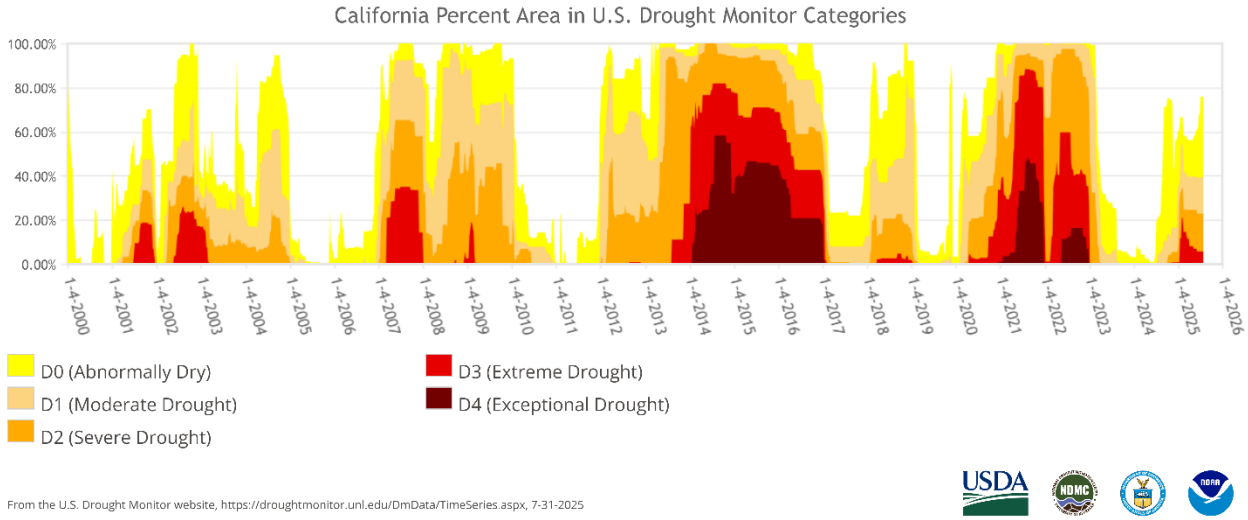
3.3.1 Drought

Since 2000, the County has experienced what the U.S. Drought Monitor categorizes as abnormally dry, moderate, and severe drought in multiple water years. Extreme drought conditions are limited, with one substantive episode occurring in 2001 (see Figure 3-1). As with statewide drought conditions (See Figure 3-2), the County experiences cyclical drought conditions, but with lower-grade drought types and shorter durations.



Source: National Drought Mitigation Center 2026

Figure 3-1. Occurrence of Drought in Del Norte County



Source: National Drought Mitigation Center 2026

Figure 3-2. Occurrence of Drought in California

3.3.2 Climate Change

According to California's Fourth Climate Change Assessment (National Drought Mitigation Center 2026), climate change has increased both average temperatures and the frequency and intensity of heat waves or extreme heat events. While global temperature increases are between 1.8 and 3.6 degrees Fahrenheit (°F), local observed increases that affect neighborhoods and ecosystems are more variable and often of greater magnitude. The North Coast Region Report subsection of the California's Fourth Climate Change Assessment predicts changes over the 21st century to include higher average temperatures with average annual maximum temperatures increasing by 5 to 9°F throughout the region through the end of the century. (Grantham 2018). A Fifth Climate Change Assessment is under

development by the Governor's Office of Land Use and Climate Innovation and is scheduled for completion in 2026.

Droughts in California are triggered by a lack of large winter storms, and water shortages are further exacerbated by high temperatures that increase the evaporative loss of water from soils, rivers, canals, and reservoirs. Drought conditions, particularly when persisting for several years, can cause mental and physical stress in people, reduce the number of workable farm-labor days, and lead to deteriorated air and water quality (Greene 2018; Barreau et al. 2017).

Historical data show that daily precipitation extremes have intensified in most areas of the country, including California. As the atmosphere continues to warm, extreme precipitation events could become more frequent as storms can hold about 6 to 7 percent more water for each degree Celsius of warming. Climate model simulations that consider such effects suggest that this trend will continue. Simulations of future climate indicate only modest changes in annual precipitation accumulation with some shifts in the seasonality of precipitation that may be relevant for water management, namely, less precipitation from November through January, and possibly more from February through May.

Anthropogenic climate change has contributed to the increase in areas burned by wildfires in the American West. Specifically, rising temperatures and increased periodic droughts increase the likelihood of wildfires. Wildfires can damage infrastructure and cause water quality issues, including those discussed in Section 3.3.3.

3.3.3 Water Quality

Within the larger North Coast Region, the North Coast Regional Water Quality Control Board's (NCRWQCB) Basin plan states that water quality within the North Coast Region is sufficient to support, and in some cases enhance the beneficial uses assigned to waterbodies (NCRWQCB 2018). Specifically, within the County, there are minimal water quality concerns regarding its surface and groundwater resources.

Surface Water:

Pesticide contamination has been identified in surface waters draining agricultural areas, particularly from lily bulb farming in the Smith River Plain. These contaminants may pose risks to nearby domestic wells and small water systems if they infiltrate groundwater. The North Coast Regional Water Board is developing a General Waste Discharge Requirements for Commercial Lily Bulb Operations in the Smith River Plan (Lily Bulb Order). Additional information on the Lily Bulb Order is available here: https://www.waterboards.ca.gov/northcoast/water_issues/programs/agricultural_lands/lily/.

In addition, the County has a high vulnerability to wildfires due to extensive forested regions. In the event of a wildfire, surface water resources may become contaminated by ash, debris, and absorption during runoff.

Groundwater:

The Smith River Plain Basin has experienced increased proportions of sodium and chloride concentrations in the southern half of the basin (DWR 2004b), representing a potential water quality concern. Additionally, locally high levels of chloride, calcium, total dissolved solids and iron were found throughout the Smith River Plain Basin.

3.4 Risk Assessment Results

This section summarizes the risk assessment results, including the County's total physical and social vulnerability scores, followed by discussions of the individual indicators driving physical vulnerability. This information was used to identify the regions of water supply shortage vulnerability described in Section 3.5.

3.4.1 Physical Vulnerability and Social Vulnerability Scores

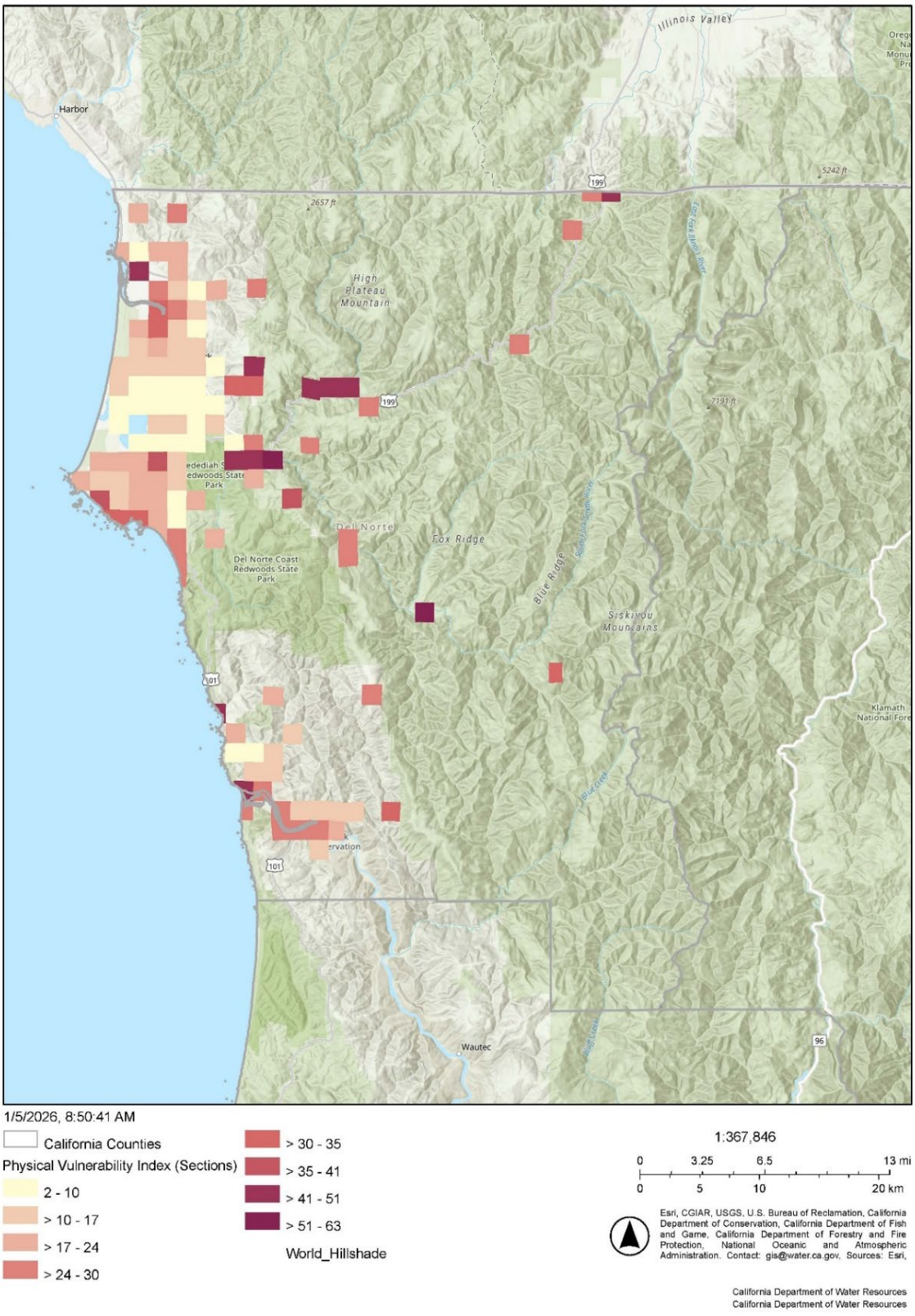
Total physical vulnerability scores within the County are shown in Figure 3-3, with darker shaded areas (or PLSSs) indicating higher physical vulnerability scores. If an area is not shaded, it means there are no domestic wells and/or SSWSs within the PLSS. The northwestern portion of the County shows the highest density of physical vulnerability. However, the area stretching from the California–Oregon State border to Smith River was subsequently reviewed by County staff and confirmed that this area is not within fractured rock and contains fewer domestic wells than originally identified by the WSVE Tool—suggesting a lower actual vulnerability than initially mapped. Therefore, this area was not included as an area with water shortage vulnerability in the risk assessment.

Coastal areas generally exhibit higher vulnerability due to saltwater intrusion and sea level rise, though most of these areas are served by public water systems. In the interior, rural parts of the County show dispersed areas of high vulnerability, primarily due to domestic wells located in fractured rock formations and elevated wildfire hazard. In the southwestern portion of the County near Klamath, vulnerability is significantly higher than surrounding areas due to a combination of wildfire hazard, saltwater intrusion, and two documented instances of household water outages. Specifically, in the two Bulletin 118 basins—the Smith River Plain and Lower Klamath River—prominent physical vulnerabilities include saltwater intrusion, subsidence, and water quality risks. The Smith River Plain Basin also has higher agricultural uses that can increase physical vulnerability.

Figure 3-4 displays the intersection of physical vulnerability and location of domestic wells and SSWSs within the County. A darker shaded area indicates a higher presence of domestic wells within an area with high physical vulnerability. A blue area has a higher physical vulnerability but minimal domestic wells or SSWSs, and an orange area has a high presence of domestic wells but low physical vulnerability. This figure shows where short-term actions and long-term mitigation strategies are most likely to be needed because of the vulnerability to water supply shortages. The areas with high physical vulnerability and a higher density of domestic wells include Smith River, Crescent City and Gasquet; however all areas other than Crescent City have public water available to them. Similarly, within the two Bulletin 118 basins—Smith River Plain and Lower Klamath River—there are areas of high physical vulnerability and a higher density of domestic wells. There are many isolated domestic wells with high physical vulnerability as well. Areas north of Crescent City stretching north to Fort Dick have a lower density of domestic wells, but a higher physical vulnerability to water supply shortage compared to other parts of the County.

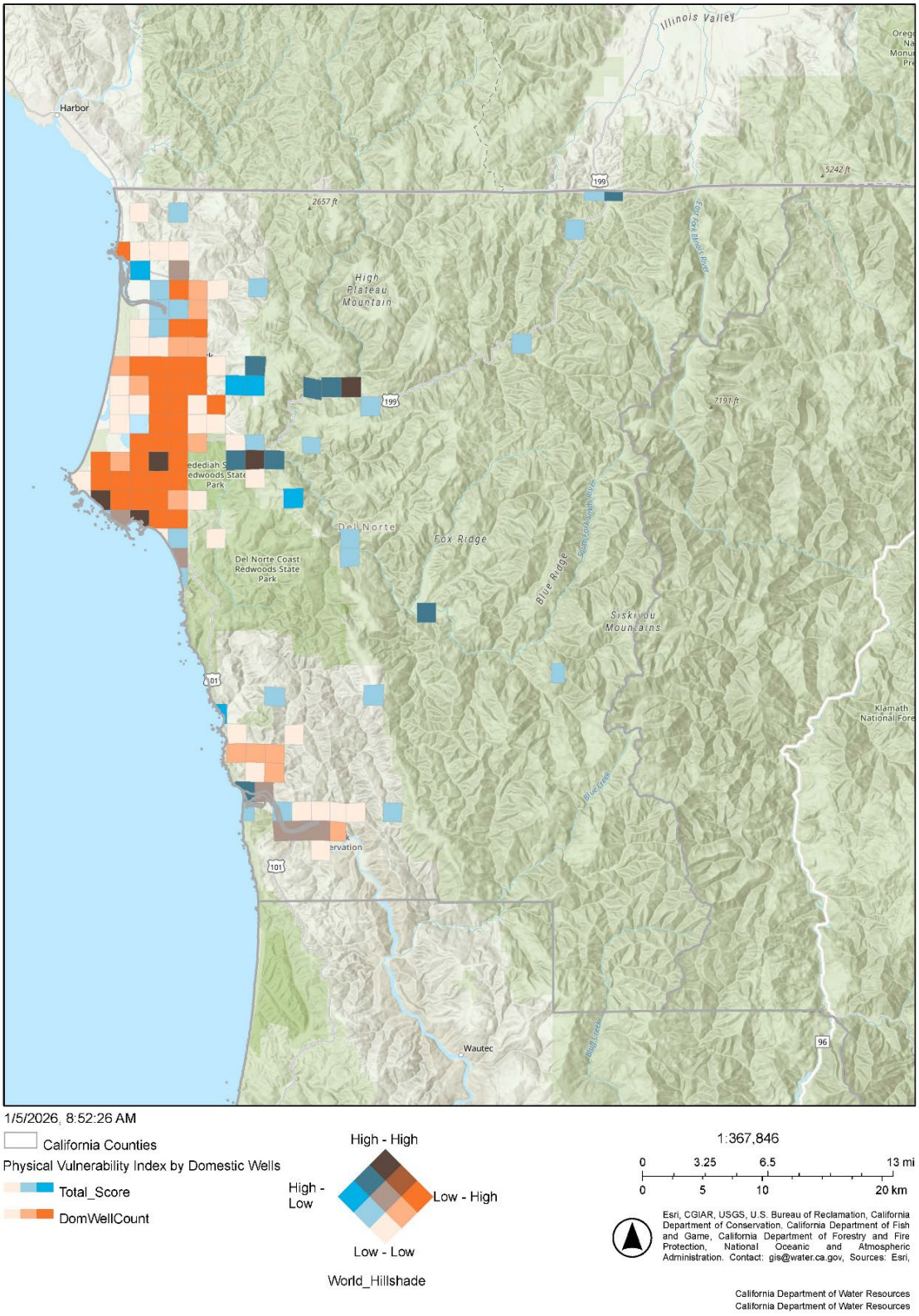
Social vulnerability is also an important factor in assessing the risk of water supply shortage and need for mitigation through short-term actions and long-term strategies. Total social vulnerability scores in Del Norte County are depicted in Figure 3-5, with darker shaded areas indicating higher vulnerabilities. Comparing the social vulnerability scores in Figure 3-5 with the physical vulnerability scores in Figure 3-4 helps characterize how social vulnerability may overlap with the physical vulnerability of domestic wells and SSWSs. The areas with high physical vulnerability and domestic well presence in the Crescent City area have high to medium-high social vulnerability scores. The north-central part of the County, which

also has high physical vulnerability and domestic well presence near Smith River, has medium social vulnerability. Lastly, areas of high vulnerability dispersed throughout the central region of the County have social vulnerability scores ranging from medium-low to medium-high.



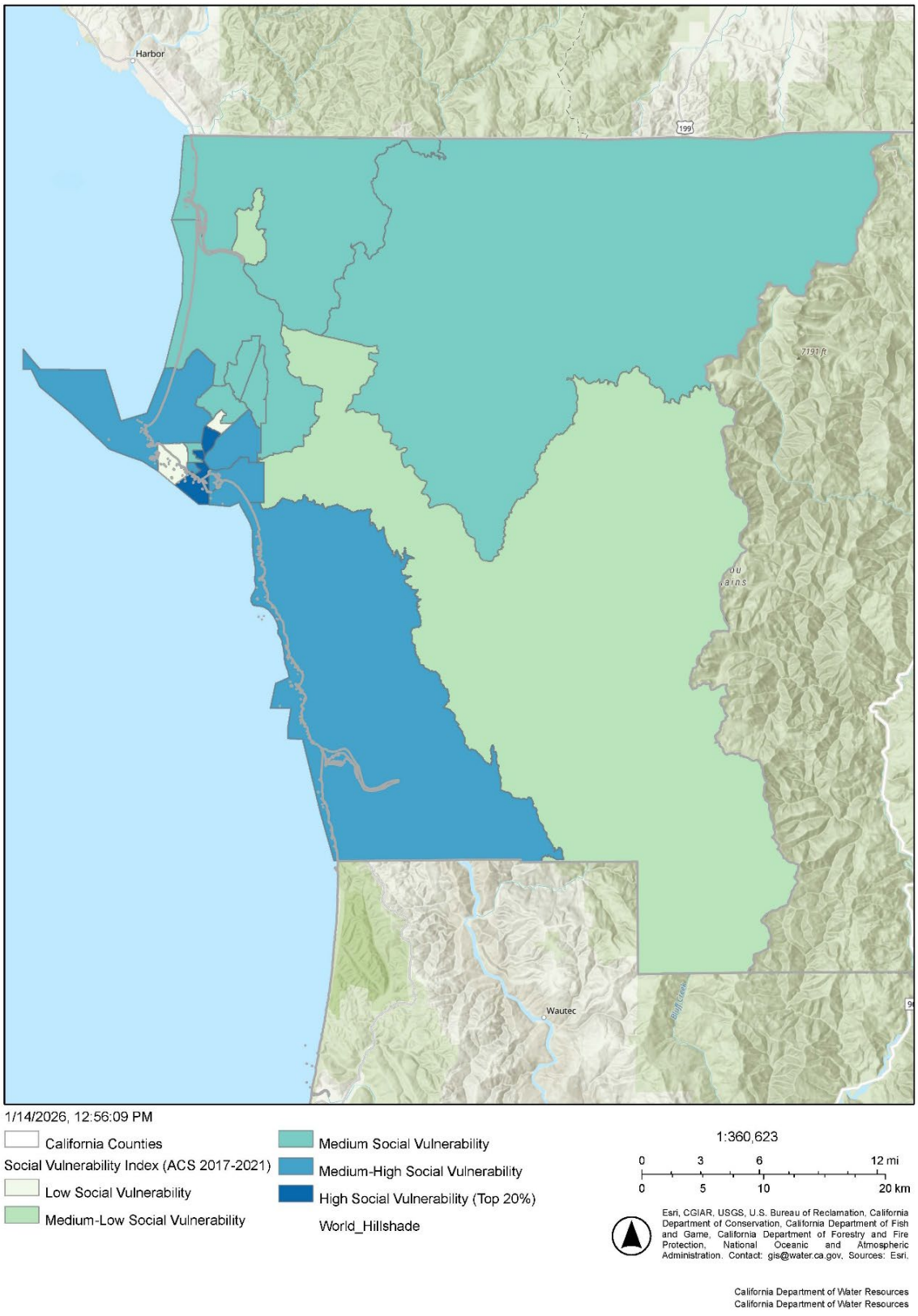
Source: DWR 2024b

Figure 3-3. Physical Vulnerability to Drought and Water Supply Shortage in Del Norte County



Source: DWR 2024b

Figure 3-4. Intersection of Physical Vulnerability and Density of Domestic Wells and State Small Water Systems in Del Norte County



Source: DWR 2024b

Figure 3-5. Social Vulnerability Scores by Census Block Group in Del Norte County

3.4.2 Physical Vulnerability Indicators

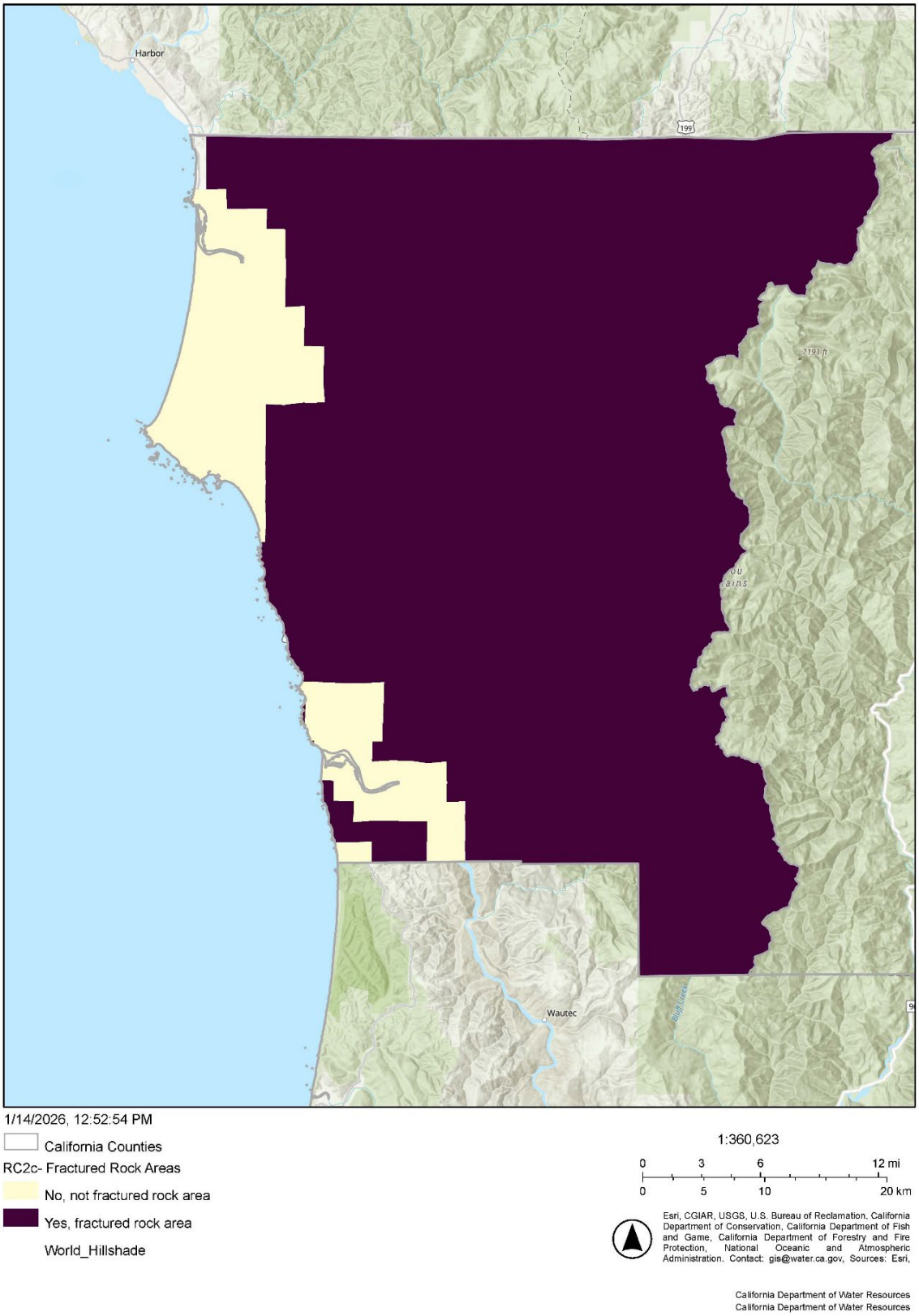
The risk assessment identifies areas where water shortage vulnerability is high where domestic wells and SSWSs reside. This section describes factors that are driving water shortage risk in greater detail. Identifying and characterizing these drivers of physical vulnerability help the County and the Task Force develop and implement effective short-term actions and long-term strategies.

Within the County, the primary indicators driving physical vulnerability are geology, wildfire risk, and water quality aquifer risk. Details on these three indicators are included below, and information on all physical vulnerability indicators is summarized in Table 3-3.

A large portion of the County is within a fractured rock area, as shown in Source: DWR 2024b
Figure 3-6Figure 3-6, water availability in fractured rock areas is more difficult to track and manage. Physical vulnerability was calculated using two separate equations: one for alluvial basins and one for fractured rock areas. PLSSs containing any fractured rock geology applied the fractured rock equation, which incorporated geology-specific indicators. These indicators were weighted during tool development with the CDAG. Because fractured rock aquifers are difficult to monitor directly, the competing demand indicator was developed as a proxy for competing demand, using the density of domestic wells in fractured rock areas to represent increased stress on water resources.

Another indicator driving water supply vulnerability in the County is exposure to wildfire hazards, as shown in Figure 3-7. Wildfires can damage or destroy natural infrastructure such as watersheds and natural reaches, as well as built infrastructure such as pipelines and reservoirs. This increases the vulnerability of water shortages for communities either because of the damage caused by wildfires or because of their impacts on water supplies. USFS data show that the majority of the eastern portion of the County is designated as a very high wildfire risk. Additionally, CAL FIRE data shows that the western portion of the County is designated as moderate to high risk (Figure 3-8). CalFire data was not incorporated into the physical vulnerability score; however, it was considered by the County and the Task Force because it is used more regularly by County staff.

Figure 3-9 shows the potential groundwater water quality risk in the County based on the 2024 State Water Resources Control Board Aquifer Risk assessment (State Water Board 2024). The map shows areas where domestic wells and SSWSs may be accessing groundwater that does not meet safe drinking water standards (maximum contaminant level or MCL). The Aquifer Risk Map methodology involves summarizing publicly available water quality data from previously sampled wells of a similar depth to domestic wells or SSWSs, since these systems are largely unregulated by the State and there is no comprehensive database of water-quality data available directly from these systems. Water quality data are summarized for each PLSS where data are available. Sections that do not contain a well with water quality data are assigned a score from the neighboring PLSS's source data (State Water Board 2024). Note that the information shown in Figure 3-9 does not reflect actual water quality conditions. The areas in red have a high risk of potential water quality issues in the future. These areas of high risk where domestic wells and SSWSs are present are found primarily within Crescent City and Smith River.



Source: DWR 2024b

Figure 3-6. Geology Indicator Showing Fractured Rock Area in Del Norte County

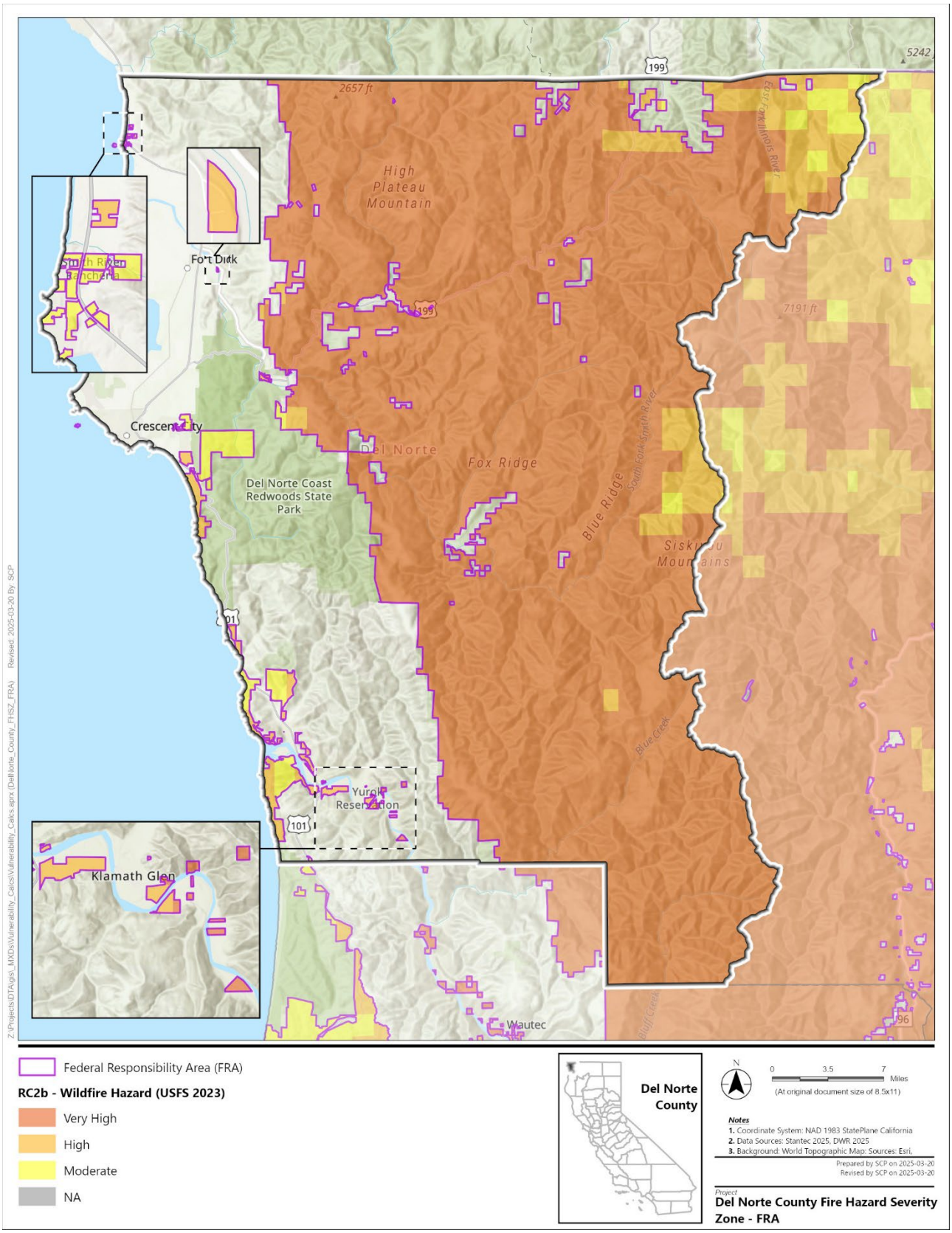


Figure 3-7. USFS Wildfire Hazard Indicator in Del Norte County

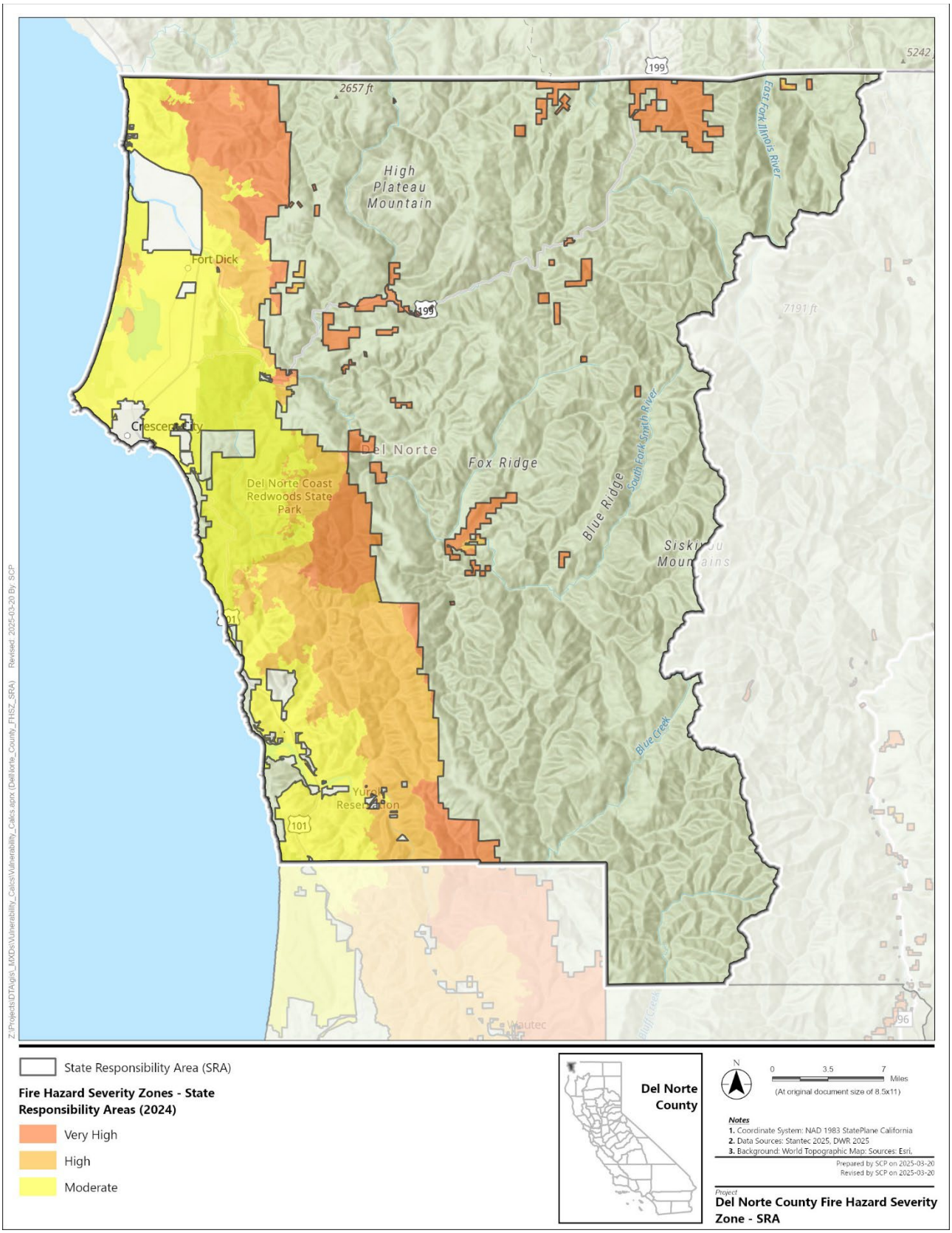
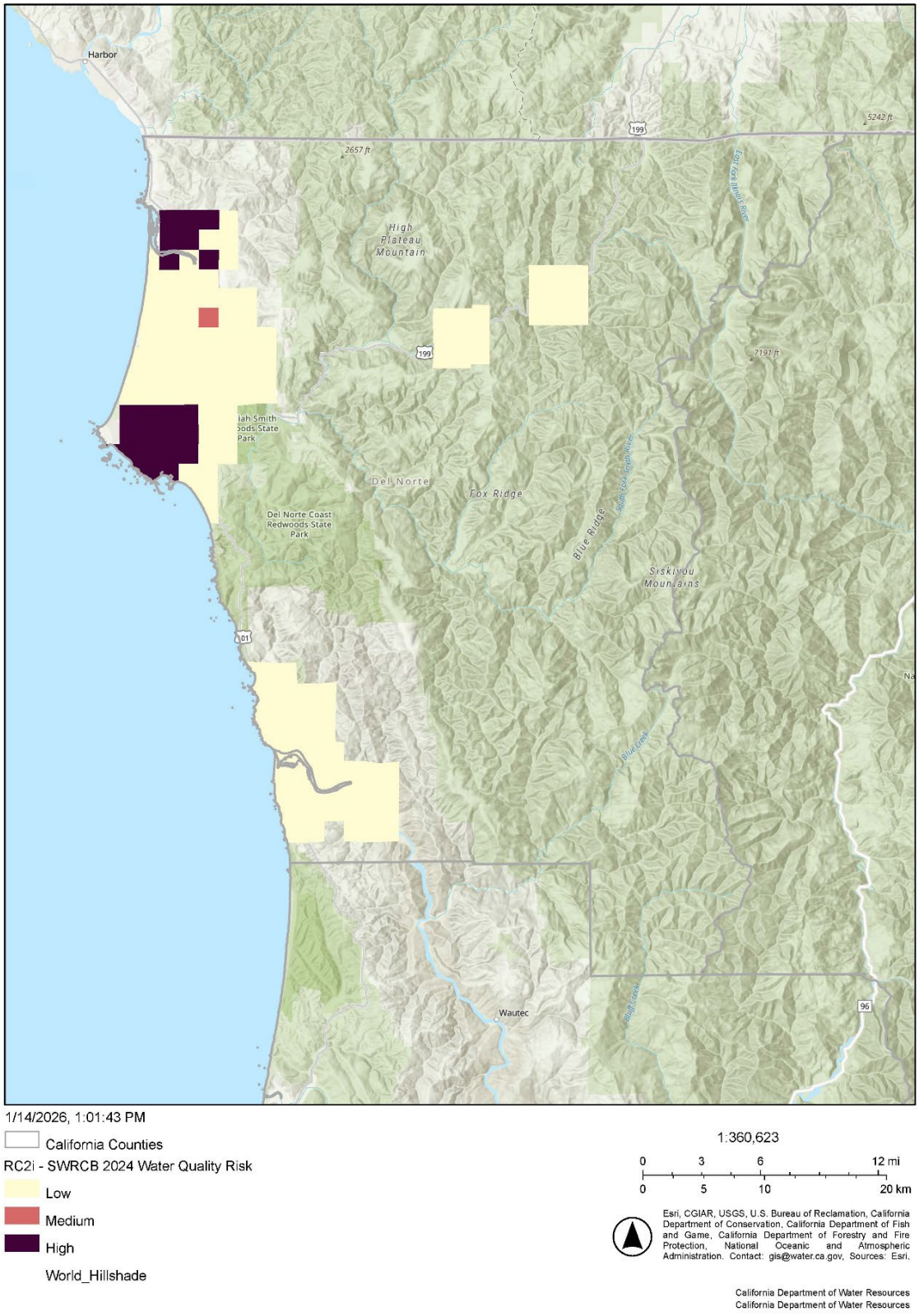


Figure 3-8. Fire Hazard Severity Zones in State Responsibility Areas in Del Norte County



Source: DWR 2024b

Figure 3-9. State Water Board 2024 Water Quality Risk in Del Norte County

Table 3-3. Summary of Observed Conditions for Physical Vulnerability Indicators in Del Norte County

Physical Vulnerability Indicator	Observed Conditions[1]
Climate Change	
Absolute Projected Temperature Change (RC1a)	Projected change in the maximum temperature by mid-century shows a less than 1.73°F increase in average temperature in the western portion of the County with the eastern portion rising by up to 2.79°F. Increased temperatures could increase water supply demands from users, evapotranspiration, and others, thereby increasing vulnerability to drought and/or water shortage impacts.
Sea Level Rise Impacts Through Saltwater Intrusion into Coastal Aquifers (RC1b)	Coastal areas of the County (western portion) are tidally influenced. Potential influence from higher salinity water intrusion from the Pacific Ocean and impacts on groundwater quality makes coastal areas highly vulnerable to saltwater intrusion. Current and future saltwater intrusion into groundwater increases vulnerability of domestic wells and SSWSs.
Climate Change Projections of Wildfire by Mid-Century (RC1c)	County projections show a significant rise in small-area burns by 2064. The projected increase in burning warrants inclusion in the risk assessment due to inherent high risks involved. Increasing wildfire frequency and severity can increase vulnerability of water sources.
Current Environmental Conditions and Events	
Current Dry Year (RC2a)	Precipitation in Water Year 2024 was above the historic average in all areas.
Multiple Dry Years (RC2aa)	Data shows that most of the County has experienced no dry years in the last 5 years. Areas that did experience dry years include the northwest and northeastern corners, the southwestern corner and areas surrounding Crescent City. Only 1 area in the northeastern corner had experienced 2 dry years within the last 5 years. A higher number of recent dry years may increase physical vulnerability of water supply conditions.
USFS Wildfire Risk (RC2b)	The County is assigned primarily very high and high USFS wildfire hazard risk designations. Moderate wildfire risk are located in the western portion of the County, whereas higher wildfire risk are located in enclaves of private ownership located in central and eastern regions within the Six Rivers National Forest. There are several populated areas within regions high and moderate wildfire risk. Populated areas on the western coast have dense domestic wells and a moderate high-severity wildfire risk. Although not incorporated in the physical vulnerability scores in the risk assessment, the County and Task Force considered the CalFire Hazard Severity Zones in identifying vulnerable communities.

Physical Vulnerability Indicator	Observed Conditions[1]
Fractured Rock Areas (RC2c)	This metric serves to identify areas outside of alluvial groundwater basins. Fractured rock is present across the entire eastern half of the County. The areas near Crescent City stretching to Smith River are alluvial groundwater formations. Similarly, southwestern areas surrounding Klamath are alluvial formations. Water availability in fractured rock areas is more difficult to monitor and therefore more uncertain for those relying on it as a source of water. Areas underlain by fractured rock are considered a water supply risk because groundwater availability and system reliability are highly sensitive to variations in precipitation.
State Water Board 2024 Water Quality Risk (RC2i)	This index shows that groundwater likely accessed by domestic wells may contain concentrations of constituents above regulatory levels specifically in the Crescent City and Smith River areas.
Subsidence (RC2d)	No subsidence has been reported in the County. Higher subsidence creates higher vulnerable conditions.
Presence of Saltwater Intrusion (RC2e)	Coastal areas of the County (western portion) are tidally influenced. Potential influence from higher salinity water intrusion from the Pacific Ocean and impacts on groundwater quality can make these areas highly vulnerable to saltwater intrusion. Current and future saltwater intrusion into groundwater increases vulnerability of domestic wells and SSWSs.
Overdrafted Basin (RC2f)	Over-drafted basins increase physical vulnerability to water shortage and drought. The groundwater basins in the County are not considered critically over-drafted.
Groundwater Decline Levels (RC2g)	Minimal decline in groundwater levels has been observed in the County near Crescent City, Pacific Shores, and south of Smith River.
Amount of Irrigated Agriculture (RC2j)	There is moderate farming activity in the County, with irrigated agriculture focused in the Smith River Basin stretching from the Oregon border to Fort Dick, Hunter Valley, and the Requa area. The presence of agricultural activities can indicate competing demand for domestic well and SSWS operators, as well as water quality concerns—both of which can create higher vulnerability, especially during a drought or water shortage event.
Infrastructure Susceptibility	
Domestic Well Susceptibility in Basins (RC3a)	This factor analyzes locations where there are many susceptible wells that may go dry if the current groundwater trends in the County continue. Data show an overall low likelihood of dry well susceptibility.

Physical Vulnerability Indicator	Observed Conditions[1]
Fractured Rock Area Competing Demand (RC3c)	Because evaluating water suppliers in fractured rock is complex and difficult, density of domestic wells in fractured rock areas was evaluated as a proxy to represent competing demands for water resources. A rise in demand puts a strain on water resources and increases the likelihood of well outages in the area. The data gathered in the County indicate moderate competing demand in fractured rock areas near Gasquet and Hiouchi.
Record of Shortage	
Observed Household Shortage (RC5a)	Areas that have already experienced outages are more likely to experience similar conditions during future dry years, due to combinations of aquifer sensitivity/fluctuations and shallow wells. Two household outages have been reported in the County.

Key:
[1] Abbreviations are included next to Indicator Name (i.e., "RC1a") for clarity to underlying methodology
°F = degrees Fahrenheit
DWR = California Department of Water Resources
USFS = United States Forest Service

3.5 Risk Assessment Findings

The areas within the County with domestic wells or SSWSs vulnerable to water supply shortages, the drivers of those physical vulnerabilities, and the corresponding total social vulnerability scores are presented in Table 3-4. Summary of Risk Assessment Findings in Del Norte County and shown in Figure 3-10. These areas and vulnerabilities were used by the County and the Task Force to develop short-term actions and long-term strategies for addressing water shortage of domestic wells and SSWSs across the County.

Table 3-4. Summary of Risk Assessment Findings in Del Norte County

Area with Water Shortage Vulnerability and Domestic Wells/SSWSs	Physical Vulnerability Indicators	Social Vulnerability Score	Location in Figure
Communities in Fractured Rock Areas (Gasquet and Hiouchi)	Fractured Rock Area Domestic Well Density in Fractured Rock Areas Wildfire	Medium	A
Areas within the Smith River Plain Basin near Smith River	Wildfire Saltwater Intrusion Water Quality Risk Agriculture	Medium	B
Areas within the Smith River Plain Basin near Crescent City	Saltwater Intrusion Water Quality Risk Competing Demand Recorded Household Outages	High, medium-high, and low	C
Areas within the Lower Klamath River Basin near Klamath	Wildfire Saltwater Intrusion Recorded Household Outages	Medium-high	D

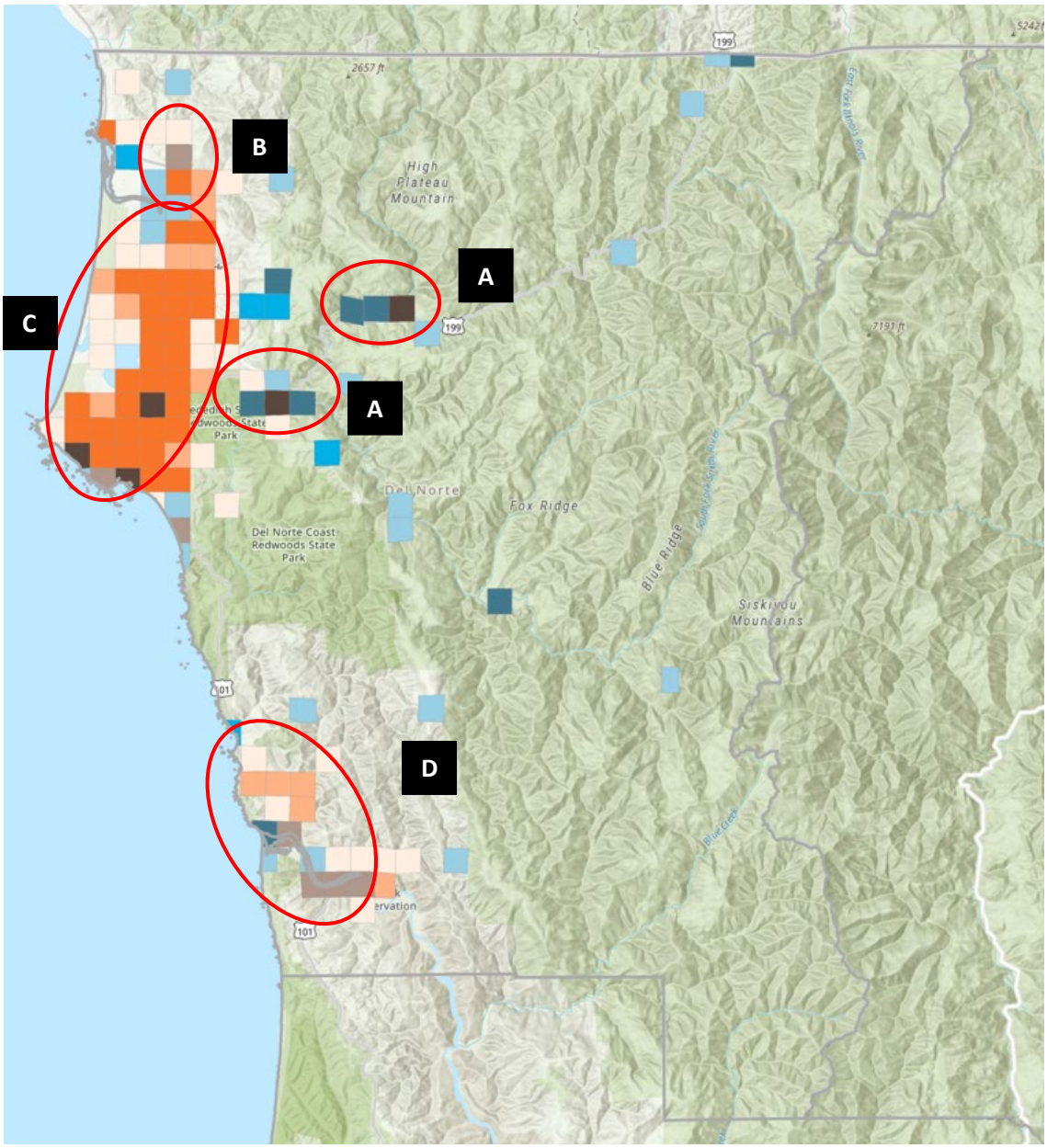


Figure 3-10. Summary of Risk Assessment Findings Showing Areas with Water Shortage Vulnerability in Del Norte County

Risk Assessment Gaps

Understanding gaps in the risk assessment (1) helps identify physical and social vulnerabilities that may exist but are not effectively captured using the methodology applied and data available, (2) focuses future efforts to improve future risk assessments, and (3) allows communities to develop long-term continuous monitoring and improvement plans. This proactive approach helps build resilience over time. The risk assessment gaps described below were preliminarily identified by the County, the Task Force, and other stakeholders during the development of the County DRP. Additional data gaps may be identified during implementation of this County DRP.

- **SSWS Data:** County staff report a different number of SSWSs than the State database compared to internal records. The WSVE Tool currently shows there are no SSWSs present within the County. This discrepancy likely reflects that the State databases are not up-to-date with local data sources. To address this inconsistency, the County will continue to coordinate with the State Water Resources Control Board to reconcile records and update the State database as necessary so that it is consistent with County-maintained information.

4.0 Short-Term Response Actions

The risk assessment presented in Chapter 3 showed that domestic wells and SSWSs in fractured rock areas within the Smith River Plain Basin near Smith River, the Smith River Plain Basin near Crescent City, and within the Lower Klamath River Basin may be susceptible to water shortages, particularly due to extended droughts. Based on the outcomes of that assessment, this County DRP identifies short-term response actions (STRA) to help address the effects of water shortage emergencies that could occur in vulnerable regions of the County. The identified STRAs are not exhaustive and may be modified in the future. In the context of this County DRP, STRAs are defined as actions implemented in advance of and during water shortage emergencies caused by drought and water shortage events, often addressing immediate and basic public safety needs.

This section describes the STRAs included in the County DRP and the Drought and Water Shortage Emergency Response Process (ERP) developed as part of the County DRP to assist with implementing STRAs.

4.1 Legislative Direction

SB 552 requires that each county develop a drought and water shortage plan that includes proposed interim solutions for SSWSs and domestic wells, per CWC Section 10609.70 (**boldface** added for emphasis as related to STRAs and this section of the County DRP):

> *(b)* ***A county shall develop a plan that includes potential drought and water shortage risk and proposed interim*** *and long-term* ***solutions for state small water systems and domestic wells within the county's jurisdiction****. The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. A county shall consult with its drought task force or alternative coordinating process as established by this section in developing its plan. A county shall consider,* ***at a minimum****, all of the following in its plan:*
>
> *(1) Consolidations for existing water systems and domestic wells.*
>
> *(2) Domestic well drinking water mitigation programs.*
>
> ***(3) Provision of emergency and interim drinking water solutions.***
>
> *(4) An analysis of the steps necessary to implement the plan.*
>
> *(5) An analysis of local, state, and federal funding sources available to implement the plan*

4.2 Pre-Negotiated Contracts and Mutual Aid Agreements

Efficient implementation of STRAs requires coordination and cooperation with other entities beyond those within the County government. These can include pre-negotiated contracts and mutual aid agreements.

The acquisition of materials to implement this County DRP may be subject to local and State policies and regulations that govern their purchase. In the event of an emergency, counties can acquire materials necessary for the protection of public health, welfare, or safety via existing emergency procurement policies that are faster than traditional procurement. Exercise of this authority requires declaration of a

local emergency and is time-limited, obligating counties to follow traditional procurement practices at the earliest practicable opportunity.

The County may seek to establish pre-negotiated contracts and other related agreements for STRA 01 that can be exercised during a recognized water shortage event. This would allow the County to maintain consistent resources during emergencies and interim water shortage events. Such pre-negotiated contracts may involve private companies or other local public agencies, such as public water systems, to secure needed resources. The establishment, renewal, and ongoing management of these pre-negotiated contracts will comply with traditional procurement practices as required by local and State policies, except when emergency procurement authorities are temporarily invoked during a declared emergency.

A mutual aid agreement is an arrangement established before an emergency through which another entity(ies) provides personnel, equipment, materials, and/or associated services during an emergency. A mutual aid agreement clearly describes how the involved entities would engage with the County and with each other during a water shortage emergency, along with their roles and responsibilities.

Mutual aid agreements recommended for efficient activation of STRAs are outlined in Table 4-1, including the entities that should have a mutual aid agreement, the nature of that mutual aid, and the status of any agreement as of January 2026.

Table 4-1. Pre-Negotiated Contracts and Mutual Aid Agreements Recommended for Activation of Short-Term Response Actions Included in Del Norte County Drought Resilience Plan (as of January 2026)

STRA	Contract or Mutual Aid Agreement Need	Lead	Status
STRA 01: Packaged and Bottled Water Supplies	The County to procure pre-negotiated contracts for packaged and bottled water vendors.	County OES	Pending
STRA 02: Dedicated Water Filling Stations During a Water Shortage	The County to develop mutual aid agreements with water providers to facilitate the creation of dedicated water filling stations.	County OES	Pending
STRA 03: Water Hauling, Bulk Water for Temporary Tanks	The County to develop mutual aid agreements with water haulers and water providers to facilitate the establishment of temporary tank locations.	County OES	Pending

Key:
County = Del Norte County
County OES = Del Norte County Office of Emergency Services
STRA = Short-Term Response Action

4.3 Short-Term Response Actions Included in the Del Norte County Drought Resilience Plan

STRAs included in the County DRP are summarized in Table 4-2 and described in this section. Most of these STRAs provide emergency and interim drinking water supplies via bulk water delivery or with packaged or bottled water. Other STRAs include the mutual aid agreements required to (1) provide these emergency and interim drinking water supplies efficiently, and (2) expedite the well permitting approval process. A process for STRA implementation is presented in Section 4.3, while future efforts to address STRA implementation challenges and develop new STRAs are described in Section 6.2.2.

Table 4-2. List of Short-Term Response Actions Included in Del Norte County Drought Resilience Plan

ID	STRA Type	STRA Name	STRA Description	Responsible Entity	Supporting Entities
STRA-01	Packaged and Bottled Water Supplies	Emergency/ Interim Drinking Water Supplies	The County will explore opportunities to identify and establish a program to acquire and distribute packaged or bottled water to domestic well and SSWS users in the event of an emergency.	County OES	County CDD
STRA-02	Dedicated Water Filling Stations During a Water Shortage	Emergency/ Interim Drinking Water Supplies	The County may identify, and consider establishment, a network of emergency potable water supply stations and suppliers in the event of a water shortage emergency. The County would collaborate with public and other water suppliers to provide sufficient water supplies consistent with the estimated population at risk of shortage.	County OES	County CDD
STRA-03	Water Hauling, Bulk Water for Temporary Tanks	Emergency/ Interim Drinking Water Supplies	The County may consider establishing a program to assist with the installation of temporary bulk water storage tanks. This would include developing policies and agreements to facilitate coordination with public water systems, ensuring reliable provision of temporary water supplies and resources to deliver to them effectively during periods of need.	County OES	County EHD Public Water Systems DWR
STRA-04	Expedited Well Permitting	Streamlining and Coordination	The County will continue to prepare and implement expedited permit authorization for construction of replacement wells in the event of a water shortage emergency.	County EHD	County CDD

Key:
County = Del Norte County
CDD = Del Norte County Community Development Department
EHD = Del Norte County Environmental Health Division
OES = Del Norte County Office of Emergency Services
STRA = Short-Term Response Action
SSWS = State Small Water System

4.3.1 Emergency and Interim Drinking Water Supplies

Emergency and interim drinking water supplies involve providing temporary water supplies until longer term water supplies are secured or the water shortage emergency ends. Emergency and interim drinking water supplies are used during water shortage emergencies to meet basic health and safety needs.

4.3.1.1 Packaged and Bottled Water Supplies (STRA 01)

The County will provide packaged or bottled water (i.e., 1- to 5-gallon jugs and individual bottled waters) to affected domestic well and SSWS users during a water shortage emergency. Packaged or bottled water delivery is included as a STRA in the County DRP as STRA 01.

Packaged or bottled water would be sourced from local vendors. The California Department of Public Health's Food and Drug Branch maintains a list of approved commercial bottled water vendors in the state. In the event of a State or federal disaster declaration, the County will coordinate with those entities to acquire packaged or bottled water and cost-sharing.

County OES is the lead entity for this STRA, with support from the County's CDD. Packaged or bottled water would be distributed to affected domestic well or SSWS users following the process described in Section 4.4.3. Locations, operating hours, and other information regarding packaged or bottled water would be communicated using the process described in Section 4.4.3.

4.3.1.2 Dedicated Water Filling Stations (STRA 02)

During a water shortage emergency, domestic well or SSWS users could take water from dedicated water filling stations owned and operated by large water purveyors. These water filling stations would be located at established locations that would provide potable water to the affected users. Domestic well or SSWS users would need to provide their own water storage containers. Specific locations would be identified and operational logistics established as the County has resources. Dedicated water filling stations are included as a STRA in the County DRP as STRA 02.

Pacific Power is an electrical utility with facilities in Crescent City and elsewhere in California, Oregon and Washington. It is a division of PacificCorp, which is owned by Berkshire Hathaway Energy Company. During hot and windy conditions, Pacific Power may conduct a public safety power shutoff (PSPS) to reduce the risk of wildfires starting from transmission lines. This shuts off power to the majority of the County. During these PSPSs, Pacific Power may establish community resource centers that include water supplies. The County will collaborate with Pacific Power to communicate to domestic well and SSWS communities to ensure awareness of these community resource centers if the PSPS results in water shortage conditions.

County staff may coordinate with Pacific Power and other entities, as identified, to potentially establish a network of emergency potable water supply stations/suppliers in the event of a water shortage emergency. County staff would coordinate designated filling locations based on the location of the water shortage event. Additionally, County staff would provide domestic well owners and SSWS operators with information related to available water filling stations and associated community resource centers. It would be beneficial for a local plan to be prepared to pre-identify staging areas, estimate staffing needs, and to create any mutual aid agreements or other agreements with the City of Crescent City or CSDs.

County OES is the lead entity for this STRA, with support from the County's CDD.

4.3.1.3 Water Hauling, Bulk Water for Temporary Tanks (STRA 03)

Water hauling or bulk water delivery to temporary water tanks involves using licensed water haulers or tankers to deliver emergency water supplies to those in need at either (1) a central distribution point for residents to bring a container to be filled, or (2) a hospital or other critical infrastructure where the water hauler or tanker can be connected. Water hauling or bulk water delivery is included as a STRA in the County DRP as STRA 03.

Within the County, water hauling or bulk water delivery would primarily be used to provide emergency water supplies at a temporary distribution point. Location of new temporary and/or permanent tanks would be established based on water shortage events or in coordination with other entities, as identified. Currently, there are no licensed water haulers based out of the County. This strategy assumes using water haulers from neighboring counties such as Siskiyou and Humboldt County, depending on the location of the water shortage.

County OES is the lead entity for this STRA, with support from County Environmental Health, public water systems, and DWR. Water hauling and bulk water delivery to affected areas would follow the process described in Section 4.4.3. Locations, operating hours, and other information regarding water hauling and bulk water delivery would be communicated using the process described in Section 4.4.

4.3.1.4 Expedited Well Permitting (STRA 04)

As drought or water shortage conditions worsen and the production or quality of water at domestic wells or SSWSs declines, well owners may be able to install a new well or rehabilitate an existing one to ensure continued water supply reliability. Within the County's authority, streamlining the permitting process for activities such as new well construction or existing well rehabilitation for domestic well or SSWS users could assist in providing relief during an ongoing water shortage. This streamlining process does not relax permitting criteria related to water supply, such as proximity to other wells or water quality. Failing to consider water supply criteria appropriately could worsen a water supply shortage for other groundwater users or exacerbate an ongoing water shortage. Permit streamlining and coordination are included in the County DRP as STRA 04.

The County already operates a streamlined well permitting system that will continue to be used during water shortage emergencies. County staff are typically able to approve applications for new or rehabilitated wells within 1 to 2 days of submission.

The Environmental Health Division is the lead entity for this STRA, with administrative support from the Community Development Department (CDD).

4.4 Drought and Water Shortage Emergency Response Process

The Drought and Water Shortage Emergency Response Process (ERP) describes (1) how County staff would evaluate drought and water shortage conditions in the County and declare a water shortage, and (2) its Emergency and Interim Drinking Water Distribution (EIDWD) Plan to activate emergency and interim drinking water supplies and communicate with affected domestic well and SSWS communities.

4.4.1 Drought or Water Shortage Triggers

Declaring a drought or water shortage is important as it communicates a potential or ongoing emergency, activates mutual aid agreements, and is the first step in accessing State and federal resources that may be available to assist the County in implementing STRAs.

This DRP outlines a process for classifying water shortage stages, as detailed below. The ERP is organized around three water shortage stages: information, alert, and response as detailed below:

- In the **water shortage information stage**, there is no major drought or potential for water shortage. In this stage, County staff completes its County DRP implementation as described in Section 6.2.
- In the **water shortage alert stage**, drought or the potential for water shortage exists, but there is no active water shortage emergency. In this stage, County staff increases communication and outreach activities and initiates coordination with other entities.
- If a water shortage emergency is imminent or actively occurring, the County is in the **water shortage emergency response stage**. In this stage, County staff, in coordination with County Public Health Branch (County PHB) and County Public Health Office (County PHO), would declare a water shortage emergency and activate the EIDWD plan described in Section 4.4.3. The County Public Health Office and the County Public Health Branch are lead personnel in the activation of water shortage response actions. The County PHO would make a determination of public health risk before activation of the EIDWD. Drinking water reliability and contamination issues fall within the statutory authority of the County PHO.

If a State drought or water shortage emergency declaration includes areas within the County, the County would go into the water shortage emergency response stage and activate the EIDWD Plan. In the event of a federal disaster declaration, County staff would evaluate if the disaster could require emergency and interim drinking water supplies; if so, it would activate the EIDWD plan. State and/or federal disaster declarations may make additional resources available to provide emergency and interim drinking water supplies. County staff would evaluate how these declarations may influence the implementation of the STRAs identified in this County DRP and the activation of the EIDWD plan.

The water shortage stage is informed using Table 4-3, which shows the indicators (water supply related features) and associated triggers (conditions of indicators associated with a water supply status) to determine the current water shortage shown. These indicators and triggers can be used to support a water shortage stage recommendation and actions to the Task Force and public as well as an emergency declaration for State and federal resources. The information in this table is not exhaustive and is intended to show how the indicators and triggers could be considered. Other indicators and triggers (not shown) may also be developed by the County. The County will regularly monitor and evaluate these indicators and triggers and make a corresponding water shortage stage recommendation to the Task Force during its annual meeting held in April/May. The County may hold additional Task Force meetings during a calendar year if conditions merit.

4.4.2 Responding to a Water Shortage Stage

The County has aligned certain STRAs and activities to each water shortage stage, as shown in **Error! Reference source not found.** 4-3. New STRAs that are not listed in Table 4-2Error! Reference source not found. may be identified and implemented, based on the physical conditions in the County. Implementation of individual STRAs are subject to specific water shortage needs and at the direction of the County, in consultation with the Task Force.

In the information stage, the County would complete an annual review of the County DRP Implementation Plan, evaluate the water supply system health, organize a meeting with the Task Force,

update County resources (i.e., website, vendor lists), and continue proactive outreach to domestic well and SSWS operators. In the alert stage, the County would focus on raising awareness of potential water shortage issues, providing the steps to follow if a water shortage occurs, encouraging temporary mitigation measures that may avoid a shortage, and coordinating with other organizations that may be involved in the event a shortage occurs (such as GSAs, public water systems, and other County departments). In the response stage, the County would activate its process to distribute water supplies, coordinate with other organizations, and update the Task Force.

Table 4-3. Indicators and Trigger Considerations for Determining Active Water Shortage Stages for Domestic Wells and State Small Water Systems in Del Norte County

Indicator Name	Indicator Description	Trigger Consideration when Going into the Alert Stage	Trigger Consideration when Going into the Response Stage
U.S. Drought Monitor	The U.S. Drought Monitor is a map updated every Thursday that classifies drought conditions across the United States into none, abnormally dry, moderate, severe, extreme, and exceptional. The County can use this resource to understand the prevalence and severity of drought within the County and surrounding areas when determining if it should be in the warning stage.	The County should use experience during previous droughts to determine what U.S. Drought Monitor classification warrants going into the warning stage. Some counties may be more resilient against abnormally dry or moderate drought conditions and may only need to go into the warning stage in severe, extreme, or exceptional drought. Also the County should consider if groundwater within its borders is reliant on conditions outside the County such as in mountain watersheds or locations from where water is imported.	An extreme or exceptional drought classification may not solely indicate that a water shortage emergency is occurring or imminent. The County should heighten its monitoring of other indicators if extreme or exceptional drought exists in the County.
Public Water System Water Shortage Stage	A public water system is required to maintain a water shortage contingency plan (or have one within an urban water management plan) that specifies stages of water shortage tied to projected water supply shortfalls. The drought stages that public water systems may be a proxy for overall drought conditions within the County.	The County should use historical experience to determine if a public water system's drought stage warrants going into the warning stage. Public water systems that use the same groundwater supplies are a better direct proxy than those that rely on different types of water supplies.	A water shortage contingency plan must include an emergency stage that is only used when water supply shortages are imminent. If a public water system in the County is in an emergency stage, the County itself may need to consider going into an emergency stage, especially if these systems use the same groundwater supplies.
Water Quality	Areas with known water quality issues are likely monitored. The presence of potential water quality issues that may result in water supplies being unusable can be used to establish a water shortage stage. Note that other hazards such as droughts or wildfires can exacerbate poor water quality conditions and should also be considered in combination with this indicator.	Water quality observations that are noted as being of concern (for unregulated chemicals or those without an established water quality level) or the measured water quality is outside of established standards (maximum contaminant levels, primary or secondary standards, etc.). However, a boil-water notice or other intervention limiting use is not in place.	Observed water quality is outside public health standards (maximum contaminant levels, primary or secondary standards, etc.). and/or a boil-water notice or intervention limiting use is in place.
Applications for New Well Permits	Some counties have observed an increase in new well permit applications (both domestic and others) to replace existing wells that are not providing sufficient water supply even if there are not associated dry well reports. As a proxy for water shortage, the County can evaluate if these new applications are to replace an existing well that has gone or is going dry.	If the County is in a drought condition (U.S. Drought Monitor, public water system, or others) and there is an increase in new well permit applications, then the County should consider going into the warning stage while evaluating if the new applications are due to water shortages for domestic wells or SSWSs.	If the County determines that an increase in new well permits is because of water shortages at domestic wells or SSWSs, the increase may indicate water shortages at other domestic wells or SSWSs. This may require going into the emergency stage.
Dry Well Reports	California has a Dry Well Reporting System that well owners or operators can use to report a dry well (DWR 2026). The County can use this to identify where a water shortage is occurring.	Any dry well reports submitted within the County should trigger evaluating the cause of the water shortage. If the cause is due to an isolated issue (i.e. very shallow well, aging infrastructure) that was exacerbated by drought, the County could go into the warning stage and monitor for other dry well reports.	If after evaluating the dry well reports it is found the features of the dry well (i.e., depth, age) are consistent with other wells in the area, that may indicate the potential for widespread water shortages. This may require going into the emergency stage.
GSA Monitoring	GSAs in SGMA priority basins are required to do regular monitoring (typically in October and April) of groundwater conditions as part of their reporting. The County can use these monitoring programs to inform a water shortage stage.	If monitoring or analysis by a GSA indicates a decline in groundwater levels below an established threshold (such as a minimum threshold or measurable objective as defined in the GSP) that could cause water supply issues, the County could consider going into the warning stage.	If a monitoring or analysis by a GSA results in the GSA implementing response actions to avoid water shortages and SSWS or domestic well supplies could be impacted in that area, the County could consider going into the emergency stage.
Non-Drought Hazards	There are other hazards that could result in a water shortage including wildfires, earthquakes, floods, and power outages (either planned or unplanned); the County should monitor conditions following a hazard event. Water supply impacts of some of these hazards can be worsened by drought conditions, and such events can also influence other indicators such as water quality.	Hazards that temporarily interrupt domestic well or SSWS supplies for up to two days could trigger the warning stage.	Hazards that interrupt domestic well or SSWS supplies for an extended period (3 or more days), including PSPSs, could trigger the emergency stage.

Key:
County = Del Norte County
GSA = Groundwater Sustainability Agency
SSWS = State small water system
SGMA = Sustainable Groundwater Management Act

Table 4-4. Short-Term Response Actions Aligned to Water Shortage Stage with Responsible Organization(s) for Del Norte County

Water Shortage Stage	Description	Activity Description	Responsible Organization	Comment
Information	No major drought or potential for water shortage	Annual County DRP implementation check in	County CDD	County CDD will review the status of the DRP implementation plan, determine if any modifications are required, and assign responsibilities for making DRP modifications. Review and update contacts as needed.
		Annual water supply condition assessment	County EHD	County EHD, in partnership with others, will evaluate the water supply system health in March to support a water shortage stage recommendation for the Task Force.
		Annual Task Force meeting	County CDD	Annual Task Force meetings will occur in April after the water supply health is evaluated.
		Annual website update	County CDD	Website will be updated in April to reflect current conditions.
Alert	Drought or other hazard occurring that could cause a water shortage	As-needed Task Force meetings	County CDD	County CDD will schedule additional Task Force meetings based on hazard.
		Outreach to domestic well and SSWS communities on water shortage–related information, including, but not limited to: • How to monitor domestic well health • Resources for when a well runs dry • County contact information • Information on water shortage conditions within the County	County EHD	County EHD will outreach to domestic well and SSWS owners/operators within the County with water shortage–related information. This outreach could be via website updates, social media posts, email distributions, and other methods of communication.
		As-needed coordination meetings with relevant organizations such as other County departments, local water providers, power companies, and other agencies	County CDD	County CDD will initiate coordination and schedule as-needed check-in meetings with relevant organizations to discuss and monitor water shortage conditions and potential activities.
Response	Water shortage is occurring or is imminent	Regular Task Force meetings	County CDD	County CDD will schedule additional Task Force meetings.
		Activate EIDWD plan as listed in this County DRP for area(s) experiencing shortage	County OES	County OES will activate the EIDWD plan, but other entities will implement specific activities as defined.
		Standing coordination meetings with relevant organizations	County CDD	County CDD will organize regular coordination meetings and will delegate tasks to other organizations as required.

Key:
County = Del Norte County
CDD = Del Norte County Community Development Department
DRP = Del Norte County Drought Resilience Plan
EHD = Del Norte County Environmental Health Department
EIDWD = Emergency and Interim Drinking Water Distribution
OES = Del Norte County Office of Emergency Services
SSWS = State Small Water Systems
Task Force = Del Norte County Drought and Water Shortage Task Force

4.4.3 Emergency and Interim Drinking Water Distribution Plan

The EIDWD plan outlines the process for County staff to follow when distributing emergency and interim drinking water supplies to affected domestic well and SSWS communities. Table 4-5 shows the process County staff would follow in the event that distribution of emergency or interim drinking water supplies is required due to a short-term water shortage. Unless otherwise noted, implementation of these activities is subject to declaration of an emergency consistent with the County DRP.

Table 4-5. Emergency and Interim Drinking Water Distribution Plan Summary

EIDWD Plan Component	Description
Lead Agency	The County PHO and County PHB lead the EIDWD plan in coordination with County CDD, County EHD, and County OES
Activation	Activation of the EIDWD plan is subject to recommendation by the County PHO. Activation is informed by an assessment conducted by the County PHO and County PHB that includes: • Trigger or cause of water shortage emergency; see Table 4-3 for drought and water shortage triggers to be considered in the assessment • Affected geographic area and demographics of the affected population • Emergency and interim water supply type(s); see Table 4-2 for options • Estimated duration of need
Notification	County OES will serve as the lead agency managing notification to the affected community on how and where to get emergency water supplies. The notification method may vary depending on the cause of the water shortage emergency (climate influenced, wildfire, power interruption, etc.) Anticipated notification methods include: • Agency website (https://www.co.del-norte.ca.us/SB552-CountyDroughtResiliencePlanDevelopment) • Email • U.S. Mail • Broadcast media (radio/television) • Door hangers, fliers, information kiosks • Public outreach meetings, and other existing meetings Conduct of notifications may include coordination/collaboration with other partner agencies and organizations such as: • Neighborhood Associations • Nonprofit Organizations • Schools, Churches, and Community Groups Depending on the demographics of the affected community, information, materials, and other notifications may be required for non-English speaking communities. County OES will determine whether bilingual services are needed in support of water distribution activities.

EIDWD Plan Component	Description
Information Collection	County OES will collect specific information to support applicable cost recovery and inform future EIDWD efforts. Such data collection would be consistent with County data collection policies, including limits on data collection, privacy protections, and records retention practices, and would generally include the following: • Number of people served by emergency supply, including age and household income • General geographic location of household • Occupancy status (homeowner or tenant) • The duration for which emergency supplies would maintain water needs • Distance traveled to receive emergency supplies and mode of transportation • Known condition of well; prior experiences with water supply shortages • Others as identified as needed

Key:
County = Del Norte County
County OES = Del Norte County Office of Emergency Services
County PHO = County Public Health Office
County PHB = County Public Health Branch
EIDWD = Emergency and Interim Drinking Water Distribution

5.0 Long-Term Mitigation Strategies and Actions

Findings revealed through the risk assessment presented in Chapter 3 show localized and regional water supply concerns including the density of domestic wells in fractured rock areas, water quality risks, and wildfire. While risks that impact the basic public health and safety of residents can be addressed through STRAs, long-term mitigation strategies and actions (LTMSA) mitigate and potentially prevent the conditions that lead to water shortage emergencies. This County DRP identified 12 LTMSAs, organized into three categories: drinking water well mitigation program, regional water infrastructure investment, and system consolidation. These LTMSAs are not exhaustive and may be modified in the future.

In the context of this County DRP, LTMSAs serve to reduce drought and water shortage vulnerabilities for domestic well and SSWS communities. When implemented, LTMSAs can reduce the extent and cost of emergency response actions, but cannot eliminate the need for emergency response actions.

5.1 Legislative Direction

SB 552 requires that each county develop a drought and water shortage plan that covers long-term solutions for SSWSs and domestic wells, per CWC Section 10609.70 (**boldface** added for emphasis with respect to LTMSAs and this section of the County DRP):

> *(b)* ***A county shall develop a plan that includes potential drought and water shortage risk and proposed*** *interim and* ***long-term solutions for state small water systems and domestic wells within the county's jurisdiction****. The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. A county shall consult with its drought task force or alternative coordinating process as established by this section in developing its plan. A county shall consider,* ***at a minimum****, all of the following in its plan:*
>
> ***(1) Consolidations for existing water systems and domestic wells.***
>
> ***(2) Domestic well drinking water mitigation programs.***
>
> *(3) Provision of emergency and interim drinking water solutions.*
>
> *(4) An analysis of the steps necessary to implement the plan.*
>
> *(5) An analysis of local, state, and federal funding sources available to implement the plan*

5.2 Long-Term Mitigation Strategies and Actions Included in the Del Norte County Drought Resilience Plan

LTMSAs included in the County DRP are summarized in Table 5-1. LTMSAs related to drinking water well mitigation programs are described in Section 5.3. The system consolidation opportunity within the County is described in Section 5.4. The ability of regional water infrastructure investments to help address domestic well and SSWS vulnerabilities is detailed in Section 5.5. Future efforts related to LTMSA implementation and challenges are described in Section 6.2. The LTMSAs shown in this table may be updated or replaced as part of future County DRP updates.

Table 5-1. List of Long-Term Mitigation Strategies and Actions Included in Del Norte County Drought Resilience Plan

ID	Long-Term Mitigation Strategy or Action Category and Type	Long-Term Mitigation Strategy and Action Name	Long-Term Mitigation Strategy or Action Description	Responsible Entity	Supporting Entities
LTMSA 01	Drinking Water Well Mitigation Programs: Communication and Outreach	Domestic Well and SSWS Resource Website	County staff would create and maintain a website with relevant information (contacts, permits, data, etc.) for domestic well and SSWS communities.	County EHD	County CDD County OES
LTMSA 02	Drinking Water Well Mitigation Programs: Communication and Outreach	Maintain Network of Vendors and County Contacts	County staff would create and maintain a contact list of well drillers, and laboratories to be shared with domestic well and SSWS communities. The contact list would be posted on the County website.	County EHD	County CDD
LTMSA 03	Drinking Water Well Mitigation Programs: Communication and Outreach	Supply Interruption Notification for Public Safety Power Shutoffs	County staff would establish a distribution list of domestic well and SSWS users to contact in advance of public safety power shutoffs. When a power interruption is anticipated, County staff would coordinate with Pacific Power on initial notification.	County OES	Pacific Power County CDD
LTMSA 04	Drinking Water Well Mitigation Programs: Water Shortage Prevention	Water Quality Outreach for Domestic Wells and SSWSs	County staff may update the County website with groundwater quality information. This could include characterizing water quality data from the County and linking to informational brochures from other entities.	County EHD	County PHB
LTMSA 05	Drinking Water Well Mitigation Programs: Water Shortage Prevention	Point-of-Use Water Treatment Installation Outreach	County staff may conduct outreach to relevant domestic well and SSWS communities on point-of-use water treatment options (e.g., under-sink reverse osmosis, whole-house filter packs) to address water quality issues.	County EHD	County DDW
LTMSA 06	Drinking Water Well Mitigation Programs: Water Shortage Prevention	Grant application assistance to domestic wells and SSWSs	County staff may include website information on potential grants available for domestic well and SSWS communities.	County EHD	County CDD

ID	Long-Term Mitigation Strategy or Action Category and Type	Long-Term Mitigation Strategy and Action Name	Long-Term Mitigation Strategy or Action Description	Responsible Entity	Supporting Entities
LTMSA 07	Drinking Water Well Mitigation Programs: Water Shortage Prevention	Bulk Water Tank Installation	County staff may conduct outreach to domestic wells and SSWSs to raise awareness of system operators of the potential benefits of bulk water storage tanks.	County EHD	County CDD
LTMSA 08	Drinking Water Well Mitigation Program: Water Shortage Prevention when Permitting New or Replacement Wells	Well Permitting Considering Future Growth	County staff may consider future growth when permitting a new or replacement well. This would include reviewing development plans, or other information detailing future demands.	County EHD	County CDD
LTMSA 09	System Consolidation	System Consolidation Evaluation	The County may evaluate system consolidation regarding physical or managerial interconnection between water systems to permit the exchange or delivery of water between those systems discussed in the County DRP, with emphasis on prioritizing connections with water systems without backup supplies and/or few resources.	County EHD	County CDD.
LTMSA 10	Regional Water Infrastructure Investment	County Planning Integration	The County may explore opportunities to update its hazard mitigation plan, emergency operations plan, and/or other related planning documents to reflect and support implementation of the DRP.	County OES	County CDD
LTMSA 11	Data Gaps	Dry Well Reporting and Abandonment	County staff may coordinate with DWR and other relevant entities to improve the accuracy of the State's Dry Well Reporting System, including evaluation of County well completion reports to identify wells installed to supplement low-performing wells and noting abandoned wells.	County EHD	DWR

ID	Long-Term Mitigation Strategy or Action Category and Type	Long-Term Mitigation Strategy and Action Name	Long-Term Mitigation Strategy or Action Description	Responsible Entity	Supporting Entities
LTMSA 12	Data Gaps	Dry and Distressed Well Tracking	The County may update its groundwater well permitting practices to better align with the State's Dry Well Reporting System. These updates could include modifications to the well permit application process to capture additional information related to deepening of existing wells, installation of bulk water storage tanks and/or construction of replacement wells. Applicants could be advised of available well mitigation programs, where applicable, to support long-term groundwater sustainability and ensure compliance with State and local regulations.	County EHD	County OES DWR

Key:
County = Del Norte County
CDD = Del Norte County Community Development Department
DDW = California Division of Drinking Water
County DRP = Del Norte County Drought Resilience Plan
EHD = Del Norte County Environmental Health Division
LTMSA = long-term mitigation strategy or action
OES = Del Norte County Office of Emergency Services
PHB = Del Norte County Public Health Branch
SSWS = State Small Water System

5.3 Drinking Water Well Mitigation Programs

This County DRP considered the utility of Domestic Water Well Mitigation (DWWM) Programs within the County DRP as directed under CWC Section 10609.70 (b)(2). The DWWM Program describes actions that provide assistance to domestic well and SSWS communities with groundwater wells that are relatively shallower than those in the area or are located in specific areas where wells are at a higher risk of running dry more frequently. This section first identifies the DWWM Program(s) within the County organized by Bulletin 118 groundwater basins and fractured rock areas. This section then details the LTMSA components that are included in the DWWM Programs. The DWWM Programs and LTMSA components described herein are not exhaustive and may be modified in the future.

When identifying and defining DWWM Programs, the County DRP considered the following factors:

- Domestic wells and SSWSs vulnerable to water supply shortages (see Chapter 3)
- If a DWWM Program had already been defined as part of a GSP
- The SGMA priority for Bulletin 118 basins
- The occurrence of potentially shallow wells that could be at enhanced risk of drying up
- History of dry well reports and/or new well permits for replacement or deepened wells

Table 5-2 details the identified DWWM Programs within the County.

Table 5-2. Drinking Water Well Mitigation Programs within the County

Location	Vulnerable Domestic Wells and SSWSs Included	Drinking Water Well Mitigation Program Description
Communities in Fractured Rock Basins	Domestic wells in the Gasquet and Hiouchi areas (vulnerable area A in Section 3.5; see Figure 3-10)	There has not been a systematic or concentrated history of well dry-ups within fractured rock areas in the County. Due to the difficulty in monitoring groundwater conditions in these areas, the County DRP DWWM Program for this location will focus on communication and outreach to domestic well communities.
Areas within the Smith River Plain Basin	Domestic wells in the Smith River and Crescent City areas (vulnerable areas B and C in Section 3.5; see Figure 3-10)	The Smith River Plain Basin does not have an active GSP because it is not a Bulletin 118 priority basin. Therefore, it does not have a DWWM Program. Wells in the Crescent City portion of the basin were generally found to be at risk of water quality impacts. Additionally, there is a high occurrence of shallow wells (less than 75 feet) relative to others in the basin. The DWWM Program for this area will focus on communication and outreach.

Location	Vulnerable Domestic Wells and SSWSs Included	Drinking Water Well Mitigation Program Description
Areas within the Lower Klamath River Basin	Domestic wells in the Klamath area (vulnerable area D in Section 3.5; see Figure 3-10)	The Lower Klamath River Basin does not have an active GSP as it is not a Bulletin 118 priority basin. Therefore, it does not have a DWWM Program. Wells in the basin were generally found not to be at risk of water quality impacts. Additionally, there is a high occurrence of shallow wells (less than 75 feet) in the basin. The DWWM Program for this area will focus on communication and outreach.

Key:
County DRP = Del Norte County Drought Resilience Plan
DWWM = Domestic Water Well Mitigation
GSP = Groundwater Sustainability Plan

5.3.1 Communication and Outreach (LTMSA 01, 02, 03)

Effective communication and outreach are essential components of drought resilience efforts, enabling timely information sharing and community engagement to support water shortage mitigation. These strategies aim to provide accessible resources to domestic well and SSWS communities, enabling them to improve the reliability of their water supply.

5.3.1.1 Domestic Well and SSWS Resource Website (LTMSA 01)

As part of this County DRP, the County would establish a website focused on domestic well and SSWS communities. County Staff would update and maintain this website to enhance its content as part of other LTMSAs. This website would house a variety of relevant resources such as the County DRP, contact information, links to monitoring and water quality data, and characterization of water supply. County EH will maintain the website with input from County CDD, and County OES.

5.3.1.2 Maintain Network of Vendors and County Contacts (LTMS 02)

County staff would maintain a list of well drillers and laboratories that provide water sampling and testing services. This list would be available to domestic well and SSWS communities via the DRP website. County Staff would (1) continue to maintain this list with regular updates, (2) post this list on its website, and (3) remind domestic well and SSWS communities of this list during drought or other events that could cause water shortages. County EHD is lead of this LTMSA, with support from County CDD.

5.3.1.3 Supply Interruption Notification for Public Safety Power Shutoffs (LTMS 03)

Due to its heavily forested land and vulnerability to wildfires, there are times when Pacific Power, the only electrical utility in the County, conducts a PSPSs to reduce the potential of wildfire ignition. A PSPS can sometimes last multiple days, which results in domestic well and SSWS communities being unable to pump water supplies. County staff would coordinate with Pacific Power to ensure domestic well and SSWS communities are included in notifications. Pacific Power has a system in place for its service area for all account holders. While individuals need to sign up for notifications, County staff would outreach to domestic well and SSWS communities prior to a PSPS with outreach strategies such as social media posts, emails to distribution lists, and other County supported notification systems. County staff will also coordinate with these power utilities during initial notification. County OES is the lead for this LTMSA with support from County CDD and Pacific Power.

5.3.2 Water Shortage Prevention (LTMSA 04, 05, 06, 07)

These actions and strategies address water supply vulnerabilities by improving the understanding of groundwater conditions and enhancing the resilience of domestic well and SSWS groundwater assets.

5.3.2.1 Water Quality Outreach for Domestic Wells and SSWS (LTMS 04)

County staff may share water quality data with domestic well and SSWS communities on its website and update brochures related to known water quality issues. Communications with domestic well communities would focus on known water quality issues within their area and provide updates as new water quality data is collected. County EHD is the lead of this LTMSA with support from the Public Health Branch.

5.3.2.2 Point-of-Use Water Treatment Installation Outreach (LTMS 05)

Domestic wells and SSWSs in the County are vulnerable to water supply interruptions due to water quality issues. County staff may include informational resources on point-of-use water treatment options and a list of vendors that install such systems. With additional resources, County staff would connect domestic well and SSWS communities to grants or provide direct financial assistance to cover all or a portion of the costs of implementing these water treatment systems. County EHD is the lead of this LTMSA with support from the State's Division of Drinking Water.

5.3.2.3 Grant Application Assistance (LTMS 06)

State and federal grants may be available to domestic well and SSWS owners to help with a variety of items including technical training, new infrastructure, and studies. While the exact availability and resources covered by these grants vary, County staff may include links to major funding organizations such as DWR and the Rural Community Assistance Partnership on its website for domestic well and SSWS owners to check and track. County EHD is the lead of this LTMSA with support from County CDD.

5.3.2.4 Bulk Water Tank Installation (LTMS 07)

Bulk water tank installation at domestic wells and SSWSs could improve water supply reliability in areas commonly subjected to multi-day power outages due to PSPSs or systems that are impacted by climate variability. In the near term, County staff may provide outreach to these system operators to raise awareness of the potential benefits of bulk water tank installation and resources for installation. County EHD is the lead of this LTMSA with collaboration from County CDD.

5.3.3 Water Shortage Prevention when Permitting New or Replacement Wells (LTMSA 08)

Adding new wells, including those replacing an existing well, in areas where existing domestic wells and SSWSs have water supply vulnerabilities can exacerbate those vulnerabilities. This LTMSA helps County staff consider how new wells may affect the water supply vulnerability.

5.3.3.1 Well Permitting Considering Future Growth (LTMSA 08)

When permitting new or replacement wells, County staff may evaluate these permits through the lens of future water use and land development which can help improve overall water supply reliability. When evaluating new permits, County staff would include reviewing other materials to determine if a deeper well than requested should be required, given the potential for increased demands on the same groundwater source. These other materials could include known development plans, and other planning documents that would include information on future water demand projections. County EHD is the lead of this LTMSA with support from CDD.

5.4 System Consolidation (LTMS 09)

System consolidation is the physical or managerial joining of two or more water systems. In the context of domestic wells and SSWSs, these systems can be consolidated with each other and/or a larger water system. System consolidation can improve water supply reliability by broadening water supply sources and/or the numbers of users. With more users in a singular system, operating and maintaining that system can be cost effective compared to smaller or individual systems. This section identifies potential consolidation opportunities for domestic wells and SSWSs. The County DRP identifies potential consolidation opportunities (those identified during development of this County DRP) based on proximity to community water system service area boundaries.

5.4.1 Potential System Consolidation Opportunities

There are system consolidation opportunities for domestic wells and SSWSs within the existing service area boundaries of a community water system[5] While a community water system is not required to provide water service to domestic well and SSWS communities, their proximity may increase the feasibility of system consolidation. There may be nearby water supply infrastructure from a community water system that could connect to domestic wells and SSWSs. Policy or institutional hurdles may be less onerous if domestic wells and SSWSs are in an existing service area.

In this LTMSA, County staff could support domestic well and SSWS communities and community water systems by assisting in the pursuit of funding and additional resources for exploration, development, and implementation of a plan for physical consolidation. County EHD is the lead for this LTMSA with administrative support from the County CDD.

With additional resources, County staff could work with domestic well and SSWS communities and community water systems to further evaluate the opportunity for system consolidation and, if appropriate, develop a plan for system consolidation. This evaluation would include outreach to the domestic well and SSWS communities and community water systems within these areas to better understand the potential system consolidation opportunities (e.g., interest in and willingness to consolidate, water supply availability and water quality constraints, water delivery infrastructure [distance to, components and capacities], potential for funding and financing for a system consolidation study and infrastructure, points of contact). County staff could lead the outreach effort or coordinate with those entities engaged in it.

Domestic Wells and SSWSs in Community Water System service areas. Table 5-3 presents community water systems that likely have domestic wells and/or SSWSs in their service areas. Due to the uncertainty of the domestic well location data, this table may not reflect all community water systems with domestic wells or SSWSs in their service areas. The information in this table highlights where outreach and additional analysis by County staff with these community water systems may be most effective.

[5] As defined in HSC Section 116275(i) a community water system means a public water system that serves at least 15 service connections used by yearlong residents or that regularly serves at least 25 yearlong residents of the area served by the system.

Table 5-3. Community Water Systems with Domestic Wells and/or State Small Water Systems Likely within their Service Area

Community Water Systems with Domestic Wells Likely in Their Service Areas[1,2]	Number of SSWSs Likely in Their Service Areas[2]
Big Rock CSD	0
City of Crescent City	1
Gasquet CSD	0
Hunter Valley CSD	0
Jed Smither Homeowner Association	0
Klamath CSD	0
Redwood Park CSD	0
Smith River CSD	0

Table Notes:

[1] Number of domestic wells within a community water system's service area are not shown as they may be inaccurate due to the locations of some domestic wells not being known.

[2] Domestic wells and SSWSs within a community water system's service area are based on the established service area boundary and do not reflect the proximity to existing water delivery infrastructure. Additional analysis would be needed to determine the proximity of domestic wells and SSWSs to existing water delivery infrastructure.

Key:

CSD = community services district

Groupings of Domestic Wells and SSWSs near Community Water Systems. The proximity of domestic wells and SSWSs to service areas of community water systems was also evaluated to identify system consolidation opportunities. Concentrations of SSWSs and domestic wells and their proximity to a community water system are presented in Figure 5-1. Areas with a higher concentration of domestic wells and SSWSs within 1-mile of a community water system are highlighted in this figure into areas of system consolidation opportunity. Table 5-4 summarizes those areas of consolidation opportunity, including the number of domestic wells and SSWSs in each area and the nearby community water systems. Note that some of the areas of system consolidation opportunity highlighted in Figure 5-1 may also overlap with domestic wells and SSWS within a community water system's boundary as described above.

There may also be system consolidation opportunities outside the areas shown and described below. County staff would stay comprised of all potential opportunities as they arise.

Evaluating Consolidation Opportunities in the County: In this LTMSA, County staff will support domestic well and SSWS communities and community water systems by assisting in the pursuit of funding and additional resources for exploration, development, and implementation of a plan for physical consolidation.

With additional financial and/or staff resources, County staff would work with domestic well and SSWS communities and community water systems to further evaluate the opportunity for system consolidation and, if appropriate, develop a plan for system consolidation. This evaluation would include outreach to the domestic well and SSWS communities and community water systems within these areas to better understand the system consolidation opportunities (e.g., interest in and willingness to

consolidate, water supply availability and water quality constraints, water delivery infrastructure (distance to, components and capacities, etc.), potential for funding and financing for a system consolidation study and infrastructure, points of contact). County staff could lead the outreach effort or those entities engaged in it.

Table 5-4. Areas with Opportunity for Domestic Wells and State Small Water Systems Consolidation

Area of System Consolidation Opportunity	Approximate Number of Domestic Wells within 1 mile of a Water System Boundary	Number of SSWSs	Community Water Systems that Could be Involved in Consolidation with Domestic Wells or SSWSs
Area 1: Smith River	19	0	Smith River CSD
Area 2: Crescent City to Fort Dick	48	1	Bertsch–Ocean View CSD Church Tree CSD Crescent City CSD HRC CSD
Area 3: Klamath Area	13	0	Redwood Park CSD Klamath CSD Hunter Valley CSD
Area 4: Gasquet	4	0	Gasquet CSD

Key:
CSD = community services district

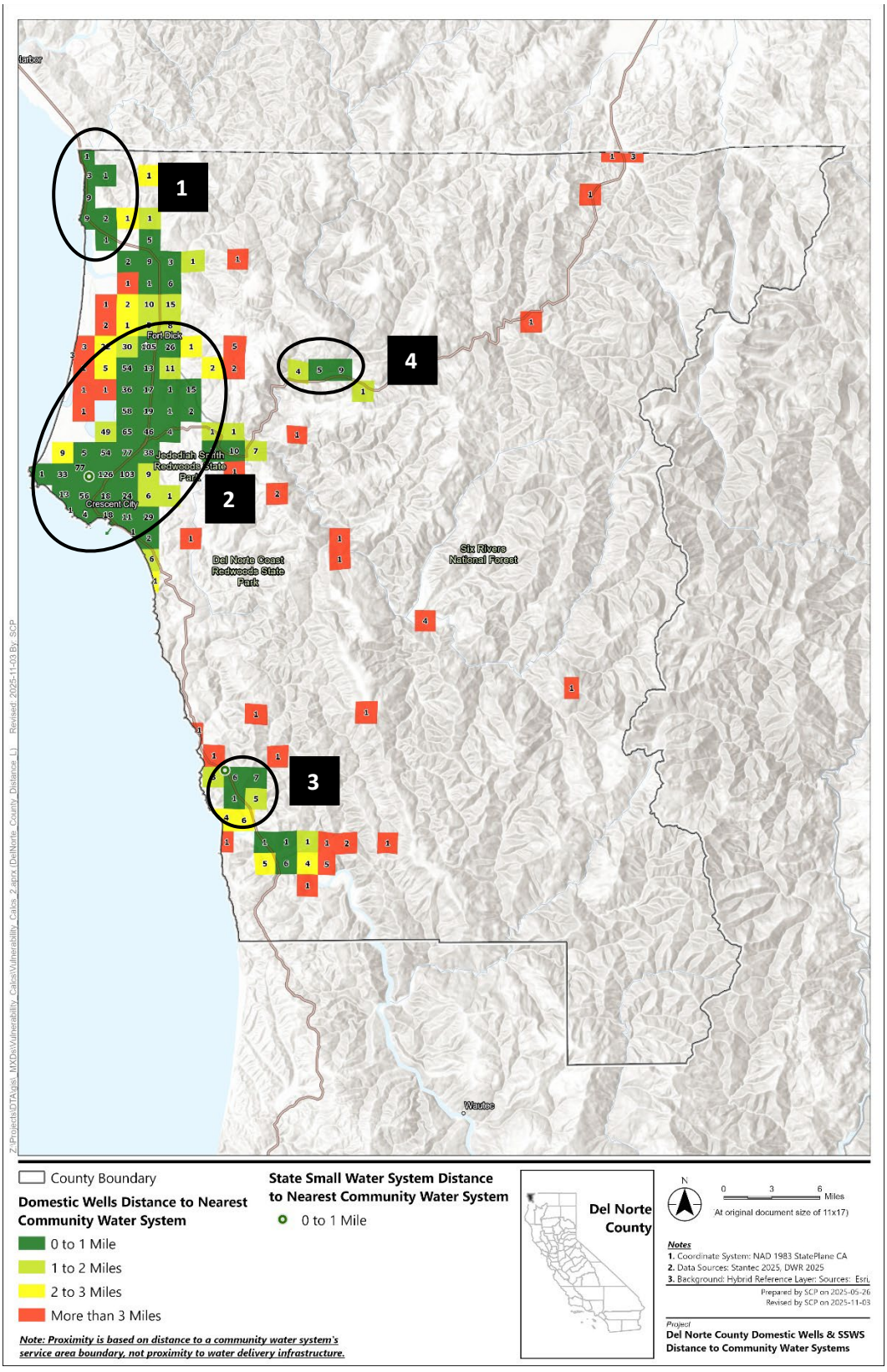


Figure 5-1. Areas with Opportunity for Domestic Wells and State Small Water System Consolidation

5.5 Regional Water Infrastructure Investment

Regional water infrastructure projects can enhance the water supply reliability of many communities, including domestic wells and SSWSs. The LTMSAs in this section describe how County staff could integrate into regional planning and regional water infrastructure to help enhance the water supply reliability of domestic well and SSWS communities. Additional information on the near-term integration into regional planning or water infrastructure is included in Section 6.3.

5.5.1 County Planning Integration (LTMSA 10)

Many regional and County planning efforts intersect with the County DRP. Coordination by County staff within these other regional and County planning efforts will help ensure these plans consider domestic wells and SSWSs. Table 5-5 details the relevant regional planning efforts, their current status, and their intersection with domestic wells and SSWSs. For LTMSA 10, County staff may participate when the planning effort is occurring and provide the perspective of domestic well and SSWS communities. Additional information on the timing and County roles/responsibilities for these efforts is presented in Section 6.3.

Table 5-5. Summary of Relevant Regional Planning Efforts

Planning Effort	Current Status	Intersection with Domestic Wells and SSWSs
County General Plan (Del Norte County 2003)	January 2003, Amended May 2021	The County general plan covers areas with domestic wells and SSWSs.
Hazard Mitigation Plan (Del Norte County 2019)	June 2019 Update near completion in spring 2026)	This plan identifies and provides mitigation strategies for hazardous conditions such as drought, floods, storms, and wildland fires that have potential to impact the water supply reliability of domestic wells and SSWSs.
Smith River Plain Water Quality Management Plan (NCRWQCB 2021)	November 2021	This plan identifies pesticide runoff from lily bulb farming in the Smith River Plain that has exceeded EPA benchmarks in surface waters. This contamination may affect domestic wells and small water systems by increasing the risk of groundwater pollution, especially in areas connected to impacted surface flows.
2020 Urban Water Management Plan for Crescent City, California	June 2021	This plan evaluates an urban water supplier's water supplies, demands, reliability, conservation measures, and drought response strategies to ensure long-term water supply reliability within the supplier's service area.
City of Crescent City MSR	Adopted January 28,2019	The MSR covers areas with domestic wells and SSWSs.
Bertsch-Ocean View MSR	Adopted April 20, 2020	The MSR covers areas with domestic wells and SSWSs.
Big Rock MSR	Commission Approved - November 24, 2025	The MSR covers areas with domestic wells and SSWSs.

Planning Effort	Current Status	Intersection with Domestic Wells and SSWSs
Church Tree MSR	Adopted September 24, 2018	The MSR covers areas with domestic wells and SSWSs.
Gasquet MSR	Adopted April 25, 2016	The MSR covers areas with domestic wells and SSWSs.
HRC (Hussey Ranch) MSR	Adopted September 24th, 2018	The MSR covers areas with domestic wells and SSWSs.
Smith River MSR	Commission Approved September 30, 2024	The MSR covers areas with domestic wells and SSWSs.
South County CSDs MSR & SOI (Hunter Valley, Klamath, and Redwood Park) MSR	Commission Approved March 2022	The MSR covers areas with domestic wells and SSWSs.

Key:
EPA = Environmental Protection Agency
MSR = Municipal Services Reviews
SSWS = State Small Water System

5.6 Data Gaps (LTMSA 11, 12)

The County DRP used available data to support (1) evaluation of the vulnerability of domestic wells and SSWSs to water shortages, and (2) development and alignment of effective STRAs and LTMSAs. Access to new or more accurate and complete data would help improve this planning process in the future. This section details the LTMSAs identified by the County DRP that would provide new or improved data for use in future planning efforts.

5.6.1 Dry Well Reporting and Abandonment (LTMSA 11)

DWR established an online Dry Well Reporting System for domestic well communities to report problems with their wells that impact their water supplies (DWR 2026). County staff will monitor information submitted in this system to assist in identifying areas with current or past water shortages that can help inform the potential for future water shortages.

County staff to review dry well reporting data published by the State and compare with groundwater well permit applications and well completion report data to identify wells for abandonment. County staff would coordinate with DWR to update information in the well completion report. This coordinated review and update of well-related information will help develop a more comprehensive understanding of dry wells and water shortage issues in the County. County EHD is the lead of this LTMSA with support from DWR.

5.6.2 Dry and Distressed Well Tracking (LTMS 12)

A data gap in the County's groundwater profile is the accuracy of dry well reports and the tracking of distressed wells. The availability and accuracy of this information is currently limited. For example, existing well permitting practices do not require permittees to identify the purpose of the new well (i.e., dry well, failed well, new service). While the State's Dry Well Reporting System (DWR 2026) for private domestic well operators is voluntarily to report dry well conditions, awareness and use of the program is limited. Additionally, not all domestic well and SSWS owners with a dry or impacted well may submit a report over concern of regulatory enforcement or a desire to keep the well in place as a potential back-up resource. To track locations where replacement wells are installed, County staff may revise the well

permit application so that the applicant would indicate if a well is replacing a dry well. Tracking these wells would allow for monitoring for appropriate abandonment consistent with County ordinance. County EHD is the lead of this LTMSA with support from County OES and DWR.

6.0 Implementation Considerations

The STRAs and LTMSAs identified and described in Chapters 4 and 5 represent the range of in-progress and proposed activities. Implementation of these STRAs and LTMSAs often (1) falls under the authorities and jurisdictional responsibilities of separate County departments and other local and State public agencies, and (2) requires the involvement of other interested parties. To implement these STRAs and LTMSAs, and contribute to continued improvement of water supply reliability for domestic well and SSWS communities, this section describes the implementation steps designed to assist the County with:

- Ongoing water supply monitoring and interagency collaboration in support of implementation
- Outlining STRA and LTMSA implementation responsibility, status, and resource needs
- Identifying opportunities to align the County DRP with other County policy and County and regional planning documents
- Adaptive management
- Identifying funding opportunities

6.1 Legislative Direction

SB 552 requires the County to develop a drought and water shortage plan that analyzes the steps to implement the plan and funding sources available to support implementation, per CWC Section 10609.70 (**boldface** added for emphasis as related to plan implementation and this section of the County DRP):

> *(b) A county shall develop a plan that includes potential drought and water shortage risk and proposed interim and long-term solutions for state small water systems and domestic wells within the county's jurisdiction. The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. A county shall consult with its drought task force or alternative coordinating process as established by this section in developing its plan. A county shall consider, **at a minimum**, all of the following in its plan:*
>
> *(1) Consolidations for existing water systems and domestic wells.*
>
> *(2) Domestic well drinking water mitigation programs.*
>
> *(3) Provision of emergency and interim drinking water solutions.*
>
> ***(4) An analysis of the steps necessary to implement the plan.***
>
> ***(5) An analysis of local, state, and federal funding sources available to implement the plan***

6.2 Implementation Roadmap

The County DRP describes existing and proposed STRAs and LTMSAs that, when executed, help the County meet its objectives under CWC Section 10609.70 (b)(1), (b)(2), and (b)(3). Implementing these STRAs and LTMSAs will require resources and clear roles and responsibilities. The identified STRAs and LTMSAs include existing or new activities to be implemented under existing authorities and funding of County departments and those activities that are dependent on appropriation of funds from local, State,

or federal resources. This section presents the implementation roadmap for this County DRP, identification of ongoing monitoring and collaboration with County staff, and conduct of management oversight, prioritization, and resource identification needs.

6.2.1 Monitoring and Collaboration

Supply monitoring and interagency collaboration support County DRP implementation by evaluating water supply reliability and maintaining ongoing coordination and collaboration among County departments, related organizations, and the Task Force. County staff will conduct a range of activities as described in Table 6-1. These activities may be superseded by the activities described in Section 4.4 if a drought or water shortage emergency has occurred.

Table 6-1. Del Norte County Drought Resilience Plan Monitoring and Collaboration Activities

Activity	Description	Activity Lead	Timing
Task Force Meeting	County staff will schedule and facilitate a minimum of one Task Force meeting annually. The meeting will follow the Environmental Health Division's update of its annual water supply condition assessment (see Section 4.4.1). Results of this assessment shall support County staff, working in collaboration with its Task Force, by identifying potential activation of water shortage response measures as described in this plan.	County CDD	April of each year
Water Supply Condition Assessment	County staff will engage with agencies and organizations that monitor physical risk factors and water supply conditions to evaluate water supplies associated with domestic well and SSWS communities (see Section 4.4.1). Coordinating agencies to include public water system and DWR.	County Environmental Health Division, in collaboration with County OES and County CDD	Annually (March of each year)
Internal Coordination	Annual meeting to inform development of the water supply condition assessment and presentation for the annual Task Force meeting.	County CDD, in coordination with County Environmental Health Division, and County OES	Annually (March of each year; concurrent with annual water monitoring)
Drought Resilience Plan Website Update	County staff will update the website content and resource materials as described in the Water Supply Condition Assessment. This includes any contact info, list of resources (vendors, links to external websites, etc.), and other website content.	County Environmental Health Division	April of each year prior to Task Force meeting, and as water supply conditions merit

Key:
County = Del Norte County
County CDD = Del Norte County Community Development Department
County OES = Del Norte County Office of Emergency Services
DWR = California Department of Water Resources
Task Force = Del Norte County Drought and Water Shortage Task Force

6.2.2 Oversight, Responsibilities, Priorities, and Resource Needs

Individual STRAs and LTMSAs identified in this County DRP have been assigned to individual County departments and agencies pursuant to each agency's regulatory and policy authorities. County CDD, as lead agency of the County DRP, shall provide administrative oversight and collaboration for all implementation actions that fall outside of its regulatory and policy authorities.

Table 6-2 details the type, status, and lead of County DRP STRAs and LTMSAs. Activities described in this table are subject to modification based on climate conditions, engagement with the Task Force, and other relevant factors. While activities have been assigned a near-, mid- and long-term priority status, the pace of an activities implementation schedule can be changed depending on various drivers such as new regulations, climate conditions and funding. "Priority" is classified as:

- Near term (in the next 2 years)
- Mid term (within 2 to 5 years)
- Long term (5 or more years in the future)

"Status" is classified as:

- Available
- In progress (for those currently being implemented)
- Proposed (for those that require additional resources)

The "Resource Requirement" columns specify if the STRA/LTMSA would require additional staff time, additional County budget, and external funds beyond what the County currently has available. These external funds could include grants, financing, Federal funding, and future State funding to support DRP implementation.

Beyond these implementation activities, County CDD will coordinate with the entities listed in Table 6-2 on mid-term and long-term priorities. The status of these mid-term and long-term priorities, as well as the information in this table, will be reviewed at least annually in coordination with the Task Force meeting.

Table 6-2. Del Norte Drought Resilience Plan Short-Term Response Action and Long-Term Mitigation Strategy and Action Implementation Summary

Action/Strategy ID and Name	Lead Agency	Coordinating Agency	Priority	Status	Resource Requirement		
					Additional Staff Time	County Budget	External Funds
STRA 01: Packaged and Bottled Water Supplies	County OES	County CDD	Near Term	Available	Yes	Yes	Yes
STRA 02: Dedicated Water Filling Stations During a Water Shortage	County OES	County CDD	Near Term	Proposed	Yes	Yes	Yes
STRA 03: Water Hauling, Bulk Water for Temporary Tanks	County OES	Public water system DWR County EHD	Near Term	Proposed	Yes	Yes	Yes
STRA 04: Expedited Well Permitting	County EHD	County CDD	Near Term	Available	No	No	No
LTMSA 01: Domestic Well and SSWS Resource Website	County EHD	County CDD County OES	Near Term	Available	No	No	No
LTMSA 02: Maintain Network of Vendors and County Contacts	County EHD	County CDD	Near Term	Available	No	No	No
LTMSA 03: Supply Interruption Notification for PSPSs	County OES	Pacific Power County CDD	Near Term	Available	Yes	No	No
LTMSA 04: Water Quality Outreach for Domestic Wells and SSWSs	County EHD	County PHB	Near Term	In Progress	Yes	No	No
LTMSA 05: Point-of-Use Water Treatment Installation Outreach	County EHD	County DDW	Near Term	In Progress	Yes	Yes	No
LTMSA 06: Grant Application Assistance to Domestic Wells and SSWSs	County EHD	County CDD	Mid Term	Proposed	Yes	Yes	Yes
LTMSA 07: Bulk Water Tank Installation	County EHD	County CDD	Mid Term	Proposed	Yes	Yes	Yes
LTMSA 08: Well Permitting Considering Future Growth	County EHD	County CDD	Near Term	Available	Yes	Yes	Yes

Action/Strategy ID and Name	Lead Agency	Coordinating Agency	Priority	Status	Resource Requirement		
					Additional Staff Time	County Budget	External Funds
LTMSA 09: System Consolidation	County EHD	County CDD	Long Term	Proposed	Yes	Yes	Yes
LTMSA 10: County Planning Integration	County OES	County CDD	Near Term	Available	No	No	No
LTMSA 11: Dry Well Reporting and Abandonment	County EHD	DWR	Near Term	In Progress	No	No	No
LTMSA 12: Dry and Distressed Well Tracking	County EHD	County OES DWR	Near Term	In Progress	No	No	No

Key:
County = Del Norte County
CDD = Del Norte County Community Development Department
DRP = Del Norte County Drought Resilience Plan
DWR = California Department of Water Resources
EHD = Del Norte County Environmental Health Division
LTMSA = Long-Term Mitigation Strategy or Action
OES = Del Norte County Office of Emergency Services
STRA = Short Term Response Action
SSWS = State Small Water System

6.3 Policy Alignment and Integration

While this County DRP is a stand-alone document, the information and actions contained in it provide mutual benefits towards realizing goals and objectives of other County and regional planning efforts associated with domestic well and SSWS communities. Table 6-3 describes recommended policy alignment and/or integration actions that promote delivery of STRA and LTMSA actions identified in this County DRP through coordinated efforts with other related County and regional planning efforts.

Table 6-3. Del Norte County Drought Resilience Plan Policy Alignment and Integration

Related Planning Effort	Release Date	County Lead	Integration Activity
County General Plan	January 2003, Amended May 2021	County CDD	County staff could participate as needed when elements of the County general plan are updated, with consideration of drought resilience actions and their relation to domestic wells and SSWSs.
Hazard Mitigation Plan	June 2019	County OES	County staff could participate as needed with the perspective of domestic wells and SSWSs.
North Coast IWRMP	2014	County CDD	County staff could remain situationally aware, and participate as needed, when the regional plan is updated. County staff can incorporate the perspective of domestic wells and SSWSs into the planning process.

Key:
County = Del Norte County
County CDD = Del Norte County Community Development Department
County OES = Del Norte County Office of Emergency Services
IWRMP = Integrated Regional Water Management Plan
SSWS = State Small Water System

6.4 Adaptive Management

The County DRP will be reviewed and updated periodically or in response to new information or changing conditions to ensure findings, STRAs, and LTMSAs are appropriate and relevant. At a minimum, this County DRP will be reviewed and updated by County staff every five years. The County DRP may also be revisited after major droughts, water shortage events, changes in GSA status, and when new data, strategies, policies, or requests from the Task Force arise. County CDD is responsible for initiating and coordinating the County DRP update.

Updates to the County DRP will include: (1) reviewing the risk assessment findings in light of new and improved information that characterizes water supply vulnerability, (2) evaluating progress on STRA LTMSA implementation, (3) updating any communications and outreach materials and information, (4) updating Task Force details, and (5) revising the County DRP content to incorporate any changes. During this update, the County CDD will brief the Task Force on these updates to ensure transparent communication and coordination.

6.5 Funding Opportunities and Assistance Programs

As described in Table 6-2, this County DRP includes a variety of proposed activities that require appropriation of additional funds as approved by the County Board of Supervisors or through other State or federal sources. Receipt of these additional funds could involve a variety of activities both for County staff and domestic well and SSWS owners/operators, including:

- Plan administration, management, and updates
- Submitting funding applications and administering agreements
- Outreach and communications
- Coordination with other agencies and entities
- Task Force engagement
- Managing assistance programs
- Development and construction of infrastructure and associated operations, maintenance, repair, rehabilitation, and eventual replacement
- Other efforts

As SB 552 does not provide funding for implementation activities, this DRP analyzes local, State, and federal funding sources available to implement the plan.

A combination of funding sources could be used to support County DRP implementation—such as grants, loans, agency staff time, services provided by others (e.g., in-kind work, technical or training assistance through a State or federal agency)—with various agencies and entities involved in securing and administering each source. The availability of these internal and external funding sources will impact the success and timeliness of DRP implementation.

Although access to reliable funding is a hurdle faced by agencies and entities when implementing any program or project, domestic well and SSWS owners and operators are the most acutely impacted due to limited staff, reserves, and requirements of the implementing agencies. Agencies and entities may find (1) it is cost- and resource-prohibitive to implement STRAs and LTMSAs by themselves; (2) solutions frequently require participation or involvement of other entities; and (3) it is challenging to prepare for, navigate, apply for, and administer the various local, State, and federal funding mechanisms that could be available at any given time. These system owners/operators will need assistance and support from the County and other agencies and entities.

Using the STRAs and LTMSAs developed for the County (listed in Sections 4.3 and 5.2, respectively), this DRP investigated and analyzed potential funding sources for implementation, as shown in Table 6-4. This analysis presented in this table will be used as basis for developing future funding strategies and is not a complete or exhaustive list. Note that available funding sources are constantly changing, and funding needs, timing, and potential opportunities should be periodically reassessed.

Table 6-4. Funding Opportunities and Assistance Programs for Drought Resilience Plan Implementation

Resource	Funding Agency	Description
General Fund	County	The County's General Fund includes revenues such as sales and property tax. Use of these fund are discretionary and subject to approval by the Board of Supervisors.
Proposition 4: Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024	Multiple State agencies	Major categories with potential support for domestic and SSWS communities include: • Safe drinking water, drought, flood, and water resilience • Wildfire and forest resilience • Coastal resilience
Countywide and Regional Funding Program (State Water Board 2023)	State Water Board	This program provides direct funding to support SSWS and domestic wells serving disadvantaged communities and low-income households. Community outreach, domestic well testing, and interim and long-term solutions are eligible to receive funds (DWR 2020)
Drinking Water State Revolving Fund (State Water Board 2026)	State Water Board	This fund provides low-cost loans for planning, design, and construction of drinking water improvements to water systems and can be used to support system consolidation.
Technical Assistance Funding Program (State Water Board 2025)	State Water Board	This program provides technical assistance for small, disadvantaged communities to develop, fund and implement eligible drinking water needs, including system consolidation support.
Water and Environmental Program (USDA 2025)	USDA	Through the Rural Utilities Service Water and Environmental Programs, communities with populations of 10,000 or less can submit for funding support to construct water and wastewater facilities. Such programs could support annexation of SSWSs and domestic well communities as part of a multi-benefit project led by a WEP-eligible public water system.

Key:
DWR = California Department of Water Resources
SSWS = State small water system
State Water Board = State Water Resources Control Board
USDA = United States Department of Agriculture
WEP = Water and Environmental Program

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