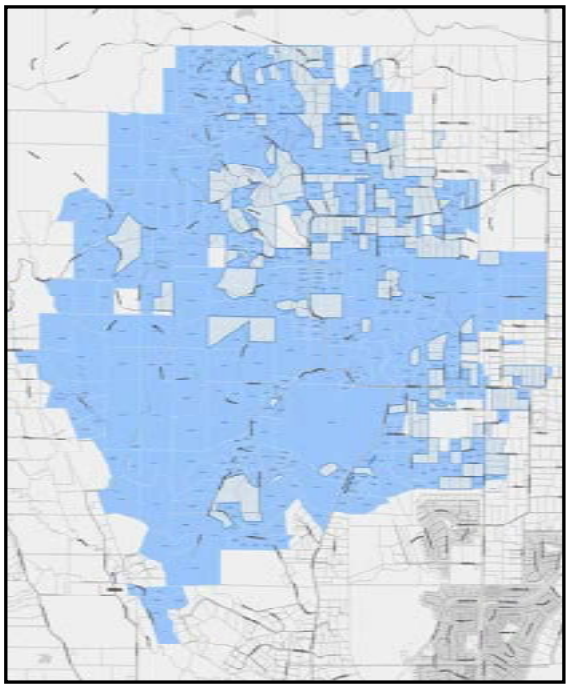

Rural North Vacaville Water District

RURAL NORTH VACAVILLE WATER DISTRICT MUNICIPAL SERVICE REVIEW

Final

PREPARED BY

MILANI & ASSOCIATES

IN COLLABORATION WITH
CRAFT CONSULTING GROUP,
MMS DESIGN and
Darling H2O

FOR

SOLANO LAFCO
675 TEXAS STREET, SUITE 6700
FAIRFIELD, CA 94533
707-439-3898

April 22, 2022

Rural North Vacaville Water District

MUNICIPAL SERVICE REVIEW
AND
SPHERE OF INFLUENCE UPDATE

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Robert Guerrero, Public Member (Alternate)

Staff

Rich Seithel, Executive Officer
Jeffrey Lum, Analyst II

CONSULTANT TEAM

Mike Milani, Milani & Associates, Civil Engineers & Surveyors
Gary W. Craft, Craft Consulting Group, Economics & Planning
Mike McGill, MMS Design, Civil Engineering & Land Planning
Gary Darling, Darling H2O Consulting, Inc

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Chris Calvert, President
Robert Whitehouse, Vice-President
Patrick Sweeney, Director
Elizabeth Miles, Director
Steven Strickland, Director
Gordon Stankowski, Gen Mgr
Weston Stankowski

Solano Irrigation District
Sue Murphy
Paul Fuchslin

Solano LAFCO
Rich Seithel
Jeffrey Lum

Solano Resource Management
Nedzlene Ferrario
Mathew Walsh
James Leland
Allan Calder)

Solano Board of Supervisors
John Vasquez

Vacaville Fire Protection District
Chief Howard Wood

EXECUTIVE SUMMARY

The Solano Local Agency Formation Commission (LAFCO) contracted with Milani and Associates to prepare a robust special study and Municipal Service Review (MSR) that clearly outlines the guiding policies (written and unwritten) and that also satisfies the state-required comprehensive study of services for an MSR and Sphere of Influence (SOI) update of the Rural North Vacaville Water District (RNVWD).[1] This report addresses the Cortese-Knox-Hertzberg Local Government Reorganization Act (CKH) required determinations and is divided into the following eight sections within the main body of the report: 1) Introduction; 2) Regional Setting; 3) Groundwater Regulation; 4) Community Service Districts; 5) District Profile and Overview; 6) Municipal Serve Review; 7) Sphere of Influence Analysis; and 8) Determinations and Recommendations. This MSR is exempt from the California Environmental Quality Act (CEQA) under a Class 6 categorical exemption. RNVWD was last reviewed as part of a multi-district MSR in 2015.

Methodology

In order to evaluate RNVWD, the consultant team conducted a comprehensive MSR/SOI review of relevant material and used a variety of data sources regarding the district's operation, capacity, governance, and financial condition. More specifically, the study included an analysis of:

- the District's service capabilities,
- water source and supply,
- water quality & treatment,
- current consumption, anticipated water demand, impact of droughts and climate change on the District's water supply, and
- other critical areas of concern, such as future growth potential and the need for a reliable water supply.

Outreach included meetings and interviews with RNVWD staff, LAFCO staff, District Board Members, Solano Irrigation District, Fire District, and other knowledgeable experts. Extensive research also included review of state and local water reports, Solano Groundwater Sub-basin technical reports, District formation documents, State Water law, Community Service District law, Census and ESRI demographic data, assessor parcel information and acreage, land use and zoning information, financial statements, and utilization of in-house subject matter experts.

Analysis included review of District operations, governance, annual revenue and expenses for the past five years, capital improvement plans, annual water supply and consumption trends, and other information affecting the agency's ability to provide service to existing and planned customers within its service area.

In collaboration with LAFCO staff, RNVWD's district boundaries and SOI were corrected and updated. LAFCO staff undertook this critical effort by mapping and identifying each individual APN from the District's origin, based on the original formation documents,

[1] Under the Cortese-Knox-Hertzberg Local Government Reorganization Act (CKH Act), Solano LAFCO is responsible for conducting a comprehensive periodic review of the capacity and adequacy of the services offered by local agencies under its jurisdiction.

through each subsequent approved annexation and detachment up to the end of 2021. The updated boundary map with parcel information allowed for detailed analysis of parcel size, acreage, zoning, water rights, service connections, and potential lot splits.

Key excerpts and findings from the study are highlighted below. The detailed analysis and a complete list of the findings may be found in the eight sections of the full report following this Executive Summary.

District Description & Operation

Rural North Vacaville Water District is a Community Services District (CSD) that was formed in 1996, to provide potable water for domestic use and fire suppression purposes. The water system serves an unincorporated community in Solano County that lies north of the city of Vacaville in the Cantelow Road, English Hills, Gibson Canyon, and Steiger Hill neighborhoods ("English Hills" area). The District encompasses 5,162.7 acres of rural residential and agricultural lands and serves a population of approximately 1,118 residents.

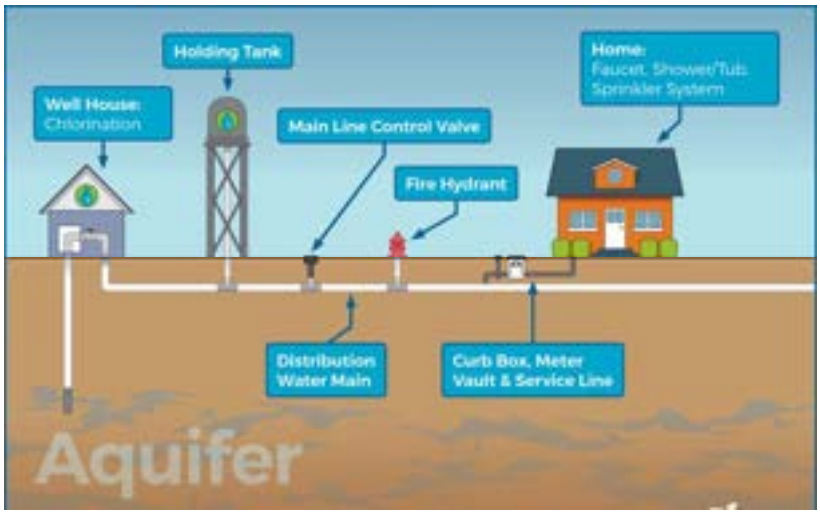
The District operates and manages a public water system whose sole source of water comes from two groundwater wells, drilled to a depth of approximately 1,400 feet, located in the basal zone of the Tehama Formation aquifer. Each well is equipped with 75 horsepower pumps. Well #1 has a standby generator (in the event of a PG&E outage) and Well #2 will have a generator by June 2022. Well #1 produces 350 gallons of water per minute (gpm) and serves as the primary water supply. Well #2, which serves as a standby source, also has a pump capacity of 350 gpm, but is permitted only for emergency use due to a history of arsenic levels that exceed State and Federal standards and can only be used for five consecutive days no more than 3 times per year.[2] The District has taken action to bring Well #2 into compliance by the Spring Quarter of 2022.

Groundwater from the wells is chlorinated before being pumped into two 300,000 gallon water storage tanks that gravity feed the distribution system aided by booster pumps. Treated water is then delivered to 398 customers (as of December 2021) via some 40 miles of distribution mains consisting mostly of Class 150 and 200 PVC pipes ranging in size from 4 inches to 12 inches in diameter across five pressure zones (see schematic diagram).

According to the State Division of Drinking Water the district provides a reliable and adequate water supply to meet the needs of its current customers based on the use of Well #1 as the primary source and Well #2 as an emergency supply and is in compliance with the provisions of its domestic water supply permit, which was issued on June 16, 2000. [3]

[2] RNVWD is actively taking steps to address the arsenic problem and bring Well #2 online in a fulltime capacity.
[3] California State Water Resources Control Board, *"Sanitary Survey Report for RNVWD"*, April 2017

Schematic Diagram of Typical Groundwater System



Current Water Consumption & Future Demand

RNVWD's water system was designed to have sufficient capacity to serve 533 households based on an Engineer's Report[4] at the time of district formation. In addition to the parcels that benefit from domestic water service, the system also provides water to 78 hydrants that serve as fire refill stations serving approximately 711 parcels. The system has sufficient capacity, even with Well #2 being used only on an emergency basis, to deliver a reliable and adequate water supply to the target population of 533 households. However, future growth in the English Hills area will require a long term solution that addresses the need for a public water supply.

Current Consumption: RNVWD currently provides water service to 398 parcels with metered service connections and backflow preventers installed serving an estimated population of 1,118 residents. Water consumption figures for 2020 show an average daily demand of 144,729 gallons per day (for an average of 364 gpd per connection or 128 gpd per person). Meter readings indicate that consumption per connection varies from zero to 1,727 gallons). The peak month's (August) maximum day demand was 381,806 gallons (or 339 gpd per person).

Table 1: Water Consumption (millions of gallons)

Low Month (January)	1.47	MG
Peak Month (August)	7.89	MG
Average Month	4.40	MG
Annual Total	52.83	MG
Maximum Day Demand (MDD)	**0.38**	**MG**

Source: 2020 Annual Drinking Water Report

Design Capacity: In addition to the active service connections, there were 135 undeveloped connections available as of June 2020. These remaining 135 undeveloped service connections include 10 for lot splits that were never connected, 113 supplemental connections for

[4] Coastland Civil Engineering, *"Engineer's Report for Supplemental Assessments to the RNVWD Assessment District"*, Revised January 5, 2001

property owners anticipating subdividing their property at some future date, and 12 water rights available for sale available or for annexations pending district and/or LAFCO approval. The 135 undeveloped connections represent an increase of approximately 389 additional residents.

Once all 533 service connections have been installed the district will have reached the target design parameters of the existing water system serving an estimated population of approximately 1,492 residents with an estimated average daily demand of 191,714 gpd (and a MDD of 505,757 gpd) based on 2020 consumption levels. Any additional service connections beyond the system's design parameters will require a new engineering report to support expansion of the existing system, including pump and storage capacity, water pressure and flow rate, and distribution pipe size and configuration.

Potential Future Demand for Water Service: Over the next five years it is expected that there will be similar annexation requests. The district has received numerous annexation requests since its formation in 1996. The primary purpose of the requests was to address inadequate water supplies from shallow private wells in the English Hills area. In addition, there are parcels located inside the District's current boundaries without water rights or service connections. Parcels larger than the minimum size allowed by the zoning have the potential for being split into two or more lots. It is important to note that the County's General Plan requires residential development zoned on lots with a minimum parcel size of 2.5 acres to be on a public water system. The District's ability to provide a reliable and adequate water supply beyond its initial design capacity of 533 service connections may be limited. To address the long-range water supply needs for the English Hills area the District and County Planning staffs should review the need for a comprehensive infrastructure solution for a public water system to serve future development.

Capacity of Existing Water System

Critical components that affect the District's ability to provide a reliable and adequate water supply that complies with State Water Board Standards include:

a) System Design and Configuration - The existing system has adequate capacity to serve its current 398 customers, plus an additional 135 service connections for a total of 533 customers. Should the District decide to expand the number of service connections an updated engineering report would be required to evaluate the impact on system capacity. Before expanding the capacity the District should fully address the arsenic issue with Well #2 and bring it online.

"RNVWD can comply with the Waterworks Standards based on use of the Well #1 reliable source, storage, and Well #2 emergency supply capacity."

State Division of Drinking Water
2019 RNVWD Annual Water Report

b) Water Supply Capacity - RNVWD is required to have sufficient source capacity and storage to meet the Maximum Daily Demand (MDD) per Title 22, Section 64554 of the California Code of Regulations. The total production capacity of the active production Well #1 is approximately 0.504 MGD. Additional capacity is available from Well #2 on an emergency basis for a maximum of five consecutive days no more than three times per year due to elevated levels of arsenic (see Table 2). Two 300,000 gallon water storage tanks provide additional capacity to meet the maximum day demand. The total storage capacity combined with production from Well #1 is greater than the MDD at full build-out of all 533 service connections. According to the State Division of Drinking Water,

RNVWD has sufficient capacity to meet its MDD and comply with California Division of Drinking Water (DDW) requirements based on use of Well #1 for reliable source, storage, and Well #2 as an emergency supply.

Table 2: System Capacity (millions of gallons)		
Well #1 (350 gpm)	0.504	MGD
Well #2 (350 gpm)	0.504	MGD
Total Production Capacity	**1.008**	**MGD**
Storage Tank #1	0.300	MG
Storage Tank #2	0.300	MG
Total Storage Capacity	**0.600**	**MG**
Total Single Day Capacity (Production + Storage)	**1.608**	**MG**

c) Aquifer Capacity & Recharge Rate – RNVWD's sole source of water is from the basal zone of the Tehama Formation aquifer. While several studies have attempted to provide preliminary estimates, the capacity and recharge rate of the aquifer is uncertain. A groundwater study[5] for the city of Vacaville found that *"groundwater levels in the RNVWD monitoring wells showed declining water levels from* 2000-2015*. The trends in these wells are likely due to local pumping effects from the RNVWD water supply well and a higher level of connectivity between the middle and deeper (basal) Tehama Formation deposits."* RNVWD's long-term reliance on groundwater requires ongoing monitoring of groundwater levels to determine a safe sustainable yield based on the recharge rate of the aquifer.

District Water Rights/Service Connections

A system of water rights (defined by the District as a developed, undeveloped, or supplemental service connection) was created based on the water system's design capacity of 533 service connections. When the district was formed property owners had the option to purchase additional connections within ten years to serve lots to be created by future subdivision of an existing parcel. When the time period for exercising the options expired, 47 of the reserve connections reverted back to the District's ownership and made available for sale on a first come, first serve basis. The configuration (as of June 30, 2021) includes 398 service connections and 130 water rights/service connections that have been allocated, but not developed with meters and back flow preventer values, and five water rights owned by the District that were available for sale. Currently, all but one of the remaining water rights has been allocated pending a future sale and annexation.

Governance Accountability & Efficiency

RNVWD is governed by an independent five-member Board of Directors elected at large by registered voters in the district. Board members serve for four-year terms and receive no compensation. Board meetings are held bi-monthly and are open to the public in accordance with Brown Act requirements. The District communicates on a regular basis with its customers through a semi-annual newsletter and a SB 272 compliant website. The district has

[5] Luhdorff & Scalmanini Consulting Engineers, "Vacaville Groundwater Source Sufficiency Technical Memorandum," May 2016

received several awards from the Special District Leadership Foundation in recognition of its efforts to promote transparency and good governance.

Day-to-day operations are managed by a part-time staff of independent contractors, including a General Manager, clerk/administrator, billing manager/bookkeeper, and meter reader. RNVWD contracts with Solano Irrigation District (SID) for engineering services and the physical operation and maintenance of the water distribution system. SID performs all of the required functions to keep the water system in good running order in compliance with federal, state, and local standards.

Financial Ability

RNVWD operates as an Enterprise Fund, where the costs of providing services are financed primarily through user charges and fees. The District does not receive any share of the County ad valorem property taxes. A special assessment of property owners was used to finance the initial construction of the district's wells and water distribution system. The loans have been repaid as of 2021 and the District is currently debt free. A new ten year bank loan for $1.2 million has been approved for installation of a water treatment system to reduce arsenic levels to comply with State and Federal standards.

The District's current operating budget for fiscal year 2021-22 totals $1.0 million. The Board recently adjusted its rate schedule to cover increased operating and maintenance expenses. The District has an adopted 10-Year Capital Improvement Plan that includes equipment replacement, system improvements, maintenance activities, water quality, and replacement of instrumentation, control equipment, and meters. RNVWD maintains several reserve funds to cover debt service, capital improvements, unexpected expenses, and short-term cash flow needs. The District has maintained a positive fund balance over the past five years.

Key Findings & Determinations

Key findings include:

1. Rural North Vacaville Water District is a small rural community public water agency currently serving an estimated population of 1,118 residents. The District is expected to have minimal population growth over the next five years with a projected population of 1,498 at build-out of its current design capacity.

2. RNVWD's water system is adequate to meet the needs of its current customers (398 connections) and the remaining 135 undeveloped service connections to meet its initial design capacity of 533 service connections with both wells operational.

3. The potential for expansion of the district exists due to future splits and annexations. Expansion of the district's water system beyond its current capacity of 533 service connections would require a new engineer's report and county approval.

4. Future lot splits consistent with the County General Plan and existing zoning have the potential to add 298 additional lots inside the district's boundary. Lot splits resulting in parcels 2.5 acres to 5 acres are required by the County's General Plan to be on a public water system. Parcels larger than 5 acres with private wells are allowed by the existing zoning.

5. Future development in the English Hills area may require access to a public water system given the limitations of private shallow wells in the area.

6. Located at the northwestern edge of the Solano Groundwater Sub-basin, the District's water supply comes from two wells that draw water from the basal zone of the Tehama formation aquifer. Groundwater levels fluctuate between wet and dry years and should be monitored on a regular basis.

7. Well #2 is permitted for emergency use only due to elevated levels of arsenic. The District is currently in the process of addressing the problem by installing an arsenic removal treatment plant.

8. District and Solano County Planning staffs should consider developing a long-range infrastructure plan to meet the water supply needs for the English Hills area. The infrastructure plan should include a water demand analysis and a financial analysis.

9. The most recent Sanitary Survey Report (2017) found that RNVWD meets all Federal and State drinking water health standards and that "*RNVWD continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions.*

10 RNVWD operates on an annual budget of approximately $1,000,000 per year and has maintained a positive fund balance for the past five years. The District is currently debt free having paid off the two loans used to finance the initial construction of its two groundwater wells and water distribution system. A new loan for $1.2 million has been approved for installation of an arsenic removal facility for Well #2.

11. The District complies with state laws governing special districts and has received an award from the Special Districts Association for accountability and transparency.

Recommendations for Improved Governance and Service Delivery

The following suggested recommendations are made to promote efficiencies in service delivery and governance. Potential actions that should be considered include:

1. Adoption of an updated District boundary map and SOI. Recommend that the District reconcile the updated boundary map with Register of Voters list of the District's eligible voters.
2. Work with the District to identify appropriate boundaries for SOI based on the District's ability to serve over the next five years.
3. Recommend that the District develop a 5-10-year strategic/infrastructure plan that addresses the need for water service to parcels within the District without water rights/service connections prior to annexation of new territory or expansion of SOI. The infrastructure plan should include a water demand analysis and a financial analysis.
4. Require a new engineering report and aquifer monitoring program before expansion of the District's water system beyond its current design capacity of 533 service connections.
5. Recommend the District conduct regular monitoring of groundwater levels and work with neighboring water provider agencies to implement a plan for maintaining a safe, sustainable yield of groundwater from the Tehama Formation basal aquifer.

6. Encourage the District to work with the Solano Resource Management Agency to address long-term water planning needs in the English Hills area. The infrastructure plan should include a water demand analysis and a financial analysis.

7. Adopt policy requiring "will serve" letters that demonstrate the District intends to provide service, has the ability to serve the parcel(s) requesting annexation, confirm property is located within the SOI, addition of new service connections will meet District Standards and Specifications, new service connections are in compliance with all requirements of appropriate regulatory agencies, and that the District has the capacity that meets State Water Works Standards including MDD requirements per CCR §64544.

8. Condition approval of District expansion with a requirement for RNVWD to return to LAFCO in four months to update the Commission on the progress of the arsenic removal facility installation. Well #2 should be brought online prior to approving future annexations.

9. Recommend that the District review and address its "First Come, First Serve" Water Rights Policy and its impact on parcels within the district without water rights and/or service connections.

10. Recommend that RNVWD review and adopt "Best Practices" promulgated by the California Special Districts Association to improve communication, governance, and understanding of LAFCO processes.

District Profile

General Information	
Agency Names:	Rural North Vacaville Water District
Address:	P.O. Box 5097 Vacaville, CA 95696
Phone:	(707) 447-8420
Website:	https://www.rnvwd.com/
District Type & Purpose	
Type of District:	Independent Special District (Community Services District)
Principal Act:	CGC §61000-61250
Date Formed:	June 25, 1996
Primary Purpose:	Construction and operation of a potable water system for domestic use and fire protection.
Latent Powers:	Multiple services as authorized by principal act
District Status:	Active
Governance & Operations	
Governing Body:	5-Member Elected Independent Board of Directors
Board of Directors:	President, Chris Calvert (2017-2022) Vice-President, Robert Whitehouse (2020-2024) Director, Patrick Sweeney (2020-2024) Director, Elizabeth Miles (2017-2022) Director, Steven Strickland (2021-2022)
Management & Staffing:	Gordon Stankowski, General Manager Brenda Kane, Billing Manager Rick Trites, Meter Reading/Backflow Nancy Veerkamp, Board Clerk/Administration Solano Irrigation District, Operations & Maintenance
Service Area	
District Size:	5,162.7 acres in the English Hills area north of Vacaville in unincorporated Solano County
Sphere of Influence:	SOI larger than the District's current boundaries
Primary Land Use:	Rural Residential, Agricultural and Range Land
Population Served:	Current Population: 1,118 residents; Projected: 1,492
Growth Potential:	Minimal expectation for growth
Infrastructure/Capacity	
Water Source:	Groundwater; basal zone of Tehama Formation aquifer
Storage Capacity:	Two 300,000 gallon water storage tanks
Distribution Facilities:	2-groundwater wells, water pumps, two booster stations, 43-miles of water distribution pipe
Service Connections	Active Developed Connections: 398 Undeveloped: 135 Max. Capacity: 533
Shared Facilities:	None
Fiscal Health:	
Operating Budget:	$1,078,435 in Fiscal Year 2019-2020
Primary Revenue Source:	User charges
Fund Balance:	Audited financial statements show positive fund balance for each of the past five years. The District experienced a minimal operating shortfall in FY 2019-20 due to increased maintenance and utility costs. The Board recently approved a rate increase. FY 2019-20 Fund Balance $6,343,400

Information Sources: District documents and financial statements; meetings with District representatives; Solano County Assessors Office; U.S. Census Bureau; Solano LAFCO; Solano County Planning; and other sources.

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SECTION 1: INTRODUCTION

1.1 ROLE AND RESPONSIBILITY OF LAFCO

Local Agency Formation Commissions (LAFCOs) are independent agencies established by state legislation to oversee changes in local government boundaries and organizational structures, including the formation, annexation, detachment, and dissolution of special districts, and the establishment of service boundaries and spheres of influence. LAFCOs have the responsibility under the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH Act) to:

- oversee the logical, efficient, and most appropriate formation of local cities and special districts;
- provide for the logical progression of agency boundaries and efficient expansion of municipal services;
- assure the efficient provision of municipal services, and
- discourage the premature conversion of agricultural and open space lands.

Under the CKH Act, LAFCOs must conduct a municipal service review (MSR) of all local agencies every five years (GC §56076). A MSR is defined as *"a means of identifying and evaluating public services."* An MSR serves to inform the governmental entity, local LAFCO, general public, district property owners, and other interested parties about actions that could be taken to improve the efficient delivery of services.

The CKH Act requires that LAFCOs adopt and periodically update the Sphere of Influence (SOI) for each city and special district within their jurisdiction. A SOI is defined as *"a plan for the probable physical boundary and service area of a local agency or municipality"* (GC §56076). In order to take any action regarding a change in a local agency's boundaries or organizational structure LAFCO must first conduct a Municipal Service Review and make determinations prescribed by the CKH Act to support any LAFCO actions including a SOI update, and any subsequent boundary and/or governance changes.

The MSR process does not require a LAFCO to initiate changes of organization based on service review conclusions; it only requires that LAFCOs make determinations regarding the provision of public services per GC §56430. However, LAFCOs, local government agencies, and the public may subsequently use the determinations and related analysis to consider whether to pursue changes to service delivery and/or government organization. No SOI can be updated unless the LAFCO first conducts a MSR.

1.2 MUNICIPAL SERVICE REVIEW REQUIREMENTS

LAFCOs shall conduct a Municipal Service Review (MSR) in accordance with GC §56430 and shall prepare a written statement of its determinations with respect to each of the following **seven** factors as defined by GC §56430[6]:

(1) Growth and population projections for the affected area;

(2) The location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence;

(3) Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies including needs or deficiencies related to sewers,

[6] Guide to the Cortese–Knox–Hertzberg Local Government Reorganization Act of 2000, December 2017

municipal and industrial water, and structural fire protection in any disadvantaged, unincorporated communities within or contiguous to the sphere of influence;

(4) The financial ability of agencies to provide services;

(5) Status of, and opportunities for, shared facilities;

(6) Accountability for community service needs, including governmental structure and operational efficiencies; and

(7) Any other matter related to effective or efficient service delivery, as required by commission policy.

1.3 SPHERE OF INFLUENCE CONSIDERATIONS

In accordance with GC §56425, when adopting, amending or updating a SOI, LAFCOs *"shall consider and prepare a written statement of its determinations with respect to each of the following **five** factors:"*

(1) The present and planned land uses in the area, including agricultural and open space lands;

(2) The present and probable need for public facilities and services in the area;

(3) The present capacity of public facilities and adequacy of public services that the agency provides, or is authorized to provide;

(4) The existence of any social or economic communities of interest in the area if the Commission determines that they are relevant to the agency; and

(5) The present and probable need for public facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence.

In determining or updating a SOI, the commission may assess the feasibility of governmental reorganization and recommend reorganization if it will further the goals of orderly development and the efficient and affordable delivery of service. When adopting, amending, or updating a SOI for a special district, the commission shall establish the nature, location, and extent of any functions or classes of services provided by existing districts and may require existing districts to file written statements with the commission specifying the functions or classes of services provided by those districts. Possible approaches to establishing a Sphere of Influence that LAFCo may consider include: 1) a Coterminous Sphere where the SOI is the same as the District's boundaries, 2) an Annexable Sphere that includes territory larger than the agency's boundaries and identifies areas the agency reasonably expects to annex sometime in the future, or 3) a Limited Service Sphere that includes territory of a multi-service agency, but does not provide all needed services.

1.4 PURPOSE & USE OF THIS MSR/SOI REVIEW

The purpose of this MSR/SOI Review is to provide Solano LAFCO with a comprehensive update of the service needs, operational efficiency, financial viability, governance, and service delivery capacity of the Rural North Vacaville Water District since it was last evaluated in 2015. The review process does not require LAFCO to initiate changes of organization. However, LAFCO may subsequently use the determinations and related analysis to support future LAFCO actions, including a SOI update and any potential boundary and/or governance changes. This MSR/SOI study includes:

1. Determinations on each of the **seven** MSR and **five** SOI factors as provided in and required by the CKH Act;
2. An identification of required governance and operational functions of the District in accordance with the District's Principal Act or Enabling Legislation;
3. Identification of opportunities for collaboration with alternative service providers;
4. Implications of possible boundary changes; and
5. Analysis and recommendations for governance structure, enhancing services, efficiencies, and affordability.

In fulfilling its legislative mandates, Solano LAFCO policy is to consider an application for boundary changes or reorganization based on consideration of various factors, including: "t*he Legislature's policies and priorities for LAFCO; the proposal's relationship to the affected agency's Sphere of Influence; the application's compliance with the California Environmental Quality Act (CEQA); and submitted responses to Solano LAFCO's Standards."*[7]

1.5: CEQA EXEMPTION

Solano LAFCO has determined that this MSR update will have no significant effect on the environment. Public Resources Code §21000 states that *"where there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA."* According to CEQA Guidelines, an MSR update qualifies for a Class 6 categorical exemption since it involves "basic data collection, research, experimental management, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource" (California Code of Regulations §15306). As the lead agency, pursuant to CCR§15061(b) (3), **Solano LAFCO finds that this MSR/SOI update does not have the potential for causing a significant effect on the environment and is exempt from CEQA.**

[7] Solano LAFCO Standards and Procedures guidelines, adopted March 1, 1999 as amended

SECTION 2: REGIONAL SETTING

2.1: LOCAL AND REGIONAL PLANNING CONTEXT

The Rural North Vacaville Water District (RNVWD) is located in rural, unincorporated Solano County north of the City of Vacaville in the English Hills, Cantelow Road, Gibson Canyon, and Steiger Hills area ("English Hills"). The Solano County General Plan shows the land use designation for property located within the District as mostly rural residential (RR) or Exclusive Agriculture (A). Rural Residential zoning is applied to areas of low density, single-family homes, where agriculture is not the sole land use and commercial agricultural production capability is low, and only minimal essential public services and facilities are available. Home sites are to be self-sufficient, with individual wells and individual septic systems. Water may be supplied by a public water system, operated by a public agency, in areas where water from individual wells may be of marginal quantity or quality. Rural residential zoning districts allow single family residences on parcels with minimum lot sizes of 2.5, 5, and 10 acres. County land use policies require development on parcels of less than 5-acres to be connected to a public water system rather than individual private wells.

2.2: SOLANO GROUNDWATER SUB-BASIN

RNVWD is located on the northwest edge of the Solano Groundwater Sub-basin (DWR Basin Number 5-21.66). The Solano Sub-basin serves as a principal source of water in northern and eastern Solano County and is considered to be of generally good quality, and useable for both domestic and agricultural purposes. Entities that rely on groundwater for all or a portion of their water supply include the Cities of Vacaville, Dixon, and Rio Vista and water districts such as Rural North Vacaville Water District, Solano Irrigation District, Maine Prairie Water District, and Reclamation District 2068. Local landowners, ranchers, farmers, and corporate growers also utilize groundwater for all or a part of their water needs.

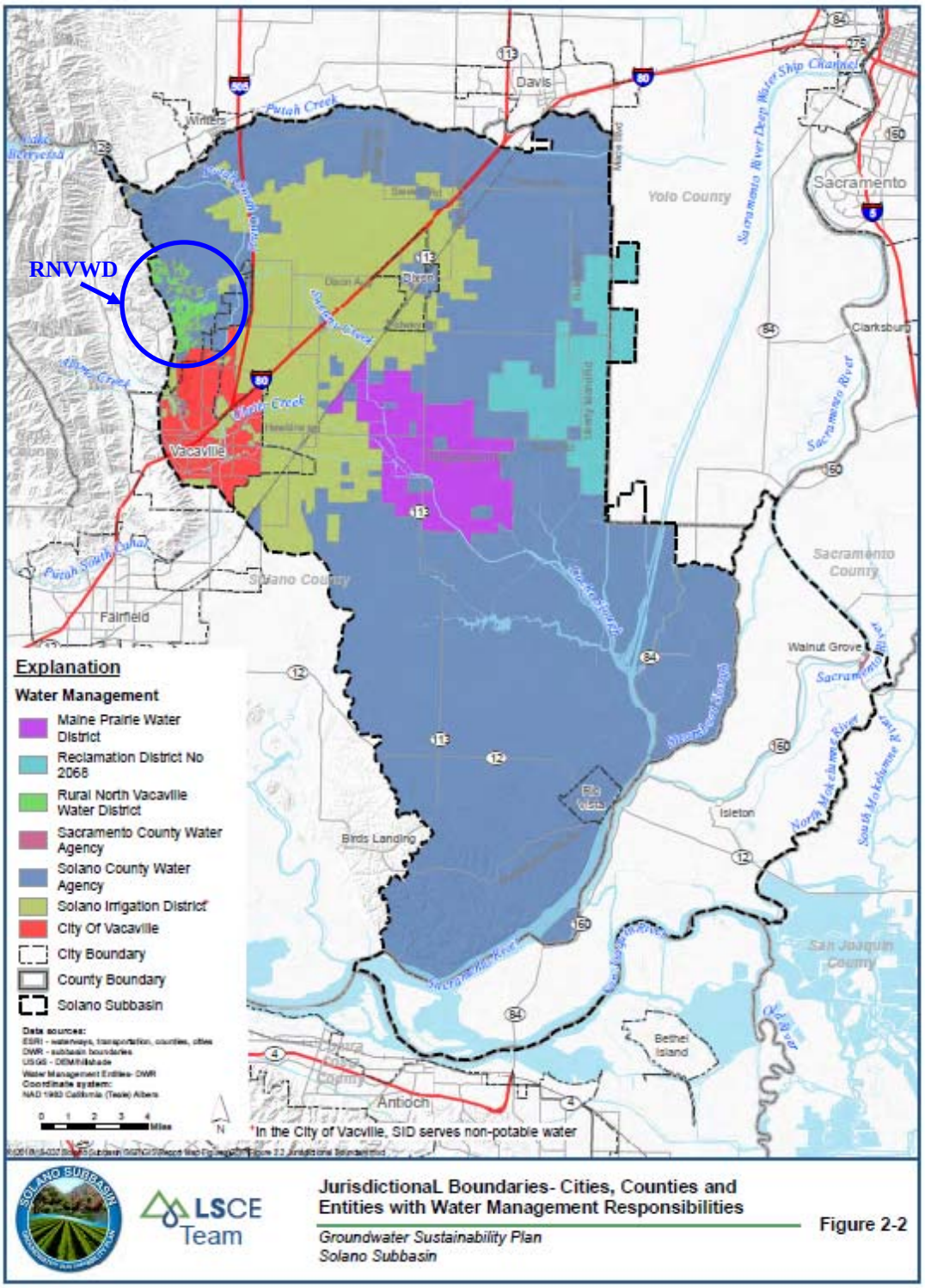
The Solano Sub-basin extends from the English Hills area in the northwest into Yolo and Sacramento counties on the southeast (see Figure 2-1). According to the California Department of Water Resources (DWR)[8] the sub-basin's western border is defined by the hydrologic divide that separates lands draining to the San Francisco Bay from those draining to the Sacramento-San Joaquin River Delta. That divide is roughly delineated by the English Hills and the Montezuma Hills.[9]

The primary fresh water-bearing units in the Solano sub-basin are sedimentary continental deposits that include the Tehama Formation, which is primarily located in the English Hills area along the western margin of the sub-basin (see Surficial Geologic Map of Solano County in Appendix). The Tehama Formation consists mostly of moderately compacted silt, clay, and silty fine sand enclosing lenses of sand and gravel, silt and gravel, and cemented conglomerate. Permeability of the Tehama Formation is variable, but generally less than the overlying younger units. The Tehama Formation is the thickest water-bearing unit underlying the Solano sub-basin, ranging in thickness from 500 to 2500 feet. Wells in the Tehama Formation can yield up to several thousand gallons of water per minute (gpm).

[8] California Department of Water Resources, *"Groundwater Bulletin 118 "*, https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118

[9] https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/Statewide-Reports/Bulletin_118_Update_2003.pdf

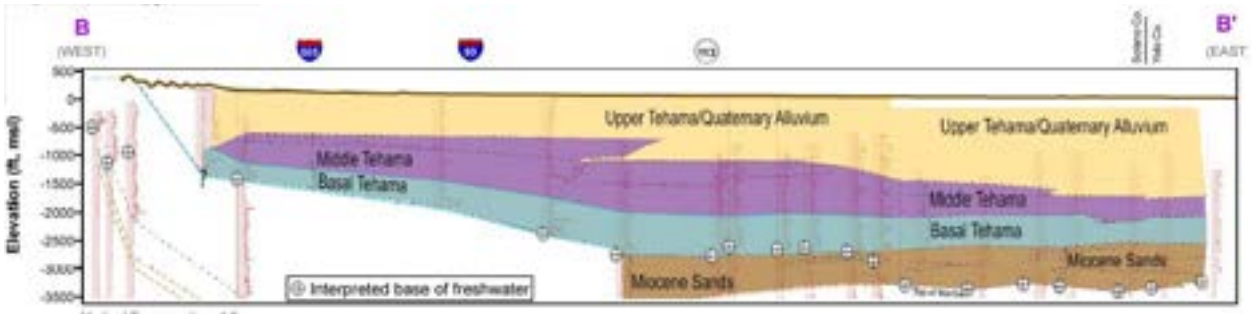
Figure 2-1: Solano Groundwater Sub-basin



Groundwater can be found relatively close to the land surface in shallow aquifer zones (including the Putah Fan and upper zone of the Tehama Formation. Average depths to groundwater in shallow aquifer zones vary between 15 feet and 35 feet below the surface. Underlying the Putah Fan is the Tehama Formation, which is divided into upper, middle, and basal zones (see Figure 2-2). The upper zone supplies many shallow wells relied on by private residences in the English Hills area. The middle zone does not serve as a major water yielding unit. The basal zone, found around 1,000-1,500 feet below the surface, is utilized mainly for public water supply wells, including the City of Vacaville and the Rural North Vacaville Water District.[10]

Figure 2-2: Tehama Formation Cross Section B-B

(Looking North with the English Hills area on the left)



Source: Luhdorff & Scalmanini, Solano Sub-basin Groundwater Sustainability Plan

2.3: AQUIFER CAPACITY AND RECHARGE

Aquifer Capacity: The capacity and recharge rate of the basal zone of the Tehama Formation is uncertain. Several studies have attempted to provide preliminary estimates, but nothing definitive. To date, there has been no conclusive calculation quantifying the groundwater storage capacity and recharge rate for the basal zone of the Tehama Formation aquifer in the English Hills area. The USGS has determined yield averages and groundwater storage calculations for some areas within and around the Solano Sub-basin.[11] Several recent studies have estimated safe yields for groundwater extraction in the English Hills/Vacaville area.[12]

Recharge Rate: Sustainable groundwater yields are determined by the recharge rate of the aquifer. If water is pumped at a faster rate than an aquifer is recharged by precipitation or other sources, water levels can drop, resulting in decreased water availability and deterioration of groundwater quality. Reliance upon groundwater often increases during drought periods leading to increased groundwater pumping to meet water demands. Excessive groundwater pumping and aquifer depletion can cause the aquifer system to compact, which can cause land to sink, permanent loss of groundwater storage in the aquifer system, and infrastructure damage.

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[10] https://www.solanogsp.com/solano-subbasin/

[11] "*Geology, water resources and usable ground-water storage capacity of part of Solano County, California,*" Water Supply Paper 1464, By H.G. Thomasson, F.H. Olmsted, and E.F. LeRoux, 1960

[12] Borcalli & Associates, Groundwater Investigation for the English Hills Specific Plan EIR, 1991
Solano County Water Authority, *"Ground Water Conditions in Solano County 1999-2002"*
Luhdorff & Scalmanini Consulting Engineers, *"Vacaville Groundwater Source Sufficiency Technical Memorandum,"* May 2016

Groundwater Level Trends: Groundwater levels vary both seasonally and by location in the Solano Sub basin. **N**atural, predevelopment groundwater levels were measured by the USGS in 1912. At that time the general direction of groundwater flow in the Solano Sub-basin was from northwest to southeast. From 1912 to 1932, below-average precipitation resulted in lower groundwater levels throughout the basin. Due to above-average precipitation from 1932 and 1941 groundwater levels recovered slightly in spite of an increase in the number of wells utilizing this groundwater source. After 1941, groundwater levels continued to decline due to increasing agricultural and urban development, reaching their lowest historical levels in the late 1950s. Since then, groundwater level trends within the Solano Sub-basin have been impacted by drought periods in the mid-1970s and late-1980s, but have recovered quickly in the following wet years. In recent years, groundwater elevation trends have coincided with the drought conditions of 2012 to 2015. The English Hills/Vaca Valley subarea had an overall reduction in groundwater levels from 2012-2014 (a dry period[13]), but a slight increase from 2014-2015. The northern portion of the county continued to show a decrease in groundwater levels.[14] The Solano Sub-basin Groundwater Sustainability Plan found that groundwater levels in the basal zone of the Tehama Formation have remained fairly stable since 2008.

2.4: IMPACT OF DROUGHTS & CLIMATE CHANGE ON GROUNDWATER LEVELS

Recurring Drought Periods: Droughts are a recurring feature of California's weather and climate. Throughout its history California has experienced many droughts and can expect drought conditions on a regular basis at least every 5 to 10 years. Most recently, the State experienced a major 5-year drought during the 2012-2016 timeframe. Other notable historic drought periods include the years 2007-09; 1987-92; and 1976-77. The first six months of 2021 rank as the fourth driest on record. In June 2021, the State Water Resources Control Board issued a Notice to Public Drinking Water Systems about Ongoing Dry Conditions in California and to prepare for drought impacts statewide. With regular recurring periods of drought, conservation and drought planning is a fact of life that water agencies must deal with. The State Water Resources Control Board urges water agencies to prioritize three actions: 1) closely evaluate your water supply; 2) develop a contingency plan to mitigate any water supply problems that might result from current and future conditions, and 3) encourage your customers to conserve water voluntarily. With climate change drought periods are expected to occur more frequently and be more severe.

Influence of Climate Change: Climate change influences groundwater systems in several ways. In terms of the hydrological cycle, climate change can affect the amount of soil infiltration, deeper percolation, and hence groundwater recharge.[15] Also, rising temperatures increase evaporative demand over the land, which limits the amount of water available to replenish groundwater supplies. Less surface water leads to increased groundwater pumping placing more demand on an aquifer with less water available for recharge, leading to the potential for overdraft conditions and wells going dry.

[13] See NOAA National Integrated Drought Information System for wet and dry periods https://www.drought.gov/states/california/county/solano
[14] Solano County Water Agency, "*Groundwater Conditions Report 2013-2015*," August 2015
[15] Nature Communications, Divergent effects of climate change on future groundwater availability in key mid-latitude aquifers, July 2020, found at: https://www.nature.com/articles/s41467-020-17581-y

SECTION 3: GROUNDWATER REGULATION

California law distinguishes between 1) surface water, and 2) groundwater. The State Water Code defines groundwater as *"all water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels"* (CWC §10752). All groundwater not defined as a subterranean stream is referred to as percolating groundwater, which is unregulated.

3.1: REGULATION OF GROUNDWATER EXTRACTION[16]

A statewide system to regulate groundwater use in California does not exist. Instead, groundwater is considered a local resource to be used on a local basis. Landowners are entitled to pump a reasonable amount of groundwater from the aquifer underlying their land and put it to a beneficial use. When there is insufficient water to meet the demands of landowners, they are expected to reduce their use to bring extractions into the "safe yield" of the basin to prevent overdraft.

3.2: GROUNDWATER RIGHTS

A right to groundwater is obtained by simply extracting the water and using it for a beneficial purpose. Landowners with real property overlying a groundwater basin have the right to the reasonable and beneficial use of groundwater underlying their property for use on their overlying lands. Rights to groundwater supplies are shared by all overlying landowners within the groundwater basin. Whenever the supply of groundwater is insufficient for all overlying uses, each overlying user is entitled to a fair and just proportion of the water, and reductions in pumping are shared between the overlying users regardless of their specific location on the water course or in the basin. *"Surplus water not presently required for beneficial use on overlying lands and which may be withdrawn without creating an overdraft on the groundwater supply may be appropriated for use on non-overlying lands subject however to future requirements on overlying lands. Such appropriation is accomplished simply by use --no permit is required."*[17] Public use of underground percolating water is considered a non-overlying use and is therefore an appropriative use.

3.3: SUSTAINABLE GROUNDWATER MANAGEMENT ACT

In 2014, California took its first step to regulate how the state manages the use of groundwater. Legislation was adopted that established the Sustainable Groundwater Management Act (SGMA) requiring the creation of local Groundwater Sustainability Agencies (GSA) and charged them with developing and implementing Groundwater Sustainability Plans (GSP) to manage regionally defined groundwater basins in a sustainable manner to avoid over drafting groundwater resources. The SGMA established a framework for the sustainable management of groundwater resources for the first time in the State's history. If effectively managed, groundwater resources will provide a reliable source of

[16] https://www.watereducation.org/aquapedia-background/groundwater-law

[17] California Water Resources Control Board Bulletin, *"Regulations and Information Pertaining to Appropriation of Water in California"*,

potable water for communities, farms, and private residences even during prolonged periods of drought and climate change.

Solano GSA Collaborative: Multiple GSA's in the Solano Sub-basin (collectively referred to as the Solano GSA Collaborative) are working together towards development and implementation of a single Groundwater Sustainability Plan that brings the Solano Sub-basin into balance by 2040. [18] RNVWD is not an active participant in the Solano GSA.

Compliance with SGMA Local Plan: The State has designated the Solano Sub-basin as medium-priority, and thus subject to compliance with the SGMA. Water agencies with wells located within the Solano Sub-basin must comply with the local Plan's policies. The Solano Sub-basin is not considered in critical condition of being over drafted. In Bulletin 118-80, the Department of Water Resources found that *"no sub-basins in the Sacramento Basin Hydrologic Study Area are identified as subject to critical conditions of overdraft."* According to Table 5 of Bulletin 118-80 the Solano Sub-basin shows no evidence of overdraft.

3.4: PUBLIC DRINKING WATER REGULATORY FRAMEWORK

Public drinking water systems using groundwater supply sources must comply with local, state, and federal standards related to water quality and well construction including:

Safe Drinking Water Act: The U.S. Environmental Protection Agency (US EPA) is the primary entity with responsibility for setting national drinking-water standards for public water systems. The National Primary Drinking Water Standards establish the maximum contaminant levels allowed in public distribution systems. The Secondary Standards establish the maximum levels that apply to potable water supplies at the point of delivery to the customer. Although the US EPA and state governments enforce water quality standards, local governments and private water suppliers are ultimately responsible for the quality of water supplies. Community water systems must conduct a sanitary survey covering eight areas every three years to assess their capability to supply safe drinking water. Responsibility for conducting the surveys has been delegated to the states. Public agencies with groundwater systems must submit information that will enable the state to conduct the survey.

State Waterworks Standards: Drinking water in California is governed by the provisions of Title 22, Waterworks Standards (Sections 64417-64710) of the California Code of Regulations, which specify the allowable maximum contaminant levels (MCL) for a wide range of primary and secondary water quality constituents. Public water systems with over 200 connections are directly regulated by the California Department of Public Health.

California Water Control Board - Division of Drinking Water: The California Drinking Water Program (DWP) under Title 22 is administered by the Division of Drinking Water (DDW) which regulates public water systems; certifies drinking water treatment and distribution operators; supports and promotes water system security; provides support for small water systems and for improving technical, managerial, and financial capacity; and provides funding opportunities to water system improvements. The Field Operations Branches are responsible for the enforcement of federal and state standards and the associated regulatory oversight of public water systems to assure the delivery of safe

[18] Public Policy Institute of California, *"Groundwater in California"*, https://www.ppic.org/publication/groundwater-in-california/

drinking water. FOB staff performs field inspections, issue operating permits, review plans and specifications for new facilities, take enforcement actions for non-compliance with laws and regulations, review water quality monitoring results, and support and promote water system security.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the Division of Drinking Water (DDW) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. All source waters used for drinking water, including groundwater, are required to be assessed for possible contaminants. In order to ensure that tap water is safe to drink, the California Health and Safety Code (§116530) specifies that a public water system shall submit a technical report to DDW annually specifying contact and operational information for the prior calendar year. The most recent Sanitary Survey Report for RNVWD was issued in 2017.

An annual survey of public water systems collects critical water system information intended to assess the status of compliance with specific regulatory requirements such as source water capacity, provide updated contact and inventory information (such as population and number of service connections), and provides information that is used to assess the financial capacity of water systems, among other information.

Solano County Department of Resource Management, Environmental Health Division: Extraction of groundwater in California requires a permit for the construction of a well from the local jurisdiction. In Solano County a permit is required from the Department of Resource Management, Environmental Health Division to construct a well in compliance with California Well Standards and Chapter 13.10 of the Solano County Code. According to the County Code wells shall be constructed "in such a manner that the ground water of the county will not be contaminated or polluted and that water obtained from wells will be suitable for beneficial use and will not jeopardize the health, safety or welfare of the people of this county" (Solano County Ord. No. 1348, §1).

SECTION 4: COMMUNITY SERVICE DISTRICTS

4.1: PRINCIPAL ACT GOVERNING COMMUNITY SERVICE DISTRICTS

Community Service Districts (CSDs) are authorized under California Government Code §61000. They function much like a city government for unincorporated areas, providing a wide range of what are traditionally considered municipal services.[19] CSDs have the authority to supply water for beneficial uses, in the same manner as a municipal water district, formed pursuant to the Municipal Water District Law of 1911 (CWC §71000). In addition, CSDs have the power to collect, treat, or dispose of sewage, wastewater, storm water, and solid waste; maintain roads, parks, libraries, cemeteries, and community centers; and to provide fire and police protection, flood protection, transportation, hydroelectric power, snow removal, animal and pest control, mail delivery, environmental protection, ambulance service, and even supply electricity in some circumstances.

A community services district is considered an independent special district, as defined by Government Code Section 56044, except when a county board of supervisors or a city council is the board of directors. CSD's are a form of local government created to meet the specific needs of the local community. Unlike most special districts that provide a single service, community services districts are authorized to provide multiple services. In fact, community services districts can provide up to 32 different services. Most CSDs, however, provide just one or two public services, such as water and sewer.

4.2: PRIMARY PURPOSE

Community Service Districts enable residents living in unincorporated areas to form local agencies to provide needed government services. Inadequate tax bases and competing demands for existing taxes make it hard for cities and counties to provide all the services or the quality of services their citizens desire. When residents want new services or higher level of services, they can form a special district to pay for and administer them. If a board of directors desires to exercise a "latent power" (defined as those services and facilities authorized under Part 3 of the CSD law), the district shall first receive the approval of the local agency formation commission.

4.3: GOVERNANCE

Community Service Districts are independent special districts governed by a Board of Directors who are elected, either at-large or from divisions, by resident voters to four year terms. A CSD can consist of unincorporated or incorporated territory with contiguous or noncontiguous area. The board of directors shall consist of five members and establish policies for the operation of the district (GC §61040). The board of directors shall appoint a general manager who will be responsible for the implementation of district policies and management of district affairs. The county treasurer of the principal county shall serve as the treasurer of the district unless the District board of directors appoints a district treasurer who shall serve in place of the county treasurer (GC §61050). The CKH Act authorizes LAFCOs to oversee any change of organization or reorganization of a community services district.

[19] https://lao.ca.gov/2002/water_districts/special_water_districts.html

4.4: COMPLIANCE WITH STATE LAWS[20]

In addition to operating according to the Principal Act under which they are established, CSDs must also comply with applicable state laws affecting the governance of special districts in general. Relevant acts pertinent to special districts and CSD's include:

1. **Ralph M. Brown Act** – As public agencies, special districts must comply with the Brown Act, which requires meetings of governing boards to be publicly announced and open to the public. Agencies must post agendas containing a brief general description of each item to be discussed at the meeting in a location that is accessible to members of the public at least 72 hours before a regular meeting.
2. **Public Records Act** – GC §6250 through §6270.5 requires inspection or disclosure of governmental records to the public upon request, unless exempted by law. To implement the Public Records Act, Senate Bill 272 (2015) requires public agencies to create a catalog of "enterprise systems" utilized by the agency and post the list on their website or make it publicly available upon request.
3. **Financial Transaction Reports** - Local agencies must submit an annual financial transaction report within seven months after the close of each fiscal year to the State Controller's Office (SCO). Special districts are also required to either post the financial report on its website or provide copies of the report upon request. Agencies who do not submit financial transaction reports are subject to financial and legal penalties pursuant to GC §53895.
4. **Independent Financial Audit** – All special districts must conduct an annual independent financial audit or request permission from the County Auditor-Controller and be approved by the Board of Supervisors for a biennial audit or a five-year audit period if the district's annual revenues do not exceed $60,000 in each year being reported.
5. **District Website** – Special districts must establish and maintain an Internet based website in accordance with SB 929, unless the district's governing board has adopted a resolution declaring that to do so would constitute a hardship due to inadequate broadband access, significantly limited financial resources, and/or insufficient staff resources. The website must contain information on annual compensation of officers and employees and the posting of meeting agendas as required by the Brown Act.
6. **Compensation Report Filing** – Special districts are required to submit the annual compensation of its elected officials, officers, and employees to the State Controller's Office by April 30 of each year.
7. **Annual Disclosure –**Special districts are required to annually disclose payments made to its employees or board members for reimbursement of individual charges in excess of $100 made in the immediately preceding fiscal year and to publish or print reimbursement information in a document which is made available for public inspection. Reports must be posted annually by the district for the previous fiscal year no later than December 31st (GC §53065.5).
8. **Ethics Policy -** Local elected officials and other key officials designated by the local board (typically management) are required to take an ethics training course if the official receives compensation or reimbursement in their position with a local

[20] State Controller's Office, "*Special District Uniform Accounting and Reporting Procedures*", December 2018, https://www.sco.ca.gov/pubs_guides.html

government agency. This applies even if the official does not actually receive compensation or reimbursement, but the district's enabling act simply allows for such compensation or reimbursement. Affected officials must take the course once every two years and the district must establish a written policy on reimbursements (GC §53234, et seq. GC §53232.1-5323.2).

Penalties for non-compliance with applicable state laws can lead to invalidation of a special district's actions, financial penalties, and in some cases criminal prosecution.

4.5: BEST PRACTICES

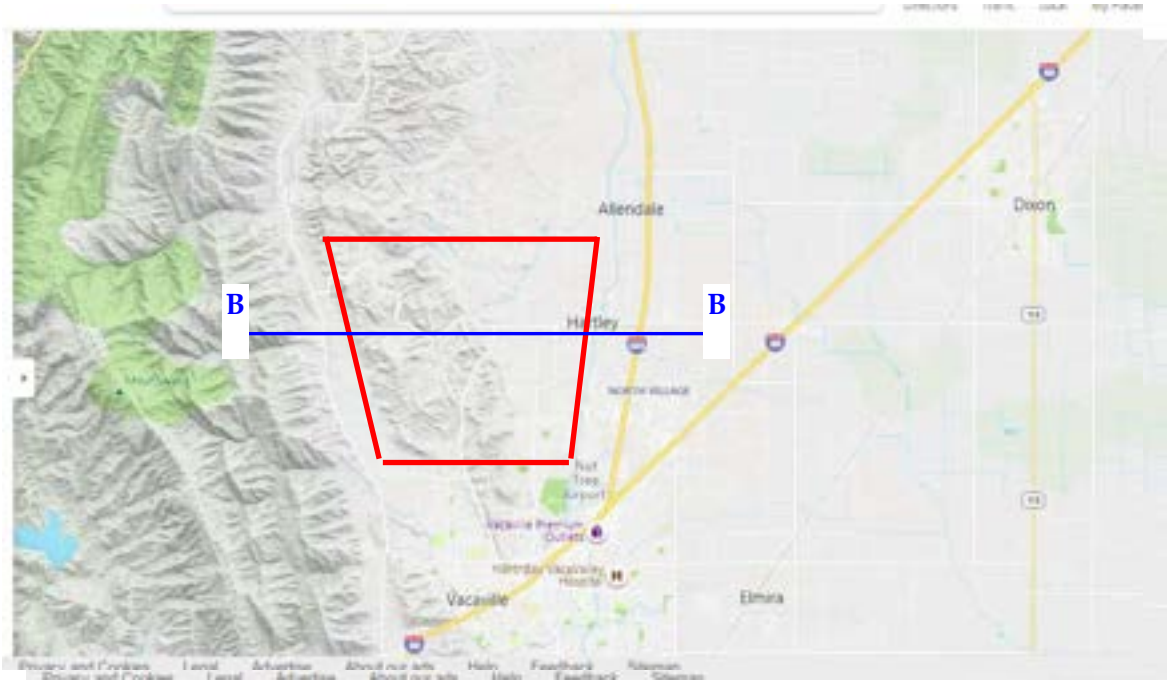
Several organizations have identified best practices for the governance and management of special districts including the 1) Government Finance Officers Association (GFOA) which publishes a list of best practices and lists key documents that public agencies should be publishing regularly (see https://www.gfoa.org/best-practices), and 2) Special District Leadership Foundation (SDLF) which promotes good governance among California's special districts and provides special districts with a checklist of best practices in the areas of Finance and Human Resources (see https://www.sdlf.org/viewdocument/high-performing-district-checklist).

SECTION 5: DISTRICT PROFILE & OVERVIEW

5.1: LOCATION & HISTORY

Rural North Vacaville Water District is situated north of Vacaville in an unincorporated area of Solano County which includes the English Hills, Cantelow Road, Gibson Canyon, and Steiger Hill neighborhoods, collectively "English Hills" area (see Figure 1). The District was formed in 1996 as a Community Services District pursuant to California Government Code §61000 to address the lack of an adequate water supply from private wells within the rural North Vacaville area. Solano LAFCO approved the District's formation (Resolution 96-2) on January 8, 1996. A majority of the qualified voters within the proposed boundaries of the District approved its formation on June 25, 1996. The Solano County Board of Supervisors was designated as the District's initial Board of Directors, with the County's Environmental Management Department responsible for construction of the potable water system, which was financed through two 20-year, low-interest loans. A benefit assessment district was approved by property owners for repayment of the loans and operation of the water system, which began on January 31, 2003. The District became an independent district in November 2007 when property owners voted to elect an independent board of directors to take over management of the District with day-to-day management being the responsibility of a General Manager that reported directly to the Board of Directors. Operation and maintenance of the water system is currently performed by the Solano Irrigation District under contract to RNVWD.

Figure 5-1: General Location of Rural North Vacaville Water District
(Cross Section B-B shown on Figure 2.2)



5.2 PRIMARY PURPOSE, POWERS, & RESPONSIBILITIES

RNVWD is an Independent Special District as defined by Government Code §56044, as *"having a legislative body all of whose members are elected by registered voters or landowners within the district, or whose members are appointed to fixed terms."* RNVWD was formed as a Community Services District for the purpose of constructing and operating a community water system serving the English Hills, Cantelow Road, Gibson Canyon, and Steiger Hills area north of Vacaville in unincorporated Solano County. The principal act governing CSDs allows them to provide a wide array of services, including, but not limited to water supply and fire protection. Consequently, CSDs have latent powers to provide any of the services permitted by their principal act after first obtaining approval from LAFCO. RNVWD's primary purpose is to supply potable water for domestic use and fire suppression purposes to properties located within the district in an efficient, cost effective manner.

5.3 DISTRICT BOUNDARIES AND SPHERE OF INFLUENCE

The District boundary (see Figure 5-2) encompasses approximately 5,162.7 acres and includes 480 Assessor's Parcels (see Table 5-1). There are non-contiguous parcels that are part of the District. Unlike most special districts, community services districts can include non-contiguous parcels.

A number of parcels lying outside, but surrounded by the District boundaries, are considered islands that are not part of the District. The District's Sphere of Influence (SOI) encompasses a broader territory and includes parcels outside of the District's boundaries.

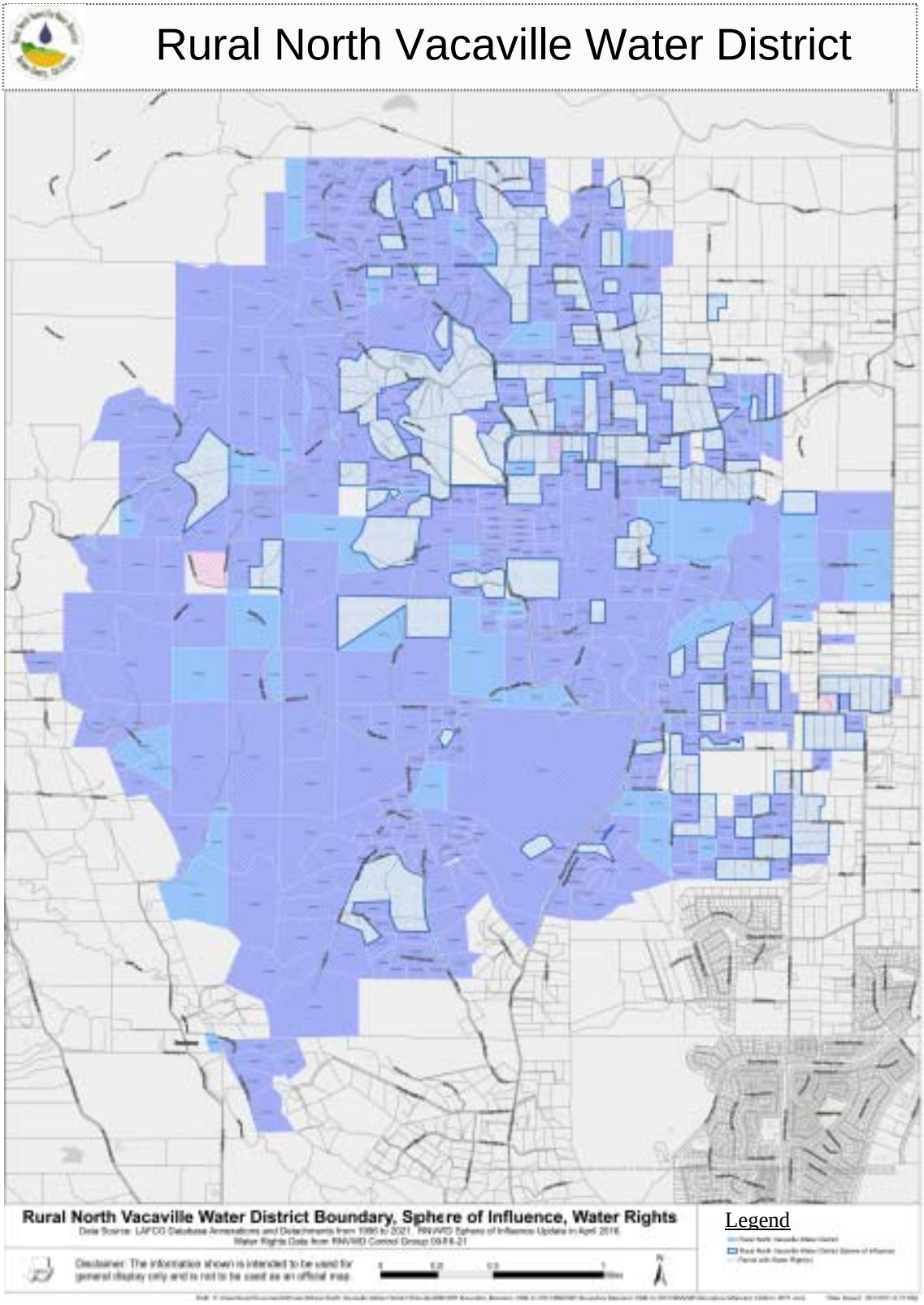
An updated map of the District's service area and SOI boundary was prepared as part of the study based on the original formation documents and approved annexations and detachments through 2021. The updated boundary map allowed for detailed analysis of parcel size, acreage, zoning, water rights, service connections, and potential lot splits. A list of Assessor's Parcels making up the District's service area is included in the Appendix.

Table 5-1: Assessor's Parcels by Parcel Size

Parcel Size	Number of Parcels	Acres	Water Rights
<5.0 acres	182	565.0	143
5.0 - 9.9 acres	171	947.2	163
10.0 - 19.9 acres	44	632.0	35
20.0 – 99.9 acres	81	2,763	159
100.0 + acres	1	256.0	15
Unknown	1		1
Total	**480**	**5,162.7**	**516**

Source: Solano LAFCO, October 7, 2021
* See Table A1 in the Appendix for APN and Ownership

Figure 5-2: District Parcels, Boundaries, SOI, & Water Rights



5.4: DISTRICT WATER RIGHTS/SERVICE CONNECTIONS

According to the Benefit Assessment District Engineer's Report[21] "the water system for the Rural North Vacaville Water District was designed to have efficient capacity to provide water for domestic and fire protection purposes to:

- 272 initially active service connections (parcels with residences)
- 70 initially inactive connections (parcels without residences)
- 143 supplemental initially inactive connections (sub dividable parcels without residences) and
- 48 initially inactive reserved connections (parcels that reserve the right to future water service but are not initially committed).

During the design of the Water Distribution System, property owners within the District were allowed to obtain or reserve additional service connections to accommodate the future subdivision of parcels within the District. Property owners obtaining Supplemental Connections either (1) paid up front the assessment for the Supplemental Connection, or (2) entered into an agreement to pay for additional assessments. Property owners acquiring Reserve Connections to serve parcels anticipated to be created by future subdivision of a parcel paid a reservation fee for an option to purchase additional connections within 10 years of the Final Order Date. Any Reserve Connections that were not converted into a Regular Connection on or before February 28, 2011 (ten years after the Final Order Date) forfeited all monies paid to reserve the water service connection. Forty-seven (47) of the reserved connections reverted back to the District. No additional water connections beyond the 533 service connections are available unless the District's capacity is expanded.

Creation and Configuration of Water Rights: A system of water rights was created based on the water systems design capacity of 533 service connections. These water rights/service connections were allocated based on a property owner's option to purchase one or more water rights. At the time of district formation property owners had the opportunity to purchase one or more service connections. Options for reserve connections were granted for a period of ten years to serve lots to be created by future subdivision of an existing parcel. When the time period for exercising the options expired 47 of the reserve connections reverted back to the District's ownership. As of June 30, 2020, there were 37 water rights/service connections that were owned by the District and available for sale. In August 2020, the District sold 15 water rights at $40,000 each less an option amount of $1,000 per right) to a land owner under an installment note at an annual interest rate of 3%. [22] The configuration of water rights as of December 31, 2020 included 398 service connections, 113 supplemental connections, and 22 water rights/service connections that were pending or were available for sale. The current configuration as of December 31, 2021 is 407 service connections, 113 supplemental, and 13 water rights pending or available for sale (see Water Rights Calculations in the Appendix).

District Definition of Water Rights: RNVWD defines Water Rights as a developed, undeveloped, or supplemental service connection, all of which have a right to connect to the

[21] Coastland Civil Engineering, *"Engineer's Report for Supplemental Assessments to the Rural North Vacaville Water District Assessment District"*, revised January 5, 2001

[22] Rural North Vacaville Water District Water Assessment District – Fiscal Year 2019/20 Annual Report, May 2020

District's Water Distribution System.[23] A Developed Connection (or active service connection) is defined as a metered connection that is providing or is immediately available to provide water service to a residential parcel. An Undeveloped Connection has the right to connect, but is unmetered with no connection to the main water system. Supplemental Connections are additional water rights that were purchased at the time of the District's formation to serve parcels anticipated to be created by future subdivision of a parcel. During the design of the Water Distribution System, property owners within the District were allowed to obtain supplemental service connections to accommodate future subdivision of their parcels.

Sale/Transfer of Water Rights/Service Connections: There are a limited number of water rights/service connections that are available for sale by the District in accordance with the District's adopted Policies and Fee Schedule. The District plans to sell these connections for $40,000 per connection to interested parties on a first come, first serve basis. Property owners, either within or outside of the District, wanting to receive potable water can purchase an available water right for their parcel if they reside within the District or are approved for annexation into the District. Once the remaining water rights/service connections have been sold and all undeveloped connections fully installed and activated the District will have reached its maximum design capacity of 533 service connections. Additional water connections will not be available beyond its current design capacity of 533 water rights/service connections, unless the District Board approves expansion of the water distribution system in accordance with the procedures described in the District Rules and Regulations. Expansion of the water system beyond its current capacity will require LAFCO approval based on a new engineer's report.

The RNVWD keeps a list of water rights/service connections available for sale and posts information about their availability on their website. Any property owner wanting to receive potable water can purchase one of the available water rights/service connections for their parcel on a first come, first serve basis, and must either reside within the RNVWD or be approved for annexation into the District. Property owners with water rights may transfer or sell inactive connections to other properties. Property owners with a Supplemental Water Right may sell them to another parcel within the District, subject to approval and written verification of service capacity by the District's engineer and payment of the engineer's and District's review fee. A Developed or Undeveloped Connection on a parcel of 5 acres or more may be transferred to another parcel within or immediately adjacent to the boundaries of the RNVWD, subject to District and LAFCO approval and written verification of service capacity by the District. If the connection is being transferred to a parcel outside the boundaries of the RNVWD, that parcel must be annexed to the District prior to completion of the transfer.

[23] District Rules & Regulations

Table 5.2: Water Rights/Connections Allocated
(as of December 31, 2021)

		Number of Parcels	Parcels with a Single Water Right	Parcels with Multiple Water Rights	Parcels with No Water Rights
CURRENT	In District	480	381	25	74
	In SOI	217	1	0	216
	Outside	3	3		
	Total	**700**	**385**	**25**	**290**

		Purchased		District Owned	Total Water Rights
WATER RIGHTS	In District	516			516
	In SOI	1			1
	Outside	3			3
	District Owned	0		13	13
	Total	**520**		**13**	**533**

		Lot Splits	Parcels Without Water Rights	Potential Growth	Net Additional Water Rights
POTENTIAL GROWTH	In District	259	74	333	333
	In SOI	32	216	248	248
	Outside	Future long-range planning study regarding infrastructure needs			
	Multiple WRs	0	0	0	(25)
	District Owned	0	0	0	(13)
	Total	**291**	**290**	**581**	**543**

Source: Solano LAFCO Updated District Boundary Map as of 10/30/21; RVNWD Water Rights Tracking Sheet; Email dated 8/23/21

SECTION 6: MUNICIPAL SERVICE REVIEW

Municipal Service Reviews are conducted in accordance with criteria established in California Government Code Section 56430 and include findings and determinations made with respect to each of the following seven factors:

6.1: GROWTH AND POPULATION OF THE DISTRICT

Current Population: The RNVWD serves a rural residential community in unincorporated Solano County covering approximately 8.11 square miles. The district's estimated population is approximately 1,118 residents based on the total number of active water service connections (398) times the countywide average household size of 2.81 persons per household (see Table 6.1). Census tract data (which is the smallest geographic area available) from the most recent American Community Survey (2019), shows the English Hills/Pleasant Valley area has an estimated population of 3,857 residents.[24] RNVWD accounts for approximately one-third of the area's total population.

Table 6-1: Estimated Population

	Estimated Population	Housing Units	Average Household Size (Population per Household)
Solano County (2019 ACS) [1]	436,472	150,393	2.90
Solano County Households (2021 DoF) [2]	428,962	152,877	2.81
Current RNVWD Population [3]	1,118	398	2.81
Planned Growth	379	135	2.81
Estimated Population at Build out	1,497	533	2.81

Footnote:

1. U.S. Census Bureau, American Community Survey, 2019 1-year estimate, Tables K202501 and K202503
2. California Department of Finance, Demographic Unit, Table E-5: Population and Housing Estimates, January 1, 2021
3. RNVWD population is estimated based on the number of active service connections and county average household size.

Source: U.S. Census Bureau, ACS 2019 5-year estimate, Table DP05

Planned Growth: In addition to the active service connections, there are 135 undeveloped water rights/service connections. Population growth over the next five years is expected to be limited to build-out of the remaining 135 undeveloped service connections. Build-out of the remaining undeveloped connections would add approximately 379 additional residents. Once all 533 service connections have been installed the District will have reached its maximum design capacity. The District does not anticipate any population growth beyond its maximum design capacity at this time. At full build-out the District would have a population of approximately 1,497 residents and 533 households. Any further development beyond the existing capacity is dependent upon expansion of District facilities, wells, and water distribution infrastructure, which would require county development approval and a new engineer's report for expansion of RNVWD's water system. Annexations to expand the District would require LAFCO approval.

[24] Census Tract data from the American Community Survey found at: https://data.census.gov/cedsci/table?g=1400000US06095252903_1500000US060952529031,060952529032,060952529033,060952529034&tid=ACSST5Y2019.S0101&hidePreview=true

Potential Growth Pressure: Potential growth pressure for expansion of the District's water system may come from several sources, including parcels without water rights and District land owners with large parcels looking to subdivide. There are 74 parcels totaling 724.33 acres inside the district with no water rights or service connection. These parcels range in size from less than 2-acres to 58 acres and include vacant, agriculture, and rural residential uses. One-third of the parcels have residences that are on private wells. These property owners may want to be connected to the District's public water supply at some future date. In addition, there are 89 large parcels that could be split into 259 additional lots based on the county's minimum lot size zoning.

Pressure for expansion may also come from properties located outside the District, but within the District's existing SOI that want to be annexed into the district in order to obtain a reliable water supply. There are 217 parcels within the existing SOI (one parcel with a water right and 216 without water rights) that may eventually want to be annexed into the district. Three additional parcels with water rights are located outside the District boundaries and SOI.

The English Hills area includes many parcels with homes on private wells. At some future date it is likely that these shallow wells may experience water shortages. Area residents whose private wells go dry may need to connect to a reliable public water system. Due to being in a water scarce area, recent subdivision maps approved by Solano County have required that any new parcel (regardless of size or zoning) obtain a connection to the District's water supply. Solano County, LAFCO, and RNVWD should develop a long term solution to address the area's future need for a reliable water supply. The District should move forward with an updated engineering report and identify redundant supplies to improve reliability, possibility through agreements and partnerships with neighboring water purveyors. The development of a long-term plan to provide services to local residents with shallow wells will also build water supply resiliency for thee residents within the District.

Table 6-2: Current & Planned Growth

	# Connections	Population Per HH	Estimated Population
Current Capacity			
Current Connections	398	2.81	1,118
Planned Growth	135	2.81	379
Total - Current Capacity	**533**	**2.81**	**1,497**
Potential Growth	**Existing Parcels**	**# New Lots**	**Estimated Population**
RR 2.5	51	198	556
RR 5	16	23	65
A 20	19	38	107
Total – Potential Growth	**86**	**259**	**728**

Source: LAFCO, District database

Determinations:

6.1.1 - RNVWD currently serves an estimated population of approximately 1,118 residents based on the total number of current active water service connections.

6.1.2 – Planned growth includes 135 undeveloped service connections that would result in an increase of approximately 379 additional customers. At fully built-out, the district would have an estimated population of approximately 1,497 residents.

6.1.3 - Future expansion of the district beyond its current capacity would require a new engineer's report and LAFCO approval.

6.1.4 County planners indicate that there are no development proposals currently being considered within the district's boundaries.

6.1.5 A long term infrastructure plan should be developed for the English Hills area. RNVWD would be a logical service provider.

6.2: LOCATION AND CHARACTERISTICS OF DISADVANTAGED UNINCORPORATED COMMUNITIES WITHIN OR CONTIGUOUS TO THE DISTRICT

When preparing municipal service reviews, LAFCOs are required to consider the location and characteristics of any disadvantaged unincorporated communities (DUC) [25] within or contiguous to a local agency's sphere of influence to ensure that the needs of these unincorporated communities are met when considering district expansions and service extensions, in particular, water, wastewater, and structural fire protection services. CGC §56033.5 defines a disadvantaged unincorporated community as an inhabited community containing 12 or more registered voters within an unincorporated area of a county where the annual median household income (MHI) is less than 80 percent of the statewide annual MHI. According to the most recent figures from the U.S. Census Bureau's American Community Survey, the Statewide MHI was $80,440. Eighty percent (80%) of the state MHI yields an income threshold of $64,352 for defining a DUC.

There are four unincorporated Census Designated Places (CDP) in Solano County (see Table 6.3 below), none of which are located within or contiguous to Rural North Vacaville Water District boundaries. The closest unincorporated communities are Hartley and Allendale, neither of which is contiguous to RNVWD. Both communities are located to the east of RNVWD between Timm Road and I-505. The community of Elmira is located approximately 4.5 miles southeast of Vacaville and Green Valley is located four miles north of Cordelia. None of the CDP's qualifies as a DUC. The median household income for all CDPs is above 80% of the statewide MHI and do not meet the financial threshold as a disadvantaged unincorporated community.

[25] Disadvantaged Unincorporated Community, is defined as an inhabited community (consisting of at least 10 dwelling units with 12 or more registered voters) within an unincorporated area of the county in which the annual median household income is less than 80% of the statewide annual median household income.

Table 6-3: Solano County Unincorporated Communities

Census Designated Place	Population	Median Household Income	% of State's MHI ($80,440)
Allendale CDP	1,388	$ 86,652	107.7%
Elmira CDP	244	$ 64,574	80.3%
Green Valley CDP	1,472	$ 127,220	158.2%
Hartley CDP	2,960	$ 86,652	107.7%
Source: U.S. Census Bureau, American Community Survey 2019, 5-year estimate, Table S0101; City Data website https://www.city-data.com/city/Green-Valley-California.html			

The California Department of Water Resources has an on-line mapping tool[26] that shows census tracts within Solano County that qualify as a disadvantaged community. Review of DWR's on-line mapping tool did not identify any census tract containing a disadvantaged community that is within or contiguous to RNVWD.

While RNVWD provides potable water for domestic use and fire protection purposes there are no disadvantaged unincorporated communities that meet the definition of a DUC within or contiguous to the District's boundaries or SOI. Therefore, the provisions of Senate Bill 244 do not apply to RNVWD.

Determinations:

6.2.1 - There are no disadvantaged unincorporated communities that meet the definition of a DUC within or contiguous to the District's boundaries or SOI.

6.3: PRESENT AND PLANNED CAPACITY OF PUBLIC FACILITIES, ADEQUACY OF PUBLIC SERVICES, AND INFRASTRUCTURE NEEDS OR DEFICIENCIES

LAFCO is responsible for determining that an agency is reasonably capable of providing necessary services and basic infrastructure to serve areas within its boundaries and has the capacity to serve areas within its sphere of influence upon annexation. This section reviews the adequacy of RNVWD's existing water distribution system.

DESCRIPTION OF WATER SYSTEM [27]

RNVWD is the sole provider of public water service to customers within its boundaries. Groundwater is pumped from two wells into storage tanks and chlorinated before being discharged into the distribution system consisting of approximately 43 miles of distribution pipelines. Booster stations and pressure reducing or regulating valves maintain pressure in the system. Metered service connections with backflow preventors connect the system to individual parcels.

The water system is regulated and permitted by the California State Water Resources Control Board – Division of Drinking Water for water quality and delivery. RNVWD was issued a water supply permit (No. 02-04-00P-4810013) on June 16, 2000. The system has been operational since 2003 and is in compliance with the provisions of its domestic water supply permit.

[26] DWR Online Mapping Tool found at: https://www.arcgis.com/home/webmap/viewer.html?layers=edfa09824bfa4780b7d698ecf11e04bc
[27] RNVWD Operations and Maintenance Plan dated February 8, 2018

Water Source and Supply

RNVWD's sole source of water comes from two deep groundwater wells drilled to a depth of approximately 1,400 feet into the basal zone of the Tehama Formation aquifer. Both wells are located in the Solano Sub-basin (Number 5-21.66) of the Sacramento Valley groundwater basin. Well #1 is the primary source of water. Well #2 has been permitted for emergency standby use due to elevated arsenic levels and can be used only for five consecutive days no more than 15 days per year. The District has approved plans for an arsenic removal treatment plant for Well #2. Located approximately 1,000 feet apart, each well produces as much as 0.504 million gallons per day (mgd). Conveyance of the water from the well sites to the storage tanks is accomplished by two 350-gallon/minute pumps, one at each well site and pumped into two water storage tanks (see Schematic Diagram of Water System). The well pumps are regulated by tank level controllers and operate in series to supply the distribution system. The District has installed one standby generator at Well #1 and plans to install a standby generator at Well #2 by June 2022 for pumping water into each of the storage tanks. These generators have an Automatic Transfer Switch which turns the generator on automatically in event of P.G &E power outages.

Distribution System

The distribution system consists of two 300,000-gallon water storage tanks, three booster pump stations, and pressure reducing valves (PRV). Water is delivered across five pressure zones through approximately 43 miles of water mains ranging in size from four to 12 inches in diameter, consisting mostly of Class 150 and 200 PVC piping. Pressure in the distribution system varies between 60 and 130 psi due to hilly terrain with ground elevations ranging from 170 feet to 980 feet above sea level. Four 250-gallon/minute pumps at the two storage tank sites; four pressure reducing valves in Zone 2, blow-offs, and an electronic Supervisory Control and Data Acquisition System (SCADA) provides reliable water flow and pressures to every connected parcel within the District. Pressure regulating valves are installed and maintained at each residential service connection to ensure an adequate delivery pressure range.

The two well sites are tied to the Fire Station on Cantelow Road and PG&E has given the District an outage block 50 designation, which means minimal power outages will occur. Backup generators maintain system pressure in the event of a PG&E power outage. Security for the distribution system includes chain linked fences, locked pump sheds, and storage tanks with locked ladders reducing the risk of unauthorized entry, theft, or vandalism.

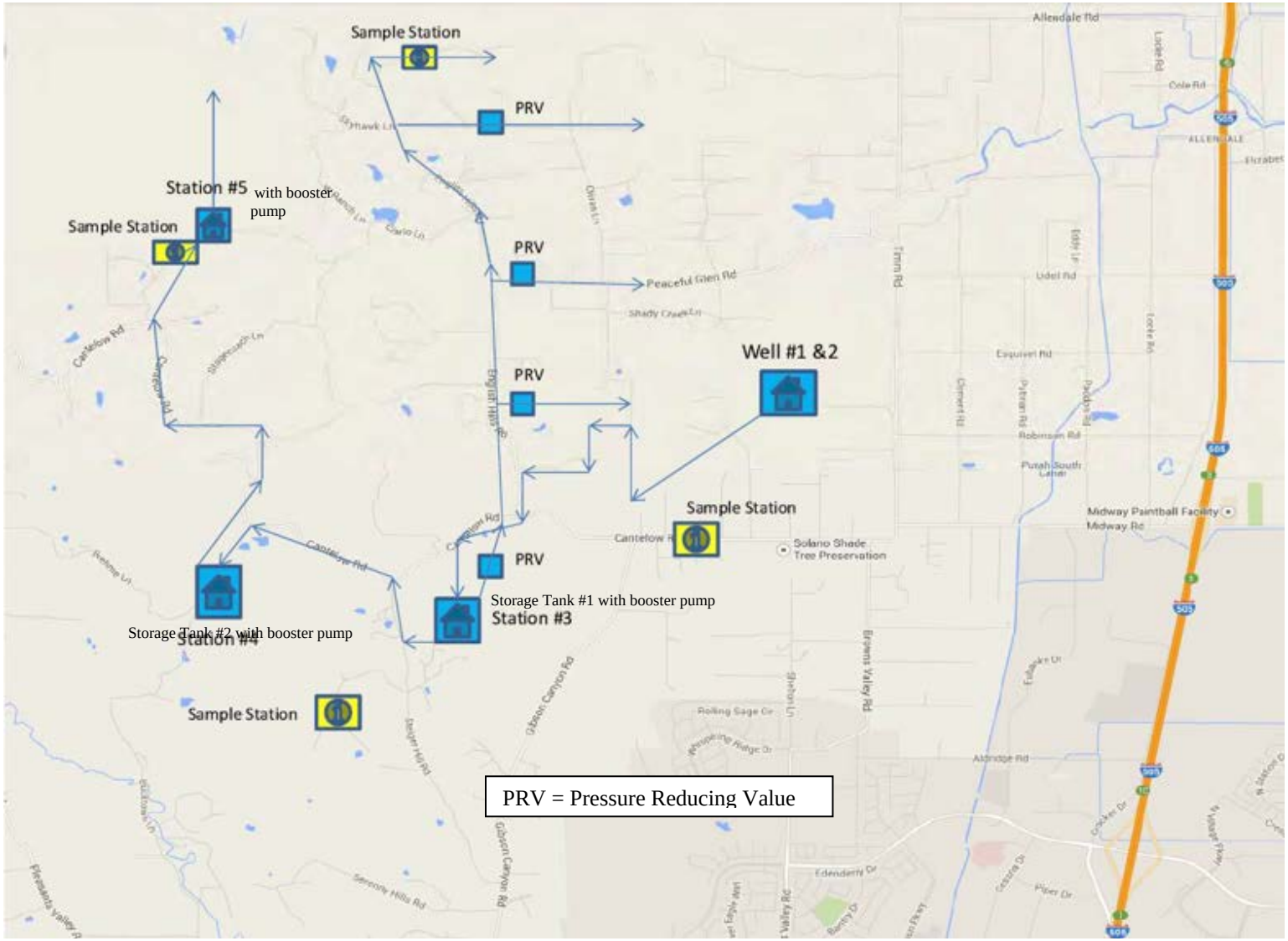
A cross-connection control program (as required by CCR Title 17, §7584) has been implemented that includes: backflow protection devices at each service connection, personnel training, annual backflow prevention device testing, and records maintenance. RNVWD contracts with an outside contractor to perform annual testing and cross connection surveys.

Table 6-4: Water Storage Tank Capacity

Name	Location	Storage Capacity
Surge Tank	Well 01	5,500 gallon Pressure Tank
Tank 01	Station Site 3	300,000 gallons
Tank 02	Station Site 4	300,000 gallons
Pressure Tank	Station Site 4	5,500 gallon Hydropnuematic Pressure Tank

Source: RNVWD Sanitary Survey Report, April 2017

Figure 6-1: Water Distribution System Diagram



Pressure Zones

The distribution system has five pressure zones (see Table 6-5). Because of elevation changes in the service area terrain, the water storage tanks are supplied by pumped and gravity fed supply lines from Station Sites 3 and 4. Pressure regulator valves are installed and maintained at each residential service connection to ensure an adequate delivery pressure range.

Pressure is maintained in the system by the water storage tanks and booster pumps. Operation of the wells and booster pump station 3 is controlled by a start and stop water level inside the water storage tanks. Booster stations 4 and 5 are controlled by specific pressure set points. If the distribution system pressure begins to drop below the specified set point, booster pump stations 4 and 5 are turned on in sequence to provide the required water delivery and maintain the pressure in the distribution system.

The District utilizes a SCADA system to continuously monitor and remotely operate the system as needed. This feature allows the system to set pressure parameters throughout the distribution system to alarm in case of malfunction requiring further investigation.

Table 6-5: Pressure Zones

Zone	Begin	End	Description
Zone 1	Well Source	Station Site 3	100-120 psi
Zone 2	Station Site 3	Service Area	Gravity Feed to Distribution
Zone 3	Station Site 3	Station Site 4	Lifted by Booster Station 3
Zone 4	Station Site 4	Station Site 5	Lifted by Booster Station 4
Zone 5	Station Site 5	Service Area	Lifted by Booster Station 5

Source: District Operation Plan, 2017 Sanitary Survey

Water Quality & Treatment

RNVWD chlorinates its water supply on a continuous basis. A supervisory control and data acquisition system monitors chlorine residual levels. The feed rate is controlled manually to provide delivered chlorine residual levels ranging between 0.5 and 0.8 mg/L. Each well is supplied chlorine by the centralized chlorine injection system supplied from a centralized treatment storage shed adjacent to Well #1. The ProMinent chemical metering pump injects chlorine through polyethylene tubing downstream of Well #1's check valve. Well water is treated to comply with federal standards, chlorinated, and then discharged into the distribution system to the storage tanks and domestic service connections. Well #2 is currently used only for emergency purposes due to elevated levels of arsenic. An arsenic treatment plant is in the process of being designed for Well #2 to remove the arsenic to a level to meet state and federal guidelines and should be operational by the third quarter of 2022.

Regular inspection of the water system is conducted by the State Division of Drinking Water. The most recent Sanitary Survey Report[28] notes that the RNVWD meets all EPA and State drinking water health standards and that the tanks and distribution system appear to be well maintained and all chemical monitoring is up to date. Water quality is reported to customers via Annual Water Quality reports.

CURRENT CONSUMPTION

The district's estimated average daily demand for potable water in 2019 was 108 gallons per day per person (and 128 gpd in 2020). Water consumption figures for 2020 show an average daily demand of 144,729 gallons per day (for an average of 364 gpd per connection or 128 gpd per person). Meter readings indicate that consumption per connection varies from zero to 1,727 gallons). Average monthly water demand was approximately 3.74 million gallons (MG) per month in 2019 (versus 4.4 MG in 2020). Monthly water consumption ranges from 1.5 to 7.9 MG between summer and winter months, due primarily to landscape watering needs. Total annual consumption was 44.88 MG in 2019 and 52.83 MG in 2020. The calculated Maximum Day Demand (MDD) with a peaking factor of 1.5 was 0.381 million gallons in August of 2020.

WATER SYSTEM CAPACITY

RNVWD's water system is designed to supply potable water to a maximum of 533 households (or approximately 1,498 residents, based on a 2.81 multiplier of people per household). In addition to the parcels that benefit from domestic water service, the District also provides water to 78 fire fill station hydrants as of February 2020 (178 of which are located outside the District, but within it's sphere of influence.)

The District currently serves 398 customers with developed water connections (meter readings show 410 for 2020 with only 310 with active usage or consumption. The remaining 135 connections are undeveloped and not active. The total capacity of Well #1 is 0.504 million gallons per day (MGD) or 183.96 MG annually. Well #2, which has been approved only for emergency use, also has a capacity of 0.504 MGD, but can only be used on an emergency basis until the arsenic removal treatment plant is installed. An additional 0.600 MG of water storage capacity is available to help meet the maximum day demand. The two 300,000 gallon water storage tanks combined with the well production capacity is greater than the MDD.

Based on its current infrastructure, the District has sufficient capacity to meet its MDD and comply with state requirements for a reliable water source, storage, emergency, and fire suppression. According to the California State Water Resources Control Board 2017 Sanitary Survey Findings for RNVWD, the District *"continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions."* [29]

EXPANSION OF WATER SYSTEM

According to the District's Rules and Regulations, after January 31, 2013, the District may "authorize expansions to its water distribution system to serve additional connections." All new connections resulting from an expansion of the water distribution system shall be

[28] Sanitary Survey Report for The Rural North Vacaville System No. 4810013, April 2017
[29] Sanitary Survey Report 2017

Developed Connections. A decision to authorize an expansion of the water distribution system shall be supported by adequate plans and cost estimates. Parcels to be served by an expansion of the water distribution system shall bear all costs of the improvements necessary to expand the system capacity to supply water to said additional parcels without degradation of delivery pressures, flow rates, and schedules to parcels currently being served within the RNVWD. Expansion of the District's water distribution system will require LAFCO and County approval.

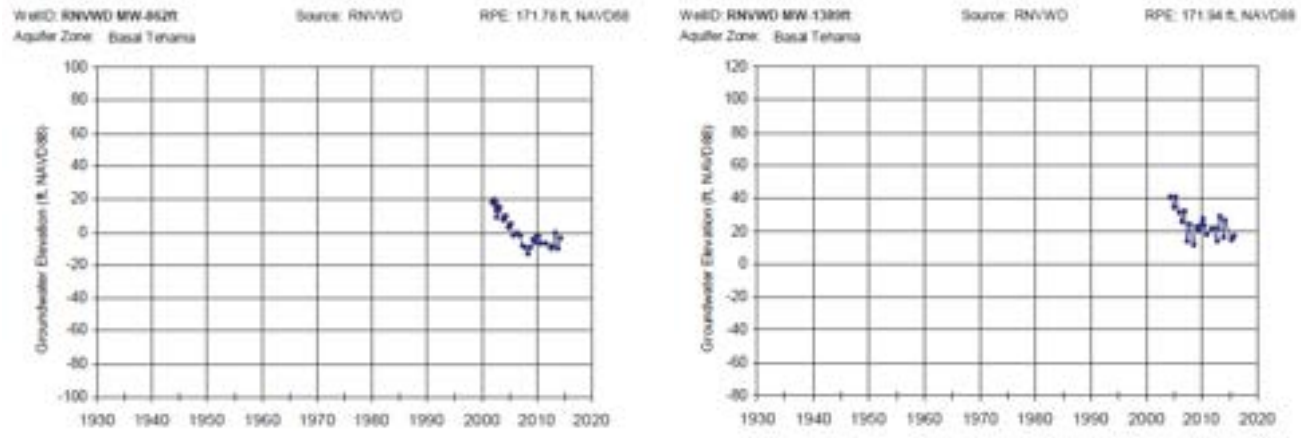
AQUIFER CAPACITY & SUSTAINABILITY

There are two major aquifers in Solano County, the Putah Fan and the Tehama Formation. The Putah Fan is a shallow aquifer that draws water near the surface in the English Hills area. Underlying the Putah Fan is the much deeper Tehama Formation. The Tehama Formation is generally found around 1,000-1,500 feet below the surface. Only the City of Vacaville and Rural North Vacaville Water District draw groundwater from the basal zone of the Tehama Formation.[30]

The Solano County Water Agency has published Groundwater Reports summarizing local conditions since 1995. The 2013-2015 report [31]indicates that the English Hills/Vaca Valley area had an overall reduction in groundwater elevations from 2012-2014, but an increase from 2014-2015. Yearly groundwater elevation trends coincided with the drought conditions of 2012-2015.

A groundwater study for the city of Vacaville found that *"groundwater levels in the RNVWD monitoring wells show declining water levels until present* (2000-2015). *The trends in these wells are likely due to local pumping effects from the RNVWD water supply well and a higher level of connectivity between the middle and deeper (basal) Tehama Formation deposits."* [32] The study concluded that City pumpage from the basal zone of the Tehama Formation was sustainable at about 8,000 acre feet per year. RNVWD would add approximately 726 acre feet per year at its maximum pumpage capacity. Ongoing evaluation of sustainable pumpage from the basal zone of the Tehama Formation should be undertaken in order to monitor groundwater levels and prevent the aquifer from being over drafted. Ongoing monitoring is important to determine sustainable groundwater yields based on the recharge rate of the aquifer.

Figure 6-2: Groundwater Level Trends



[30] Solano County Water Agency website https://www.scwa2.com/groundwater/local-conditions/

[31] SCWA Groundwater Reports, https://www.scwa2.com/wp-content/uploads/2020/02/2013-2015-Groundwater-Report-ID-187934.pdf

[32] Vacaville Groundwater Supply Sufficiency Study, P.14 found at: https://www.ci.vacaville.ca.us/home/showdocument?id=6264

IMPACT OF DROUGHT & CLIMATE CHANGE ON DISTRICT WATER SUPPLY

Droughts are a recurring feature of California's weather and climate. With regular recurring periods of drought, conservation and drought planning is a fact of life that water agencies must deal with. The District implements a water conservation management plan and has sent a memo in 2020 to customers to voluntarily limit water use per state guidelines. The State Water Resources Control Board urges water agencies to prioritize three actions: 1) closely evaluate the agencies water supply; 2) develop a contingency plan to mitigate any water supply problems that might result from current and future conditions, and 3) encourage customers to conserve water voluntarily.

Determinations:

6.3.1: According to the State Division of Drinking Water, the district is in compliance with its water supply permit.

6.3.2: The District is currently operating at 74% of its maximum capacity of 533 service connections.

6.3.3: There are 135 remaining undeveloped service connections, of which 134 have been allocated with five remaining available for sale as of December 31, 2020.

6.3.4: The district is currently operating with one well. Well #2 has been approved only for emergency use due to elevated levels of arsenic. The district is in the process of addressing the arsenic problem by installing a treatment plant for Well #2.

6.3.5: The capacity and recharge rate of the Tehama Formation basal zone aquifer is uncertain. Ongoing evaluation of sustainable pumpage should be undertaken in order to monitor groundwater levels and avoid over-drafting the aquifer.

6.3.6: The potential for future expansion of the district exists due to lot splits and annexations. Any expansion beyond the district's current capacity would require LAFCO and county development approval based on a new engineer's report.

6.3.7: District policies allow for expansion of the water distribution system to serve additional connections when supported by adequate plans and cost estimates. Parcels being served by the expansion shall bear all costs associated with the expansion.

6.3.8: The District should develop a contingency plan to mitigate any water supply problems that might result from current and future drought conditions

6.4: FINANCIAL ABILITY OF AGENCY TO PROVIDE SERVICES

Special districts are classified as enterprise or non-enterprise districts based on their primary source of revenue. Enterprise Districts operate much like a private business and are supported primarily by fees they charge their customers for services delivered. Non-Enterprise Districts are funded primarily by property taxes.

RNVWD operates as an Enterprise Fund, where the costs of providing services are financed primarily through user charges and fees. Capital improvements are funded from the issuance of bonds, cash resources, and/or cash flow from operations. A special assessment of property owners was used to finance the initial construction of the District's wells and water distribution system. The District does not receive any share of the Solano County ad valorem property taxes.

In evaluating the District's financial condition and capacity various documents were reviewed including annual budgets, fiscal policies, rate schedule, and audited Financial Statements to determine fiscal viability and adequacy of funding practices.

Financing Authority: Under California law, community service districts can utilize a variety of funding mechanism for financing district operations and capital improvements. Financing tools authorized under the State Government Code include user fees, service charges, benefit assessment taxes, and the issuance of bonds. A CSD has the authority to levy assessments and fees on District property owners to pay for operations, services, facilities, and capital improvements.

Operating Revenues & Expenses: RNVWD generates revenue from several sources, including user charges, sale of water rights, interest income, and special assessments. User charges are the principal source of operating revenues. Customers pay a base rate per service connection, plus charges for water usage in accordance with the Board approved rate schedule. Water sales are billed on a monthly basis per connection and usage. In most years, user charges generate sufficient revenue to cover annual operating expenses. In Fiscal Year ending June 30, 2020, the district experienced a modest shortfall primarily due to higher than expected maintenance and utility costs (see Table 6-6). A new rate schedule was adopted to cover these higher costs.

Major expenses include professional and specialized services and maintenance, which account for approximately 88% of the District's annual expenditures. District operations are managed by a staff of four part-time, independent contractors, including a general manager, clerk/administrator, billing manager/bookkeeper, and meter reader. Solano Irrigation District is under contract to provide operation and maintenance services of RNVWD facilities. Other specialized services include legal, accounting, audit, and engineering. Utility costs to operate the pumps and other equipment account for the third highest level of expenditures, followed by general and administrative expenses.

Over the past five years, between 2016 and 2021, the District's annual operating expenses increased by approximately 49% primarily due to increases in professional and specialized services, utility expenses, higher maintenance costs for repair of underground leaks and other minor repairs, plus an engineering study on how to remove arsenic from Well #2.

Historically, the District has owned a block of water rights/service connections that were created as reserves upon formation of the District. In the intervening years, the District has sold these water rights/service connections to interested parties. As of June 30, 2020, the District owned 37 water rights/service connections that were available for sale. In August 2020, the District sold 15 water rights/service connections at $40,000 each to a single land owner with $1,000 down and the balance of $39,000 per service connection (for a total of $585,000) financed under an installment note at an annual interest rate of 3%.

Non-operating income comes from a special assessment for loan repayment and other sources. The District also receives some funding from investment earnings, interest, and other sources.

Annual revenues and expenses from the most recent audited financial statements are shown on Table 6-6 below.

Fund Balances: The District has maintained a positive fund balance over the past five years. For fiscal years 2016 thru 2018 the District reported its financial activities using two funds: a *General Fund*, which was the District's primary operating fund and a *Debt Service Fund*, which accounted for revenue and payments made on the District's long-term general obligation debt. A change in financial reporting was made in fiscal year 2019 where District funds are now classified as enterprise funds with District financial activities reflected on the Statement of Revenues, Expenses, and Changes in Fund Balance. Financial statements are prepared on a modified accrual basis consistent with generally accepted accounting principles (GAAP).

During fiscal year 2019-20, the District increased its net position by $414,920 from the prior fiscal year. At the end of FY 2019-20, the District's Net Position (revenue over liabilities) was $6,343,400. The largest portion of the District's net position reflects its investments in capital assets (e.g., infrastructure and equipment) less outstanding debt used to acquire those assets.

Approximately 17.5% of the District's net position represents financial resources subject to external restrictions to cover debt service and debt extinguishment. The remaining balance of $654,121 is unrestricted and may be used to meet the District's ongoing obligations to its property owners and creditors.

Table 6-6:vDistrict Revenues, Expenses, & Fund Balance
(for Fiscal Year ending June 30)

	2016	2017	2018	2019	2020
Operating Revenues					
Service Charges	$ 527,842	$ 553,990	$ 565,910	$ 586,481	$ 607,357
Other Operating Revenue	194,921	10,460	2,985	6,538	6,995
Total Operating Revenues	**$ 722,763**	**$ 564,450**	**$ 568,895**	**$ 593,019**	**$ 614,352**
Operating Expenses					
Professional & Specialized Services	$ 204,591	$ 249,468	$ 274,571	$ 275,706	$ 272,065
Maintenance	150,670	184,394	207,500	238,535	283,746
Utilities	39,411	45,013	45,204	45,178	49,296
General & Administrative	16,149	14,902	18,190	15,803	15,993
Other (permits, fees, misc.)	13,937	7,534	8,825	10,571	10,652
Total Operating Expenses	**$ 424,758**	**$ 501,311**	**$ 554,290**	**$ 585,793**	**$ 631,752**
Net Operating Revenue	**$ 298,005**	**$ 63,139**	**$ 14,605**	**$ 7,226**	**$ (17,400)**
Non-Operating Income					
Property Assessments	937,024	919,908	925,347	909,622	902,630
Investment Earnings	-	16,748	23,234	34,165	29,045
Other Non-Operating Revenue	12,331	40,000	0	31,318	11,400
Total Non-Operating Income	**$ 949,355**	**$ 976,656**	**$ 948,581**	**$ 975,105**	**$ 943,075**
Debt Service (Principal + Interest)	164,030	139,328	115,719	90,036	64,072
Change in Net Position	1,083,330	900,467	847,467	892,295	861,603
Minus Depreciation	433,985	433,985	431,214	441,033	446,683
Net Change in Fund Balance	**649,345**	**466,482**	**416,253**	**451,262**	**414,920**
Fund Balance Beginning of Year	3,945,138	4,594,483	5,060,965	5,477,218	5,928,480
Fund Balance End of Year	**$ 4,594,483**	**$ 5,060,965**	**$ 5,477,218**	**$ 5,928,480**	**$ 6,343,400**

Source: RNVWD Audited Financial Statements for FY 2016, 2017, 2018, 2019, 2020; SCO Financial Transaction Reports

District Assets/Liabilities: District assets exceeded its liabilities as of June 30, 2020 by $6,343,400. District assets include financial assets (bank accounts, receivables, supplies inventory, and prepaid expenses) and capital assets (infrastructure and equipment) that are reported on the District's financial statements. Capital assets are defined by the District's capitalization policy as assets with an initial cost of more than $5,000 and have a useful life of three years or longer. District owned structures, improvements, and equipment are depreciated using the straight-line method over the estimated useful economic life. As of June 30, 2020 the District's capital assets totaled $5,652,717 (net of accumulated depreciation). Financial assets totaled $1,791,758, including cash, investments, and receivables. Liabilities include accounts payable, accrued expenses, and long term debt. Current and long-term liabilities total $1,136,596.

Annual Budget: An annual budget is adopted each year by the Board of Directors, which sets forth the anticipated revenues and expenditures for the coming fiscal year beginning July 1 and ending June 30. The budget is divided into various categories covering maintenance, operation, services, supplies, employee compensation, capital expenditures, interest and debt service, reserves, general administration, and contingencies. Excess expenses are funded through the use of operating reserves in accordance with the District's reserve policy adopted by the Board. The District's operating budget for the current fiscal year (FY 2021-22) is $1 million dollars (see Appendix for breakdown of revenues and expenses).

Rate Schedule: A new rate schedule was approved by the Board in August 2021 to increase the base fee for supplemental water rights and capital recovery charges (see Table 6-7). Without the rate increase there would have been a budgetary shortfall of approximately $50,000. The District reviews its rate schedule periodically to ensure that it provides adequate funding to cover the costs of providing water service to customers.

Table 6-7: Water Rate Schedule (as of 9/24/21)

Description	Amount	Notes
Basic Service for all properties with single water right	$72.90 per month	Per May 2019 Board approval
Supplemental water rights/service connections	$45.00 per month	Per Aug 2021 Board approval
Tier 1 Usage rate: 0-25 ccf (0-18,700 gallons)	$2.08 per ccf	1 ccf=748 gallons
Tier 2 Usage rate: over 25-50 ccf	$2.08 per ccf	Per June 2018 Board approval
Tier 3 Usage rate: over 50 ccf	$2.08 per ccf	Per June 2018 Board approval
Capital Recovery Charge, CRC	$45.00 per month	Per Aug 2021 Board approval
Source: RNVWD website		

Capital Improvements:

Construction of the District's groundwater wells and water distribution system was financed using State loan programs. In June 2001, the District entered into two loan agreements. The first loan from the California Department of Water Resources for $5

million was used to construct the water distribution mains, and a second loan for $8.8 million from the California Department of Health Services was used to pay for the cost of engineering, design, and construction of the wells, water storage tanks, and other infrastructure. The loans were awarded for a period of 20 years.

A benefit assessment district (RNVWD Assessment District #1) was formed and a special assessment to fund repayment of the construction loans was approved by District property owners in 2003. Based on the benefits received two assessment zones were established due to the different levels of service are being provided. The two zones include:

Zone 1 (Domestic Water Zone) provides water to parcels located within the District for domestic use and fire suppression purposes. The assessment for parcels located within Zone 1 is comprised of five cost components (piping, well stations, water treatment system, booster stations, and storage reservoirs). The costs of these components were allocated to each parcel on a per connection basis (one connection per parcel). Several property owners within Zone #1 agreed to purchase supplemental connections and/or reserved connections. Property owners who purchased supplemental connections were assessed the full cost of the connection. Unused reserved water rights reverted back to the District after ten years.

Zone 2 (Fire Protection Zone), includes parcels located within the district's SOI that receive water for fire suppression purposes only. Direct Benefit parcels (DBP) located in the District received one full fire protection assessment per domestic connection. Indirect Benefit parcels (IBP) located in the SOI, but outside the District boundaries, receive less benefit due to a time delay filling the fire suppression equipment and are assessed 75% of one full fire protection assessment.

Different rates were established for each zone based on the proportional benefit conferred on a parcel as determined by the Assessment Engineer (Reports dated July 1999 and January 5, 2001). District property owners pay an annual assessment on their County Property Tax Bill equal to their pro rata share of the principal, interest and administrative expenses required to repay the loans which financed the construction of the water distribution system. In fiscal year 2019-20, a total of 599 parcels were levied, 374 parcels had both water connections and fire protection services, and 225 parcels have fire protection services only. As of June 2021, both loans have been paid in full. The DWR loan was paid off as of April 30, 2020 and the DPH loan was paid off in May 2021. Future property tax statements will no longer include an assessment for repayment of the loans.

In 2016, the District adopted a 10 Year Capital Improvement Plan (CIP) [33] that includes equipment replacement, distribution system improvements, maintenance activities, water quality (arsenic studies and treatment), and recurring funds for replacement of instrumentation, control equipment, and meters. The District has adopted a Capitalization Policy for the acquisition of new equipment and facilities. Capital improvements are financed from existing cash resources, issuance of bonds, and cash flow from operations.

[33] RNVWD Operations and Maintenance Plan, February 8, 2018 found at: https://rnvwd.com/docs/RNVWDFinalOperationsPlanFeb2018.pdf

The District is considering a new bond measure for upgrade and replacement of existing infrastructure. Most of the District water system and infrastructure are approximately 10 years old and will eventually need replacing.

Debt Service: The District is currently debt free with both construction loans for development of the water system having been repaid. The District has a new 10-year loan in place for $1.2M for construction of the arsenic removal treatment plant, but has not drawn down on the loan to date. The balance of the $1.5M construction cost ($300k) is covered by excess District reserves which in the reserve policy account.

Reserve Accounts: The District maintains several reserve funds to meet specific needs of the District. The reserve policy, initially adopted on September 9, 2014, was recently updated as of April 13, 2021. Reserve funds are used to cover debt service, capital improvements, unexpected expenses, and short-term cash flow needs. Reserve accounts include:

Debt Service Fund is a restricted fund of the District for debt service, to meet the reserve requirement as established by the Board approved loan agreements.

Debt Extinguishment Fund is a restricted fund for the benefit of lien holders to hold money in reserve to satisfy the debt.

Capital Maintenance Fund is a reserve operating account to setup to be utilized for future maintenance of the water system. The District has established a reserve target amount of $500,000.

Operating Fund was established to provide a reserve for short term cash flow needs and unexpected, unbudgeted operating expenditures, including emergencies and contingencies that may arise. The District has a target of $300,000 in short term investments and/or cash for its operating fund reserve.

The District's cash resides in the Solano County Treasury and an outside bank account. Cash maintained in the County Treasury is pooled with the County of Solano. The District's ability to withdraw large sums of cash from the County Treasury is subject to restrictions set by the County Treasury. The District maintains three deposit accounts at a financial institution. As of June 30, 2020, the aggregate balance of these three accounts was $817,806.

Financial Reporting: The District conducts an annual audit of its financial statements using an outside independent auditor. In 2019, the District reclassified its audited financial statement from a governmental activities format to a business-type activities (enterprise fund) format. The financial statements for the year ended June 30, 2018, have been restated to conform to the new classification.[34] RNVWD posts its annual audited financial statements on the District's website.

As required by the California Government Code §53891 and §53893 the District submits an annual Financial Transaction Report to the State Controller's Office. RNVWD's latest filing posted on the State Controller's Office website is for fiscal year ending 2019.

[34] Annual Financial Report with Independent Auditor's Report For the Year Ended June 30, 2019

The most recent audited financial statement (2019-2020) noted no material weaknesses in financial reporting or operations.

Determinations:

6.4.1 RNVWD operates as an Enterprise Fund, where the primary source is from user charges and fees. Capital improvements are financed from special assessments, fees, and cash flow. The District does not receive any share of the ad valorem property taxes from Solano County.

6.4.2 A special assessment of property owners was used to finance the construction of the district's wells and water distribution system. Both loans have since been repaid and the district is currently debt free.

6.4.3 The District maintains reserve accounts for operating and capital improvements that exceed District policy targets.

6.4.3 The district maintains a rate schedule that is posted on its website. The rate schedule is updated periodically to meet the district's operating needs.

6.5: STATUS AND OPPORTUNITY FOR SHARED FACILITIES

RNVWD contracts with the Solano Irrigation District (SID) to operate RNVWD facilities and perform all of the required functions for system operation, maintenance of facilities, and repair of system leaks to keep the system in good running order. SID also conducts water quality testing and meets monthly with the RNVWD's General Manager to keep the District informed of the status of the system. RNVWD owns the water system and has no shared facility agreements.

The District is currently a member of the Joint Powers Insurance Authority (JPIA) with other special districts. The JPIA provides discounted insurance coverage for liability and property damage. The California JPIA provides liability coverage that offers members two program options: the primary liability program and the excess liability program. Coverage in both programs includes bodily injury, personal injury, or property damage to a third party resulting from a member activity, including automobile liability. Employment practices liability is also a covered exposure. The JPIA also provides workers' compensation coverage for member agencies.

RNVWD is a member of the Association of California Water Agencies (ACWA) and the California Special Districts Association.

RNVWD has participated in a number of studies and projects with other local agencies including the Coordinated Groundwater Analysis Project to study and monitor the Putah Fan/Tehama Formation Groundwater Basin. Other participants in the Project include the Solano Irrigation District, City of Vacaville, City of Dixon, Reclamation District 2068, Solano County, and the Solano County Water Agency.

A number of local water agencies have formed a multi-agency Groundwater Sustainability Agency (GSA) [35] to develop and implement a Groundwater Sustainability Plan (GSP) for the sustainable management of groundwater in the Solano Sub-basin. Collectively the group,

[35] https://www.solanogsp.com/solano-collaborative/

referred to as the Solano Collaborative, has worked together to clarify GSA boundaries to avoid any concerns of boundary overlap or uncovered areas in the Solano Sub-basin. The parties have also developed a memorandum of understanding for ongoing collaboration and coordination for groundwater sustainability planning and management of the Sub-basin. RNVWD is currently not a member of the Solano Collaborative, but could join and should actively participate in the development and management of the groundwater sustainability plan for the Solano Sub-basin given that the easterly part of the District, including its two groundwater wells, are located in the Sub-basin and draw water from the Tehama Formation aquifer. Implementation of the Solano Sub-basin GSP will require that water agencies utilizing groundwater in the Sub-basin to operate within its sustainable yield by 2040.

Determinations:

6.5.1 RNVWD's water system has limited opportunities and need for shared facilities. The district does contract with a third party agency for operation and maintenance. RNVWD also is a member of the Joint Powers Insurance Authority, along with other special districts, which provides discounted insurance coverage for liability and property damage.

6.5.2 RNVWD has participated with other local agencies in a number of studies and projects, including the Coordinated Groundwater Analysis Project to study and monitor the Putah Fan/Tehama Formation Groundwater Basin.

6.5.3 RNVWD is currently not a member of the Solano Collaborative, but could and should join and participate in the development and management of the groundwater sustainability plan for the Solano Sub-basin given that the easterly part of the district, including its two groundwater wells, are located in and draw water from the basal zone of the Tehama Formation aquifer.

6.6: ACCOUNTABILITY FOR COMMUNITY SERVICE NEEDS, INCLUDING GOVERNMENTAL STRUCTURE AND OPERATIONAL EFFICIENCIES

Management and Operational Efficiencies

RNVWD is a small community water system governed by an independent five-member Board of Directors elected at-large to 4-year terms by registered voters living in the District. Board Members are registered voters that reside within the District and serve on a voluntary basis without compensation. Board meetings are held bi-monthly and are open to the public in accordance with Brown Act requirements.

The District has an adopted set of Bylaws and distributes written agendas and meeting minutes prior to Board meetings. The District maintains a website as required by SB 929 and posts agendas, minutes, Board policies, and other relevant information. The District has adopted a conflict of interest policy and information about reimbursement of expenses is filed with the State Controller's Office and posted on the District's website.

District staff includes four part-time, independent contractors who oversee the operation, management, and financial affairs of the District. Staff positions include a general manager, clerk/administrator, billing manager/bookkeeper, and meter reader. The General Manager reports directly to the board, and supervises district staff and outside contractors. The Solano Irrigation District is under contract for the physical operation and maintenance of the

water distribution system. SID performs all of the required functions to keep the water system in good running order in compliance with federal, state, and local standards.

Accountability and Government Structure

The District adopted a Brown Act Compliance Policy in 2018 that includes the posting of meeting agendas on the District's website and the holding of open and publicly accessible meetings. District records can be reviewed on the website and are also available upon request. The website contains an Annual Disclosure of Board Member Reimbursements per Government Code Section 53065.5 and the posting of meeting agendas. In addition, the District has created a catalog of enterprise systems listing the vendors and product (or system name and brief title) and posted the list on its website as required by Senate Bill 272 (2015). The District's Code of Conduct and Professional Ethics Policy was recently updated as of June 8, 2021.

Board members are not compensated for their time, but are reimbursed for actual and necessary expenses incurred in the performance of their official duties in accordance with the District's Reimbursement Policy. A Compensation Report is posted on the District's website and filed with the State Controller's Office.

The District's financial records are reviewed annually by an outside independent auditor with the financial statements posted on its website. RNVWD files an annual financial transaction report with the State Controller's Office as required by State law. The current filing is for fiscal year 2020. A link is provided on the district's website so that the public can download a copy of the report from the SCO.

The RNVWD publishes a semi-annual newsletter to communicate items of interest to customers and posts informational items on its website at *www.rnvwd.com*.

RNVWD has received several awards including the District Transparency Certificate of Excellence (April 2019 - June 2021) from the Special District Leadership Foundation in recognition of its outstanding efforts to promote transparency and good governance.

Determinations:

6.6.1 - RNVWD is a small community water system governed by an independent five-member Board of Directors with a part-time staff that are independent contractors.

6.6.2 – The District's financial records are reviewed annually by an outside independent auditor with the financial statements posted on its website. RNVWD files an annual financial transaction report with the State Controller's Office as required by State law.

6.6.3 - The District maintains a website as required by SB 929 and posts agendas, minutes, Board policies, and other relevant information.

6.7: OTHER MATTERS RELATED TO EFFECTIVE OR EFFICIENT SERVICE DELIVERY, AS REQUIRED BY COMMISSION POLICY

The CKH act requires LAFCO to adopt an SOI for each city and special district. The sphere represents the logical extent of the agency's boundary over the next 5 to 10 years. In 2013 LAFCO adopted an SOI for RNVWD that was coterminous with the existing District

boundary. In 2016 LAFCO updated RNVWD's sphere of influence to include parcels that are currently receiving water for fire hydrants only. These parcels are outside the district's current boundary and involve the extraterritorial extension of services. Most of the parcels do not have a water right for a service connection, which is required for annexation into the District.

LAFCO's policies that affect service delivery include a sphere policy which is applied to areas that the district may serve in the near term. Other relevant policies include Standard No. 10: Provision and Cost of Community Services which is intended to ensure that adequate services are available to areas proposed for a change of organization. This standard requires a "will serve" letter from the affected agency that the services required can be provided. Solano LAFCO may "initiate and make studies of existing government agencies including, but not limited to, inventorying those agencies and determining their maximum service area and service capacities."

Determinations:

6.7.1 - LAFCO policies that apply to the District include the requirement for "will serve" letters for annexations.

6.7.2 – Given the limited number of unallocated service connections and capacity limitations, Solano LAFCO should consider a coterminous SOI and district boundary.

6.7.3 Solano LAFCO and the County Planning staff, in conjunction with RNVWD and other water purveyors in the area, should jointly evaluate the long term water needs and aquifer capacity of the English Hills area.

SECTION 7: SPHERE OF INFLUENCE ANALYSIS

In conjunction with the requirement to conduct an MSR, the CKH Act requires LAFCO to review and update an agency's Sphere of Influence, as necessary. An SOI is the area in which LAFCO expects development might occur and need services within a 5-10 year timeframe. It is considered a planning tool designed to provide guidance in promoting the efficient and effective provision of services and avoids duplication of jurisdictional boundaries with other agencies. When evaluating an SOI, LAFCO must consider five factors and prepare written determinations regarding the agency's ability to provide adequate services to existing and future residents. Determinations are made with respect to each of the following five factors:

7.1: PRESENT AND PLANNED LAND USES

The RNVWD is located in an unincorporated area of Solano County northwest of the city of Vacaville that includes the English Hills, Steiger Hills, and Gibson Canyon neighborhoods (collectively English Hills community). Land uses in the area are governed by the County's General Plan and Zoning and include a mix of agriculture uses on larger lots of 20+ acres and rural residential on smaller lots ranging in size from 2.5 to 5-plus acres. Properties zoned for a minimum parcel size of 2.5 acres are required to be on a public water supply system, while parcels with larger minimum lot sizes can be on private wells. The County General Plan allows rural residential development in a manner that preserves the rural character and scenic qualities of the area and protects sensitive resources including agricultural lands, creeks, native trees, open spaces, and views (LU.P-14). Future rural residential development is encouraged to locate where rural residential development has already been established (LU.P-15). The intent of the General Plan is to concentrate rural residential development in several locations throughout Solano County including the English Hills area northwest of Vacaville.

The District's current boundary encompasses 5,162.7 acres (480 parcels). An additional 1,180 acres (217 parcels) are located in the District's SOI. Parcels outside the District boundary only receive water service for fire protection fill stations. Parcels within the district boundaries and SOI are zoned for rural residential and agriculture use (see summary Table 7.1 below). Fifteen parcels zoned for agriculture use within the District's boundaries and three parcels in the SOI are under Williamson Act Contracts.

Future Growth Potential

The maximum allowable density for property within the District is based on the minimum lot size. Lots larger than the minimum parcel size allowed by the zoning have the potential for being subdivided. There are sixty-seven parcels currently within the district boundaries and zoned for a minimum lot size of 2.5-acres that have the potential for being subdivided into two or more lots. If developed to the maximum allowable density, an additional 174 parcels could be created that would require a connection to a public water supply system (see Table 7.2 below). Any plan for subdividing and development would require approval from the County. Conversations with the Solano County Planning Department [36] indicate that there are

[36] Conversation with Nedzlene N. Ferrario, Senior Planner and Solano County Planning Department staff, on July 15, 2021

no plans for lot splits, development, or zoning changes currently proposed for any of the parcels within the District.

Approximately 74% of the parcels within the current sphere of influence can potentially be subdivided into the minimal parcel size of 2.5-acres allowed by the zoning, which requires being on a public water supply system. Future lot splits located within the sphere of influence have the potential to add substantial growth to the District over the next 10 years if there is sufficient water supply capacity.

Table 7-1: Number of Parcels by Zoning District

Zoning District	Minimum Parcel Size	Number of Parcels	Total Acres	Average Parcel Size
RR-2.5	2.5 acres	132	810.18	6.14 acres
RR-5	5 acres	224	1,201.20	5.36 acres
RR-10	10 aces	0	0	0
A-20	20 acres	121	3,060.95	25.30 acres
A-40	40 acres	1	10,06	10. 06acres
PPO	2.5 acres	2	80.31	40.16 acres
Total		**480**	**5,162.70**	**10.75 acres**

Source: Solano LAFCO updated District Boundary Map, October 21, 2021

Table 7-2: Number of Parcels by Size & Zoning District

Parcel Size	RR 2.5	RR 5	A 20	A 40	PPO 2.5	Total
<5.0 acres	79	74	23	0	0	171
5.0 - 9.9 acres	27	27	7	0	0	61
10.0 - 19.9 acres	7	12	22	1	0	42
20.0 – 39.9 acres	7	3	49	0	0	59
40.0 – 79.9 acres	0	0	16	0	2	16
80.0 - 99.9 acres	2	0	2	0	0	4
100.0 + acres	0	0	1	0	0	1
Total Parcels	122	116	120	1	2	361
Potential Lot Splits	90	15	19	0	0	124
Total Parcels at Maximum Density	212	131	139	1	2	485

Source: Solano LAFCO updated District Boundary Map, October 21, 2021

Accessory Dwelling Units

The original system was designed for 533 households. According to the Solano County Department of Resource Management many parcels in the English Hills area have been allowed to build up to 1500 sf accessory dwelling units, which may be close to double a parcel's domestic water use. This may not have been envisioned when the water system was originally designed. Allowances for accessory dwelling units and second units must be considered in future demand determinations. An updated engineering report is needed to confirm that there is sufficient capacity in the system.

Determinations:

7.1.1 - Solano County's General Plan and Zoning allow for rural residential land uses in the English Hills area. Parcels larger than the minimum parcel size have the potential for being subdivided.

7.1.2 - Future lot splits done in accordance with existing zoning have the potential to add 90 additional lots inside the district's existing boundary.

7.1.3 – Adjustment of the District's Sphere of Influence would not require a change in the County's current General Plan land use designations or Zoning.

7.1.4 There are no planned or proposed developments or lot splits currently pending with the County.

7.2: PRESENT AND PROBABLE NEED FOR PUBLIC FACILITIES AND SERVICES

RNVWD has adequate capacity to meet customer needs at full-build-out of its water system. The District currently delivers potable water for domestic purposes to 398 customers as of December 31, 2020. At that time there were 113 supplemental connections owned by property owners anticipating subdividing their property at some future date and 22 undeveloped water rights available for sale. Once the remaining 135 undeveloped and supplemental service connections have been installed the District will have reached the design capacity of its current system. Any additional service connections beyond the system's design capacity of 533 service connections will require a new engineering report to support expansion of the existing system.

Future Water Supply Need: Formed in 1996 to address the need for a public water supply system in the English Hills area the district has since received numerous annexation requests. The primary reason for annexation is the need for a reliable source of water when shallow private wells are proven to be inadequate. County land use regulations also require connection to a public water system for development of parcels with a minimum lot size of 2.5 acres.

In 2016 Solano LAFCO approved the District's current SOI which included 233 parcels that were located outside the District's boundaries. Many of these parcels were receiving a benefit for fire suppression due to the location of nearby fire hydrants and included in Zone 2 of the benefit assessment district. Under California law (GC §56133) extraterritorial service extensions are allowed within an SOI in anticipation of future annexation or in response to an existing or impending threat to public health and safety.

Over the next five years it is expected that there will be more annexation requests of a similar nature. Unless one of the remaining undeveloped service connections is available future annexations to the district would require expansion of its current system to meet the needs of any additional customers beyond its current design capacity of 533 service connections. Solano LAFCO and Solano County Planning staffs should review the long-range water supply needs for the English Hills area and develop an infrastructure plan to provide water service to meet the future needs of the area based on build-out of the County General Plan. RNVWD would be a likely service provider if its existing system was expanded.

Determinations:

7.2.1 The existing groundwater wells and water distribution system have sufficient capacity to meet the needs of the district's current and planned customers.

7.2.2 The district is approaching its design capacity of 533 service connections with 135 water rights/ service connections remaining to be connected as of December 31, 2020.

7.2.3 Expansion of the district's water system beyond its design capacity would require a new engineering report.

7.2.4 Private residences with shallow groundwater wells in the English Hills area may require a long-range solution. County Planning and LAFCO should develop a long-range infrastructure plan for the English Hills area.

7.3: PRESENT CAPACITY OF PUBLIC FACILITIES AND ADEQUACY OF PUBLIC SERVICES

Adequacy of Water System

The District's water system was designed to supply potable water for domestic use to 533 parcels. The District currently serves 398 parcels with active service connections. There are an additional 135 water rights/service connections remaining to be connected. In addition, the District also provides water for fire protection purposes to 711 parcels within its boundaries and SOI.

The primary constraints on RNVWD's ability to provide water service are 1) the physical capacity of the existing system and 2) the aquifer recharge rate, especially during drought years.

1) Physical Capacity of Existing Water System

The District's Water System consists of three components: 1) Supply & Treatment facilities, 2) water storage tanks, and 3) distribution and transmission pipelines. Water is supplied from two groundwater wells with pumps that have a pumping capacity of approximately 350 cubic feet per minute. Normal pump capacity which is the capacity that the pump will operate at most of the time when in operation, may vary from rated capacity. Normal pump capacity is usually lower than the rated capacity.

Groundwater is pumped from the wells to two 300,000-gallon storage tanks, disinfected, and then gravity fed with assistance of booster pumps, into the distribution mains that deliver potable water to each service connection. The water system is metered at each service connection to determine water consumption.

Currently, only one well is in use. The active well (Well #1) has a production capacity of approximately 0.504 MGD (see Table 7.2 below). Well #2 can supply an equivalent amount, but has only been permitted for emergency standby use due to elevated arsenic levels and can only be operated on a limited basis for a maximum of five consecutive days no more than 3 times per year in accordance with CCR §64414(c). The District is in the process of installing an arsenic removal facility to bring Well #2 online in compliance with state and federal guidelines. Once well #2 is brought online, total production capacity from both wells is 1.008 gallons per minute (or 1.452 MGD), which is adequate to meet the needs of its current customers and planned growth.

RNVWD is required to have sufficient source capacity and storage to meet the Maximum Daily Demand per Title 22, Section 64554 of the California Code of Regulations (CCR §64554).

The District is approaching the maximum number of service connections for its current system with 75% of the available service connections installed and active. In August 2020, the District served 398 households with an estimated peak demand of approximately 0.382 MGD. At the same consumption rate the remaining 135 undeveloped connections would add 0.129 MG to the maximum day demand. Once the system is fully built-out with all 533 service connections installed the estimated MDD would total 0.511 MG (not including fire flow rate), which is 101% of the District's production capacity for Well #1. Storage capacity of 0.600 MG when combined with the available production capacity from Well #1 is greater than the MDD, allowing the District to comply with the Waterworks Standards based on the use of Well #1 as the primary source and Well #2 as an emergency backup supply (see Capacity Calculations in Appendix). Once Well #2 is brought online, RNVWD will have adequate production capacity in its existing system to meet the projected needs of its current customers and planned growth with a total of 533 service connections.

RNVWD does not have any present plans for expansion of the existing system beyond its current design capacity. Long term planning studies and a new engineer's report should be required if the district decides to expand its current system or sphere of influence.

Table 7-3: Groundwater Production

Active Service Connections	Annual Total (million gallons)	Maximum Month (million gallons)	Monthly Average (million gallons)	Maximum Day (million gallons)
2020 (398)	60,367,792	13,266,000	5,030,649	1.648
2019 (398)	49,990,000	7,149,000	4,165,833	0.948
2018 (398)	54,886,000	6,944,000	4,573,833	0.419
2017 (398)	50,165,000	6,524,000	4,180,417	0.210 **
2016 (382)	45,343,000	6,437,000	3,778,583	0.254
2015 (382)	43,951,320	5,178,000	3,662,610	0.679
Well #1 (350 gpm)				0.504
Well #2 (350 gpm)				0.504

Source: Annual DDW Reports (2016-2020) and 2017 Sanitary Survey

** Recorded figures are in gallons or cubic feet and converted to gallons using 1 cu. ft. = 7.48 gallons*

*** Estimated based on maximum month*

2) Aquifer Capacity

Groundwater aquifers underlying the English Hills area are divided into two separate zones. Shallow aquifers that extend down 200-600 feet below the ground surface are used by most private wells in the area. The deep aquifer located in the basal zone of the Tehama Formation is approximately 1,000 to 1,500 feet below the ground surface. Because of its depth, few wells penetrate this zone. RNVWD's wells are located in the basal zone of the Tehama Formation.

Several hydro-geologic studies have attempted to quantify the capacity and sustainable yield for the basal Tehama Formation aquifer. Findings from these studies show a range of

recharge rates that would be sustainable. According to a report by Borcalli for the English Hills Specific Plan EIR (1991)[37], the deep aquifer contains an estimated 316,160 acre-feet of water. The report suggested that a reasonable sustainable groundwater extraction rate for the deep aquifer would be approximately 16,640 acre-feet per year based on a recharge rate for the English Hills area of 2 acre-feet per acre per year. A groundwater investigation study for the city of Vacaville (2016)[38] using various assumptions for normal, dry, and wet years estimated that a safe yield would be 8,600 acre feet. Currently, an estimated 7,400 acre-feet per year is being withdrawn from the basal zone of the Tehama Formation. The Vacaville study concluded that existing withdrawals in 2016 from various water agencies (including RNVWD), combined with possible unknown sources of groundwater extraction, could possibly result in overdrafts from the deep aquifer. The Vacaville Study recommended further refinement of the estimated water demand and ongoing monitoring of water extractions to ensure a sustainable level.

The Tehama Formation basal aquifer appears adequate to meet RNVWD's total projected demand of 533 service connections based on current knowledge of the aquifer's capacity and recharge rate. At build-out of its current system, the District would withdraw approximately 136 acre feet annually from the deep aquifer. The total projected annual water demand by the District, plus the city of Vacaville, does not appear to exceed the sustainable groundwater supply available. Ultimately, the District's growth is limited by the capacity and recharge rate of the Tehama Formation aquifer.

Compliance with State Standards

RNVWD currently provides an adequate water supply that reliably meets the State's water quantity and quality requirements. The District has a sufficient water source and system capacity to meet its MDD and can comply with the Waterworks Standards (CCR §64554) based on use of Well #1, tank storage capacity, and Well #2 for emergency backup.

> *"RNVWD continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions."*
>
> California Department of Water Resources
> Division of Drinking Water
> 2017 Sanitary Survey Report

Groundwater wells in California, especially shallow ones, have a higher probability of water shortages than surface water due to drought, water quality problems, or over-drafting. RNVWD should develop a contingency plan to address potential water constraints.

[37] Borcalli & Associates, Groundwater Investigation for the English Hills Specific Plan EIR, 1991

[38] Luhdorff & Scalmanini Consulting Engineers, *"Vacaville Groundwater Source Sufficiency Technical Memorandum,"* May 2016

Determinations:

7.3.1 The present system is adequate to meet the original design capacity for which the District was established.

7.3.2 Water supplies from the Tehama Formation basal zone appear to be adequate to serve the total projected demand based on 533 service connections.

7.3.3 Storage capacity is sufficient to meet the maximum day demand in accordance with California Waterworks Standard §64554.

7.3.4 The District is approaching 75% of its maximum capacity with 398 service connections installed and 97% of the available water rights allocated (including developed, undeveloped, and supplement).

7.3.5 Water quality is monitored on a regular basis in accordance with State and Federal requirements and meets current drinking water standards according to the most recent DDW Sanitary Survey.

7.3.6 Long term planning is needed if the district's current sphere of influence is to be expanded.

7.4: EXISTENCE OF SOCIAL OR ECONOMIC COMMUNITIES OF INTEREST

There are no known social or economic communities of interest within or contiguous to the District's boundaries or SOI. There are several unincorporated communities nearby including Allendale, Hartley, and Bucktown, none of which are considered disadvantaged. Although there are pockets of residential development in the vicinity that meet the financial threshold to be considered disadvantaged they are not located within or contiguous to the district.

Determinations:

7.4.1 - There are no social or economic communities of interest adjacent to, or within, RNVWD boundaries or SOI.

7.5: NEED FOR PUBLIC FACILITIES AND SERVICES FOR DUCS

The District currently serves 398 customers on 711 parcels and has committed most of the remaining 135 service connections to future customers. The District also provides water for 79 fire hydrant fill stations for the fire districts to use as fill stations for their water trucks. Once the District reaches the system's design capacity of 533 service connections it cannot expand without first completing a new engineering study. Since there are no disadvantaged unincorporated communities within or contiguous to RNVWD boundaries, there is no need for the District to expand its service territory for inclusion of a DUC.

Determinations:

7.5.1 The District is close to allocating its remaining water rights/service connections to parcels currently in the District boundary and SOI. There are no disadvantaged unincorporated communities within or contiguous to RNVWD boundaries. Therefore, there is no need for the District to expand its service territory for inclusion of a DUC.

8: KEY FINDINGS, DETERMINATIONS & RECOMMENDATIONS

8.0: Summary of Key Findings

Key findings include:

1. Rural North Vacaville Water District (District) is a small rural community public water agency currently serving an estimated population of 1,118 residents. The District is expected to have minimal population growth over the next five years with a projected population of 1,498 at build-out of its current design capacity.

2. RNVWD's water system is adequate to meet the needs of its current customers (398 connections) and the remaining 135 undeveloped service connections to meet its initial design capacity of 533 service connections with both wells operational.

3. The potential for expansion of the District exists due to future splits and annexations. Expansion of the District's water system beyond its current capacity of 533 service connections would require a new engineer's report and county approval.

4. Future lot splits consistent with the County General Plan and existing zoning have the potential to add 298 additional lots inside the District's boundary. Lot splits resulting in parcels 2.5 acres to 5 acres are required by the County's General Plan to be on a public water system. Parcels 5-acres or larger with private wells are allowed by the existing zoning.

5. Future development in the English Hills area may require access to a public water system given the limitations of private shallow wells in the area.

6. Located at the northwestern edge of the Solano Groundwater Sub-basin, the District's water supply comes from two wells that draw water from the basal zone of the Tehama formation aquifer. Groundwater levels fluctuate between wet and dry years and should be monitored on a regular basis.

7. Well #2 is permitted for emergency use only due to elevated levels of arsenic. The District is currently in the process of addressing the problem by installing an arsenic removal treatment plant.

8. District and Solano County Planning staffs should consider developing a long-range infrastructure plan to meet the water supply needs for the English Hills area. The infrastructure plan should include a water demand analysis and a financial analysis.

9. The most recent Sanitary Survey Report (2017) found that RNVWD meets all Federal and State drinking water health standards and that "*RNVWD continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions.*

10 RNVWD operates on an annual budget of approximately $1,000,000 per year and has maintained a positive fund balance for the past five years. The District is currently debt free having paid off the two loans used to finance the initial construction of its two groundwater wells and water distribution system. A new loan for $1.2 million has been approved for installation of an arsenic removal facility for Well #2.

11. The District complies with state laws governing special districts and has received an award from the Special Districts Association for accountability and transparency.

8.1: MSR Determinations Summary

Based on our review and analysis of the Rural North Vacaville Water District, the following determinations are made as required by the CKH Act.

Table 8-1: Municipal Service Review Findings and Determinations

	Factors Considered in the MSR	Findings and Determinations
6.1	Growth and population of the district	6.1.1 - RNVWD currently serves an estimated population of approximately 1,103 residents based on the total number of current active water service connections. 6.1.2 – Planned growth includes 139 undeveloped service connections that would result in an increase of approximately 389 additional customers. When fully built-out, the District would accommodate a population of approximately 1,492 residents. 6.1.3 - Population growth in the English Hills area may require access to a public water system. Expansion of RNVWD beyond its current capacity would require a new engineer's report and LAFCO approval. 6.1.4 County planners indicate that there are no current development proposals being considered within the District's boundaries.
6.2	Location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence	6.2.1 - There are no disadvantaged unincorporated communities that meet the definition of a DUC within or contiguous to the District's boundaries or SOI.
6.3	Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies	6.3.1: According to the State Division of Drinking Water, the District is in compliance with its water supply permit. 6.3.2: The District is currently operating at 74% of its maximum capacity of 533 service connections. 6.3.3: Planned capacity includes 139 undeveloped service connections, of which 134 have been allocated with five remaining available for sale. 6.3.4: The District is currently operating with one well. Well #2 has been approved only for emergency use due to elevated levels of arsenic. The District is in the process of installing an arsenic removal treatment plant for Well #2. 6.3.5: The capacity and recharge rate of the Tehama Formation basal zone aquifer in the English Hills area has fluctuated in wet and dry years. Ongoing evaluation of sustainable pumpage should be undertaken to monitor groundwater levels and avoid over-drafting the aquifer.

		6.3.6: The potential for future expansion of the District exists due to lot splits and annexations. Any expansion beyond the District's current capacity would require LAFCO and county development approval based on a new engineer's report. 6.3.7: District policies allow for expansion of the water distribution system to serve additional connections when supported by adequate plans and cost estimates. Parcels being served by the expansion are responsible for all costs associated with the expansion. 6.3.8: The District should develop a contingency plan to mitigate any water supply problems that might result from current and future drought conditions
6.4	Financial ability of district to provide services	6.4.1 RNVWD operates as an Enterprise Fund, where the primary source of revenue is from user charges and fees. Capital improvements are financed from special assessments, fees, and cash flow. The District does not receive any share of the ad valorem property taxes from Solano County. 6.4.2 A special assessment of property owners was used to finance the initial construction of the District's wells and water distribution system. Both loans have since been repaid and the District is currently debt free. 6.4.3 A potential need exists for the future expansion of the District beyond its current capacity, which would require LAFCO approval based on a new engineer's report.
6.5	Status of, and opportunities for, shared facilities	6.5.1 The RNVWD is currently a member of the Joint Powers Insurance Authority with other special districts. The JPIA provides discounted insurance coverage to its members. 6.5.2 RNVWD has participated in a number of studies and projects with other local agencies including the Coordinated Groundwater Analysis Project to study and monitor the Putah Fan/Tehama Formation Groundwater Basin. 6.5.3 RNVWD is currently not a member of the Solano Collaborative, but could and should join and participate in the development and management of the groundwater sustainability plan for the Solano Sub-basin given that the easterly part of the District, including its two groundwater wells, are located in the Solano Sub-basin and draw water from the basal zone of the Tehama Formation aquifer.

6.6	Accountability for community service needs, including governmental structure and operational efficiencies	6.6.1 - RNVWD is a small community water system governed by an independent five-member Board of Directors with a part-time staff that are independent contractors. 6.6.2 – The District's financial records are reviewed annually by an outside independent auditor with the financial statements posted on its website. RNVWD files an annual financial transaction report with the State Controller's Office as required by State law. 6.6.3 - The District maintains a website as required by SB 929 and posts agendas, minutes, Board policies, and other relevant information.
6.7	Other matters related to effective or efficient service delivery, as required by commission policy	6.7.1 - Local LAFCO policies that apply to the District include the requirement for "will serve" letters for annexations. 6.7.2 – Given the limited number of unallocated water rights/service connections and capacity limitations, Solano LAFCO should consider a coterminous SOI and District boundary. 6.7.3 District and County Planning staff, in conjunction with other water purveyors in the area, should jointly evaluate the long term water needs and aquifer capacity of the English Hills area.

8.2: SOI Determinations Summary

Pursuant to Government Code §56425, LAFCO must adopt and maintain a Sphere of Influence for each local governmental agency. Determination of an SOI is based on the present and probable need for public services and an agency's capacity to provide the services in a cost effective and efficient manner. Based on analysis of the five factors required by the CKH Act, the following determinations are made related to RNVWD's sphere of influence.

Table 8-2: Sphere of Influence Findings and Determinations

	Factors	Findings and Determinations
7.1	Present and planned land uses in the area, including agricultural and open space lands	7.1.1 - Solano County's General Plan and Zoning allow for rural residential land uses in the English Hills area. Parcels larger than the minimum parcel size have the potential for being subdivided. 7.1.2 – Adjustment of the District's Sphere of Influence would not require a change to the County's current General Plan land use designations or Zoning. 7.1.3 - Future lot splits done in accordance with existing zoning have the potential to add 90 additional lots inside the District's existing boundary. 7.1.4 There are no planned or proposed developments or lot splits currently pending with the County.
7.2	Present and probable need for public facilities and services in the area	7.2.1 The existing groundwater wells and water distribution system have sufficient capacity to meet the domestic and fire protection water needs of District residents. 7.2.2 The District is approaching its design capacity of 533 service connections with 139 water rights remaining to be connected. 7.2.3 Expansion of the District's water system beyond its present design capacity would require a new engineering report. 7.2.4 Private residences in the English Hills area on shallow groundwater wells may require a long-range solution for a public water supply.
7.3	Present capacity of public facilities and adequacy of public services that the agency provides, or is authorized to provide	7.3.1 The present water system is adequate to meet the original intended purpose for which the District was established.

		7.3.2 Water supplies from the Tehama Formation basal zone appear to be adequate to serve the total projected demand based on 533 service connections. 7.3.3 Storage capacity is sufficient to meet the maximum day demand in accordance with California Waterworks Standard §64554. 7.3.4 Water quality is monitored on a regular basis in accordance with State and Federal requirements and meets current drinking water standards. 7.3.5 The District is approaching 75% of the maximum capacity of its current water system with 394 service connections installed and 97% of the available water rights/service connections allocated (including developed, undeveloped, and supplement). 7.3.6 Long term planning is needed if the District's current sphere of influence is expanded.
7.4	Existence of any social or economic communities of interest in the area	7.4.1 There are no social or economic communities of interest within or adjacent to RNVWD boundaries or SOI.
7.5	Present and probable need for public facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence	7.5.1 There are no disadvantaged unincorporated communities within or contiguous to RNVWD boundaries. Therefore, there is no need for the District to expand its service territory for inclusion of a DUC.

8.3: Recommendations for Improved Governance and Service Delivery

The following recommendations are made to address water supply needs and promote efficiencies in service delivery and governance. Potential actions that Solano LAFCO should consider include:

1. Adoption of an updated District boundary map and SOI. Recommend that the District reconcile the updated boundary map with Register of Voters list of the District's eligible voters.
2. Work with District to identify appropriate boundaries for SOI based on the District's ability to serve over the next five years. Determination of the SOI should be based on the probable need for a public water system and the District's capacity to provide water service in a cost effective and efficient manner. Options for an SOI include 1) no change in current boundary, 2) SOI contiguous with the District boundary, 3) expanded SOI, or 4) modified SOI.

3. Recommend that the District develop a 5-10-year strategic/infrastructure plan that addresses the need for water service to parcels within the District without water rights/service connections prior to annexation of new territory or expansion of SOI. The infrastructure plan should include a water demand analysis and a financial analysis.
4. Require a new engineering report and aquifer monitoring program before expansion of the District's water system beyond its current design capacity of 533 service connections. The report should validate the current design capacity, with and without Well #2, potential population growth, and future infrastructure capacity needs to determine whether the supply is adequate to meet the increased demand.
5. Recommend the District conduct regular monitoring of groundwater levels and work with neighboring water provider agencies and local GSA to implement a plan for maintaining a safe, sustainable yield of groundwater from the Tehama Formation basal aquifer.
6. Encourage the District to work with the Solano Resource Management Agency to address long-term water planning infrastructure needs in the English Hills area. The infrastructure plan should include a water demand analysis and a financial analysis.
7. Adopt policy requiring "will serve" letters that demonstrate the District intends to provide service, has the ability to serve the parcel(s) requesting annexation, confirm property is located within the SOI, addition of new service connections will meet District Standards and Specifications, new service connections are in compliance with all requirements of appropriate regulatory agencies, and that the District has the capacity that meets State Water Works Standards including MDD requirements per CCR §64544.
8. Condition approval of District expansion with a requirement for RNVWD to return to LAFCO in four months to update the Commission on the progress of the arsenic removal facility installation. Well #2 should be brought online prior to approving future annexations.
9. Recommend that the District review and address its "First Come, First Serve" Water Rights Policy and its impact on parcels within the District without water rights and/or service connections.
10. Recommend that RNVWD review and adopt "Best Practices" promulgated by the California Special Districts Association to improve communication, governance, and understanding of LAFCO processes. Opportunities exist to improve District governance and performance based on discussions with Board members and review of meeting minutes.
11. It is recommended that RNVWD develop a contingency plan along with a conservation plan to mitigate any water supply problems that might result from future droughts and climate change.
12. RNVWD should develop an action plan to further study and monitor the Tehama Formation Aquifer in partnership with the City of Vacaville, Solano Collabortive to evaluate its storage capacity and sustainable yield.

REFERENCE LIST

Borcalli & Associates, *"Groundwater Investigation for the English Hills Specific Plan EIR"*, 1991

California Water Resources Control Board Bulletin, *"Regulations and Information Pertaining to Appropriation of Water in California"*,

American Community Survey Census Tract data

DWR Online Mapping Tool, https://gis.water.ca.gov/app/dacs/

Department of Water Resources, *"Groundwater Bulletin 118"*, 2003 update

CaLAFCO, *"Guide to the Cortese–Knox–Hertzberg Local Government Reorganization Act of 2000"*, December 2017

H.G. Thomasson, F.H. Olmsted, and E.F. LeRoux, "*Geology, water resources and usable ground-water storage capacity of part of Solano County, California"* Water Supply Paper 1464, 1960

Luhdorff & Scalmanini Consulting Engineers, *"Vacaville Groundwater Source Sufficiency Technical Memorandum,"* May 2016

NOAA National Integrated Drought Information System

Nature Communications, *"Divergent effects of climate change on future groundwater availability in key mid-latitude aquifers"*, July 2020,

Public Policy Institute of California, *"Groundwater in California"*,

RNVWD, *"District Rules & Regulations"*

Rural North Vacaville Water District *"Water Assessment District – Fiscal Year 2019/20 Annual Report"*, May 2020

RNVWD *"2016 Operations and Maintenance Plan"*

RNVWD, Operations and Maintenance Plan (February 8, 2018)

RNVWD, 2020 Annual Water Quality Report, https://rnvwd.com/docs/RVNWDWaterQualityReport_CCR.pdf

Annual Financial Report with Independent Auditor's Report for the Year Ended June 30, 2019

Sanitary Survey Report 2017

Solano LAFCO *"Standards and Procedures Guidelines"*, adopted March 1, 1999 as amended

Solano County Water Authority, *"Ground Water Conditions in Solano County 1999-2002"*

Solano County Water Agency, *"Groundwater Conditions Report 2013-2015,"* August 2015

State Controller's Office, *"Special District Uniform Accounting and Reporting Procedures"*, December 2018,

Vacaville Groundwater Study, P.14

APPENDICES

Appendix A

ACRONYMS AND ABBREVIATIONS

ACWA – Association of California Water Agencies
AF - Acre-foot (feet)
AFY - Acre feet per year
APN – Assessor Parcel Number
CCF - Hundred Cubic Feet
CDP - Census Designated Place
CDPH - California Department of Public Health
CDWR - California Department of Water Resources
CEQA - California Environmental Quality Act
CGC – California Government Code
CKH - Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CSD - Community Services District
CWC - California Water Code
DBP - Direct Benefit Parcels
DUC - Disadvantaged Unincorporated Community
FPZ - Fire Protection Zone
GPD - Gallons per day
IBP - Indirect Benefit Parcels
JPA - Joint Powers Authority
LAFCO - Local Agency Formation Commission
MDD - Maximum Day Demand
MG - Million gallons
MGD - Million gallons per day
MHI – Median Household Income
MSR - Municipal Service Review
PPH - Persons per household
PRV - Pressure Regulator Valve
RNVWD - Rural North Vacaville Water District
SB – California Senate Bill
SCO – California State Controller's Office
SCADA - Supervising Control and Data Acquisition
SCWA - Solano County Water Agency
SID - Solano Irrigation District
SOI – Sphere of Influence

Appendix B

STATE WATER BOARD DROUGHT CONTINGENCY PLANS

The State Water Board recommends conducting a system evaluation and preparing drought contingency plans containing the following components:

a. **Monitoring of depth-to-ground-water level** in wells under both pumping and non-pumping conditions. Depth-to-groundwater is a very good indicator of well capacity. Too often, a well's pumping capacity is used as the sole indicator of pumping conditions with no attention given to ground water depth. As a result, depletion of the ground water table over time may not be apparent.

b. **Read and record well pumping capacity** to monitor usage and degree of water loss between the water produced and the amount delivered to customers.

c. **Monitor and record the water levels in system storage tanks** during various high-demand periods of the day to identify increasing system demand or reduced source capacity conditions.

d. **Adopt water conservation measures** that will help mitigate water shortage problems.

e. **Install temporary or permanent interconnection to a neighboring utility** that has excess production capacity.

f. **Install treatment on standby sources** that have water quality issues.

g. **Join a Mutual Aid & Assistance Program**

Appendix C

DISADVANTAGED UNINCORPORATED COMMUNITIES

Senate Bill (SB) 244, which became effective in January 2012, requires Local Agency Formation Commissions to consider the presence of any Disadvantaged Unincorporated Communities (DUCs) when preparing a Municipal Service Review for agencies that provide water, wastewater or structural fire protection services. SB 244 created several definitions related to DUCs, in both LAFCO and planning law, including:

1. "Community" is an inhabited area within a city or county that is comprised of no less than 10 dwellings adjacent to or in close proximity to one another;
2. "Unincorporated fringe community" is any inhabited and unincorporated territory that is within a city's SOI;
3. "Unincorporated island community" is any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary or the Pacific Ocean;
4. "Unincorporated legacy community" as a geographically isolated community that is inhabited and has existed for at least 50 years; and
5. "Disadvantaged unincorporated community" is inhabited territory of 12 or more registered voters that constitutes all or a portion of a community with an annual MHI that is less than 80 percent of the statewide annual MHI.

The CKH Act requires LAFCO to make a determination regarding the location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence. This state legislation is intended to ensure that the needs of these unincorporated communities are met when considering service extensions and/or annexations, in particular, water, wastewater, drainage, and structural fire protection services. Additionally, Solano LAFCO's policy requires written determinations with respect to the location and characteristics of any DUCs within or contiguous to the Sphere of Influence.

The challenge in identifying DUCs is that census geography does not precisely match special district boundaries. The smallest census geography includes census blocks and block groups. Because the census data reflects values for census tracts larger than a special district, it is possible that there may be an unincorporated community within or contiguous to a district that meets the financial threshold requirement for a DUC.

The California Department of Water Resources has an on-line mapping tool that is based on data from the US Census American Community Survey showing census block groups identified as disadvantaged communities (less than 80% of the State's median household income) or severely disadvantaged communities (less than 60% of the State's median household income). DWR Online Mapping Tool found at: https://www.arcgis.com/home/webmap/viewer.html?layers=edfa09824bfa4780b7d698ecf11e04bc

RNVWD RATE SCHEDULE (9.19.21)

RNVWD SCHEDULE OF FEES (9-19-21)		"EXHIBIT E" OF THE RULES AND REGULATIONS	
Description	Amount		Notes
Basic Service for all properties in the District with single water right	$ 72.90	per month	Per August 2021 Board approval
Capital Recovery Charge, CRC	$ 45.00	per month	Per August 2021 Board approval
Tier 1 Usage rate: 0-25 ccf (0-18,700 gallons)	$ 2.08	per ccf	(1ccf=100 cubic feet=748 gallons)
Tier 2 Usage rate: over 25 -50 ccf	$ 2.08	per ccf	Per August 2021 Board approval
Tier 3 Usage rate: over 50 ccf	$ 2.08	per ccf	Per August 2021 Board approval
Supplemental additional water rights	$ 45.00	per month	Per August 2021 Board approval
Disclaimer - Amounts Below are Subject to Change			
CONTACT GENERAL MANAGER FOR CURRENT PRICING			
Purchase a Water Right [annexation additional]	$ 40,000.00		Fully paid no assessments [connection fee additional]
Finance a Water Right Purchase [annexation additional]	$ 40,000.00		Loan principal and interest amortized over 20 years[connection additional]
Escrow Fee for Note and Deed of Trust and Instructions	$ 250.00		Fee required when financing a water right purchase
Escrow Recording Fee	$ 75.00		Fee required when financing a water right purchase
RNVWD Water Right Purchase application, escrow and processing	$ 500.00		GM fixed fee to process the sale of Water Rights
Replacement or new Backflow Assembly	$ 750.00		Trtec Backflow Services T&M if done by SID
Backflow Permit	$ 112.25		Paid to Solano County
Repair a Backflow Assembly damage by vehicle, bent pipe	T&M		paid by customer
LAFCO Sphere of Influence application by Agency	$ 3,000.00		verify with LAFCO
LAFCO Sphere of Influence application with Annexation	$ 1,500.00		verify with LAFCO
District Sphere of Influence application Processing	$ 500.00		GM admin fixed Fee
Annexation LAFCO processing fee	$ 3,000.00	min. deposit	To LAFCO for 1 6 acres: more $ for larger parcels see LAFCO schedule
Annexation LAFCO Legal description and Map preparation	$ 950.00	estimate	by private party, registered land surveyor
Annexation Map Fee	Per LAFCO		by county for review
Annexation Recording Fee	Per LAFCO		by county for recording
Annexation to RNVWD application and processing	$ 1,500.00		GM admin fixed fee
Annexation Environmental CEQA report	$ 5,700.00		verify with LAFCO/County, estimated amount
Annexation Environmental CEQA report Notice of Exemption	$ 50.00		to Solano County
Detachment LAFCO Fees	Per LAFCO		
Minor or Major Subdivisions water service planning [District Work Order]	$ 500.00	deposit each	GM and SID approximate charges per each new service connection
Will Serve Letter / Application	$ 150.00		GM admin fixed fee, plus deposit for Subdivision review and coordination
Engineer's Estimate for improvements	by developer		Provided by Developer's Civil Engineer for District approval
Performance Bond	varies		110% of the Engineer's Estimate
Maintenance Bond	varies		50% of the Engineer's Estimate
Apportionment	$ 990.00		payable to NBS
Water Right Transfer Agreement NBS Processing	$ 150.00		payable to NBS
Water Right Transfer Agreement RNVWD Processing	$ 250.00		GM admin fixed fee
Water Right Transfer Engineering Capacity Review	$ 500.00	T&M	Estimate, if required by SID
New Water Service Connection, meter, backflow assembly, and prv if req'd	$ 10,000.00	deposit each	Estimate only, T&M, deposit amount, public road crossing
New Water Service Connection, meter, backflow assembly, and prv if req'd	$ 5,000.00	deposit each	Estimate only, T&M, deposit amount, not a public road crossing
New Water Service Connection District Coordination & Inspection	$ 500.00	each	GM admin fixed fee
Water Line Main Extensions RNVWD & SID Eng. Review and processing	$ 5,000.00	deposit	T&M, SID and District GM time, Engineering by developer
Water Line Main Extensions [Inspection & Testing Deposit]	varies	deposit	SID to Estimate, T&M, SID and District GM time and expenses
Water Line Main Extensions when performed by SID	Estimate	deposit	Deposit for estimated cost of work required prior to scheduling
Water Line Main Extensions water use for flushing and testing	$ 10.00	per ccf	plus $15 per day, per hydrant fees
Prepare Demand Letters for escrow closings	$ 100.00		GM admin fixed fee, foreclosures, short sale, normal sale
Delinquent/Late Payment Penalty	10.00%		
Penalty Charge on Past Due Amounts	1.00%		
Shut Off Service	$ 150.00		GM admin fixed fee
Remove Service	$ 250.00		
Restore Service Charge after Shut Off	$ 150.00		GM fixed fee, payment of past due amount(s) must be current
Return Check Charge	$ 25.00		
Return ACH Charge	$ 25.00		
File a Lien Notice	$ 50.00	each	
Remove a Lien	$ 50.00	each	
Tax Roll Posting for Collection of Delinqent accounts	$ 500.00	pro rated	NBS charge $500.00 to process the group
Pay by Credit Card on RNVWD.com Website	$ 5.00	each	convenience Fee
Fire Hydrant Meter Rental	$ 15.00	day	
Fire Hydrant Water Usage	$ 10.00	ccf	1 ccf equals 748 gallons
Fire Hydrant Meter Deposit or Replacement Charge	$ 1,500.00	deposit	for lost or stolen meters under customer care
General Manager Billing Rate	$ 150.00	per hour	
Administration Billing Rate	$ 45.00	per hour	
Backflow Services Billing Rate	$ 80.00	per hour	plus travel charges, if applicable
Billings & Bookkeeping Billing Rate	$ 65.00	per hour	

A water rate increase was approved by the RNVWD board on Aug 10, 2021 that increased the Capital Recovery Charge to $45.00 per month and the Supplemental Water Right to $45.00 per month to recover the cost of the Arsenic Removal Facility Capital Improvement Project.

Monthly Water Fees

Description	Amount		Notes
All Customers			
Basic Service for all properties in the District with single water right	$ 72.90	per month	Per August 2021 Board approval
Capital Recovery Charge, CRC	$ 45.00	per month	Per August 2021 Board approval
Tier 1 Usage rate: 0-25 ccf (0-18,700 gallons)	$ 2.08	per ccf	(1ccf=100 cubic feet=748 gallons)
Tier 2 Usage rate: over 25 -50 ccf	$ 2.08	per ccf	Per August 2021 Board approval
Tier 3 Usage rate: over 50 ccf	$ 2.08	per ccf	Per August 2021 Board approval
Supplemental Water Rights (additional to a base water right)			
Supplemental additional water rights	$ 45.00	per month	Per August 2021 Board approval

RNVWD SYSTEM CAPACITY & DEMAND

Water Production (millions of gallons)

Period	2016	2017	2018	2019	2020
Low Month (Winter)	1.75	1.77	2.05	2.03	2.26
Peak Month (Summer)	6.38	6.52	6.94	7.15	7.89
Average Month	4.11	4.18	4.57	4.17	5.03
Annual Total	49.34	50.17	54.89	49.99	60.37
Average Day	0.135	0.137	0.150	0.137	0.165
Maximum Day	0.254		0.419	0.948	1.642

Water Consumption (millions of gallons)

Period	2016	2017	2018	2019	2020
Low Month (Winter)	1.52	1.52	1.78	1.62	1.47
Peak Month (Summer)	6.15	6.26	6.77	5.80	7.89
Average Month	3.34	3.70	3.84	3.68	4.40
Annual Total	40.08	44.41	46.08	44.21	52.83
Maximum Day Demand (MDD)	0.298	0.303	0.328	0.280	0.382
Average Daily Use Per Person (gpp)	102	108	112	108	128
Active Service Connections	382	398	398	398	398
Estimated Population	1,081	1,126	1,126	1,126	1,126

System Capacity (millions of gallona)

	Daily		Annual	
Well #1 (350 gpm)	0.504	MGD	183.96	MG
Well #2 (350 gpm) [1]	0.504	MGD	183.96	MG
Total Well Production	1.008	MGD	367.92	MG
Storage Tank #1	0.300	MG		
Storage Tank #2	0.300	MG		
Total Storage Capacity	0.600	MG		
Total Well Capacity, plus storage capacity	1.608	MG		

Capacity Ratio

	Well #1	Well #2 (1)	Total	
2020 MDD (398 metered Service Connections)	0.382	-	0.382	MGD
Well Production Capacity	0.504	0.504	1.008	MGD
Percent of Well Production Capacity	75.8%	-	37.9%	
Current MDD (398 Service Connections)	0.382	-	0.382	MGD
Planned Demand (135 Service Connections)	0.046	-	0.046	MGD
Total MDD (533 Service Connections)	0.428	-	0.428	MGD
Percent of Production Capacity	84.8%		42.4%	

Footnotes:

[1] Well # 2 has been permitted for emergency use only due to elevated levels of arsenic. Until such time as the arsenic levels are reduced to comply with State and Federal standards, Well #2 can only be used as an emergency supply source for a maximum of five consecutive days and fifteeen total days per year in accordance with State regulations 22 CCR 644414(c).
2. Actual pump capacity may vary from rated capacity.

Sources: 2015 MSR; 2017 District Sanitary Survey; 2016-2020 DDW Annual Water Reports

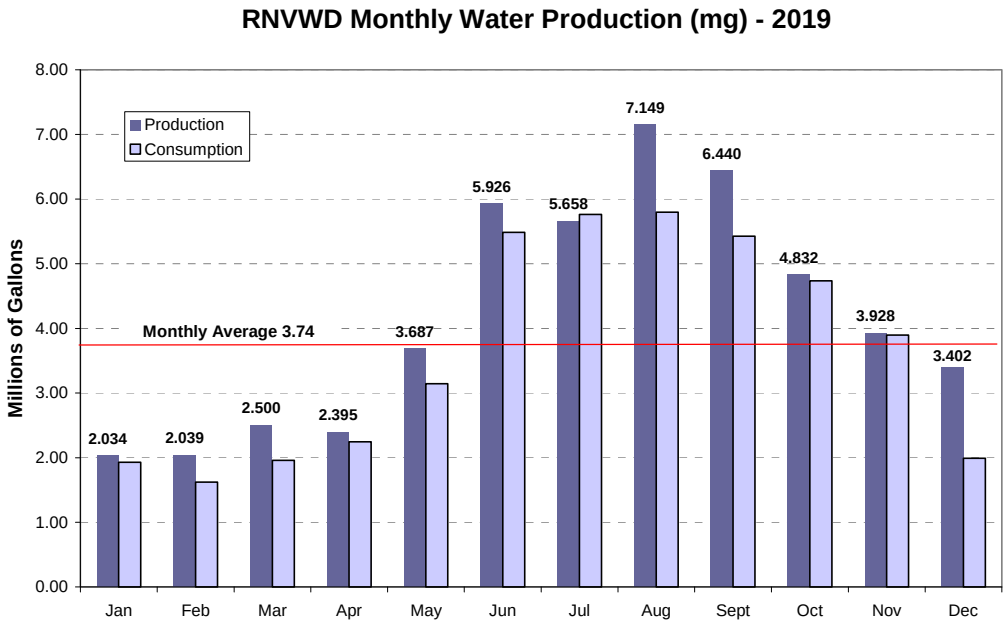
Appendix F

MAXIMUM DAY DEMAND

Peak Month Consumption		2020 August	2019 August	2018 July	2017 July	2016 August
Monthly Metered Deliveries (100 cu. ft.)		10,549	7,149	9,051	8,370	8,225
Gallons per 100 cu ft	×	748	748	748	748	748
Gallons (Peak month consumption)		7,890,652	5,347,452	6,770,148	6,260,760	6,152,300
Number of Days in Month	÷	31	31	31	31	31
Gallons per day		254,537	172,498	218,392	201,960	198,461
Peaking Factor	×	1.5	1.5	1.5	1.5	1.5
Maximum Day Demand (gallons)		381,806	258,748	327,588	302,940	297,692
Percentage of daily capacity		75.8%	51.3%	65.0%	60.1%	59.1%
Gallons per day		254,537	172,498	218,392	201,960	198,461
Number of service connections	÷	398	398	398	398	382
Gallons per service connection		640	433	549	507	520
Persons per household	÷	2.83	2.83	2.83	2.83	2.83
Gallons per person		226	153	194	179	184
Peaking Factor	×	1.5	1.5	1.5	1.5	1.5
Maximum Day Demand per person		339	230	291	269	275
Estimated MDD at Build-out						
Number of service connections		533	533	533	533	533
Gallons per service connection	×	640	433	549	507	520
Gallons		340,875	231,009	292,470	270,464	276,911
Peaking Factor	×	1.50	1.50	1.50	1.50	1.50
Maximum Day Demand (MDD)		511,313	346,514	438,704	405,696	415,366
Percentage of daily capacity		101%	69%	87%	80%	82%
Pump Capacity (gpm)		350	350	350	350	350
Minutes per day	×	1,440	1,440	1,440	1,440	1,440
Gallons per day		504,000	504,000	504,000	504,000	504,000
Average Daily Demand Per Person (gpp/day)						
2020 Annual Consumption (100 cu. ft.)		70,623				
Gallons per 100 cu ft	×	748				
Total Gallons (annual)		52,826,004				
Divided by Days per year	÷	365				
Gallons per day		144,729				
Divided by Service Connections	÷	398				
Gallons per connection/day		364				
Divided by Persons per household	÷	2.83				
Gallons per person per day (gpp/day)		128				
Peak Month Average Daily Demand Per Person (gpp/day)						
2020 Monthly Consumption (100 cu. ft.)		10,549				
Gallons per 100 cu ft	×	748				
Total Gallons (peak month)		7,890,652				
Divided by Days per month	÷	31				
Gallons per day		193,208				
Divided by Service Connections	÷	398				
Gallons per connection/day		486				
Divided by Persons per household	÷	2.83				
Gallons per person per day (gpp/day)		174				

Appendix G

RNVWD MONTHLY WATER PRODUCTION/CONSUMPTION

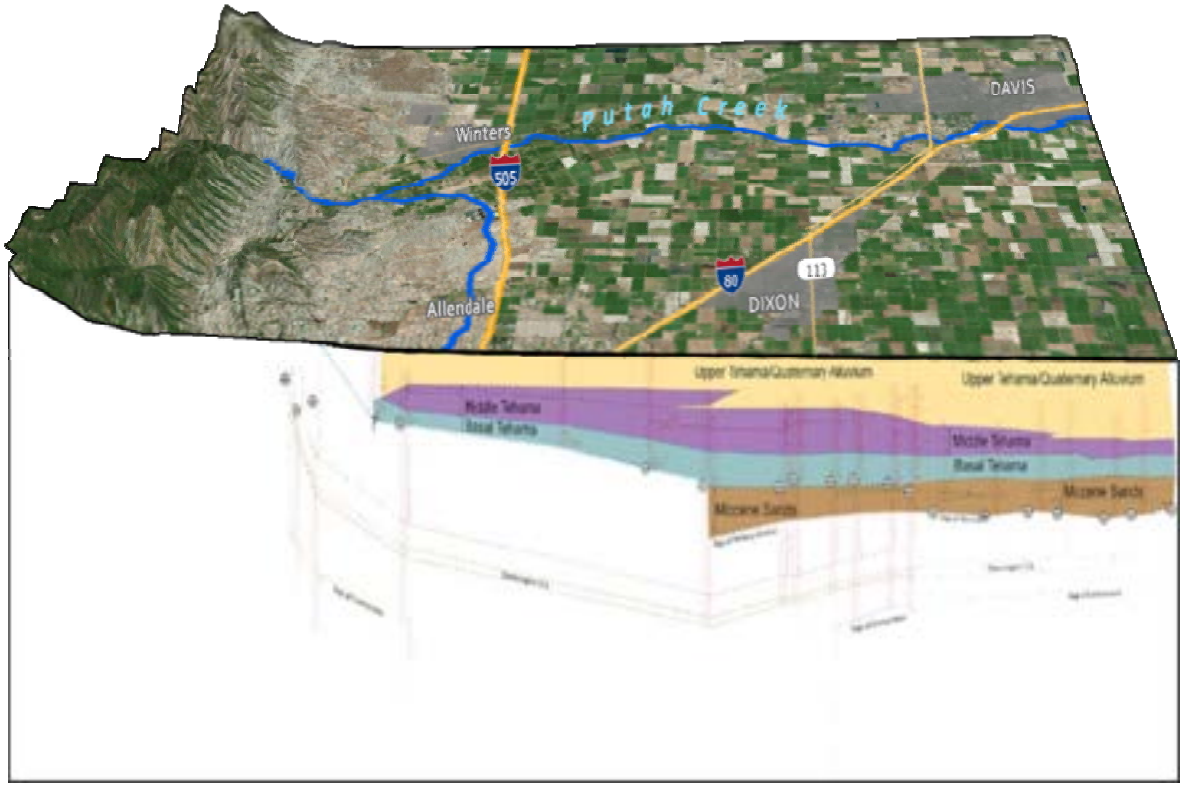


Source: 2019 Annual Water Report

Appendix H

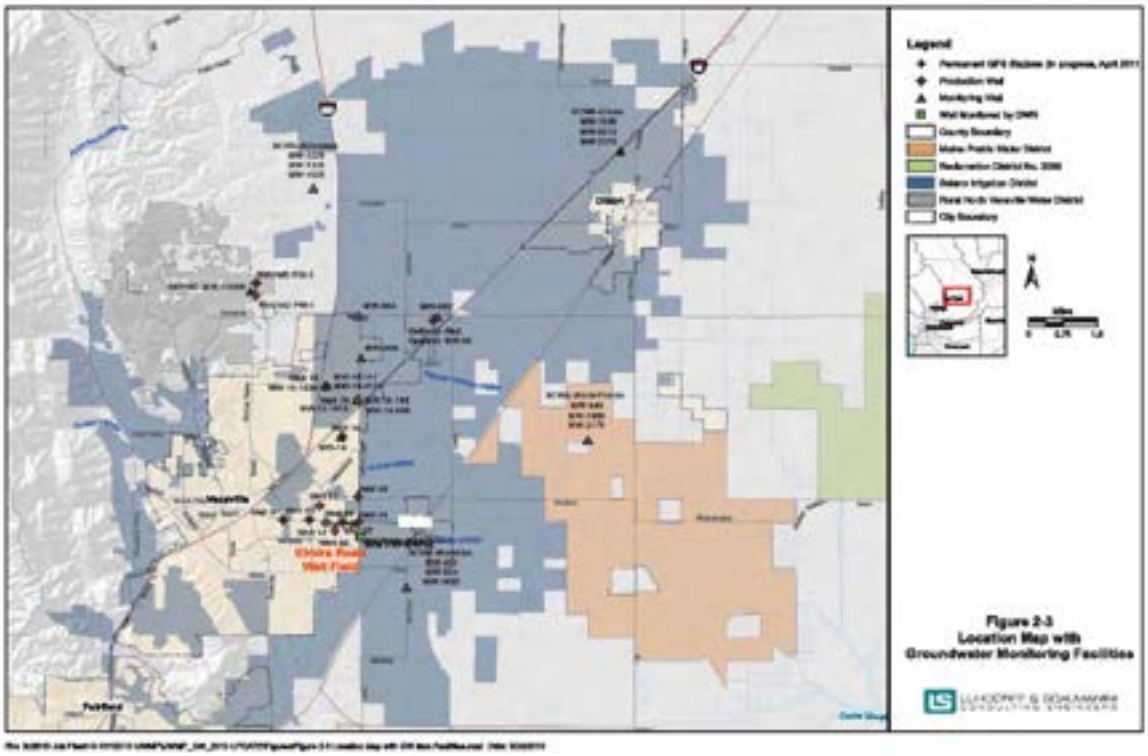
GROUNDWATER SOURCES IN NORTHERN SOLANO COUNTY

Figure H-1: Tehama Formation Cross Section



Source: Luhdorff & Scalmanini, Solano Sub-basin Groundwater Sustainability Plan

Location of Groundwater Monitoring Facilities



Source: Luhdorff & Scalmanini Consulting Engineers, *"Vacaville Groundwater Source Sufficiency Technical Memorandum,"* May 2016

Data and boundaries shown on this map are based on a 2016 study and may not be current.

Appendix I

2020 WATER REPORT

State Waterboard 2020 EAR

You were approved for application 426506 on 05/10/2021 10:48:18

Return to Home (/PwsUser)

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

DRINKING WATER SYSTEM'S
2020 ANNUAL REPORT TO THE DIVISION OF DRINKING WATER
FOR THE YEAR ENDING DECEMBER 31, 2020
[Section 116530 Health & Safety Code]

WATER SYSTEM INFORMATION (../Content/2020EARHelp.htm#1.1)

Water System No.: CA4810013
Water System Name: RURAL NORTH VACAVILLE WATER DISTRICT
Water System Classification: Community
Related Regulating Agency: (../Content/2020EARHelp.htm#1.2) DISTRICT 04 - SAN FRANCISCO

Water System Ownership (../Content/2020EARHelp.htm#1.4)

- (•) --Pick one--
- ( ) Local Government
- ( ) State or Federal Government
- ( ) Privately owned, PUC-regulated, for profit water company
- ( ) Privately owned, non-PUC-regulated (Community Water System)
- ( ) Privately owned Mutual Water Company or Association
- ( ) Privately owned business (non-community)

If the address recorded is a PO Box or similar, please update to a physical address that would most accurately describe the location of the water system.

Physical location
Address 1: 4135 Cantelow Road
Address 2:
City: VACAVILLE
Zip Code: 95688-8834
General Office Phone: (../Content/2020EARHelp.htm#1.3) 707-447-8420
(with area code)
Web site address: www.rnvwd.com

Answer fields shaded yellow are **Mandatory Questions** and must be answered to complete this report. Based on previous answers, some answer fields are shaded salmon indicating **Conditionally Mandatory Questions**. Any missed responses to Mandatory and Conditionally Mandatory questions will be shown in the Finalize Section.

CERTIFICATION FOR REDUCTION OF ANNUAL FEES FOR PUBLIC WATER SYSTEMS SERVING A DISADVANTAGED COMMUNITY (DAC) (../Content/2020EARHelp.htm#1.5)

☐ Check this box if you are **requesting** a Disadvantaged Community (DAC) fee annual reduction. You must complete a DAC Certification Form (https://www.waterboards.ca.gov/resources/fees/drinking_water/docs/dac_certification_form.pdf) and upload the form in the 2020 Annual Report. Once you have completed the form found in the link, save it to your desktop, and use the upload feature below beginning with "Choose Files."

Before receiving a fee reduction, State Water Resources Control Board must conduct review.

Choose Files No file chosen

Upload

If you have questions about completing DAC Certification Form or about the DAC fee reduction, please contact the Program Liaison Unit at DDW-PLU@waterboards.ca.gov (mailto:DDW-PLU@waterboards.ca.gov).

0%

REPORT STARTED BY (../Content/2020EARHelp.htm#1.6)
Name: Sue Murphy
Title: Water Quality Specialist
Work phone: 707-455-4021
Cell phone: 707-249-6007
Email address: murphys@sidwater.org

Please be aware that all comment boxes throughout this electronic annual report will be made publicly available WITH THE EXCEPTION of the comment box below. Only Waterboard staff and other people with your water system's login credentials will have access to this comment box. You are encouraged to provide any comments that you believe may help improve this annual report process.

PRIVATE COMMENTS: (../Content/2020EARHelp.htm#1.7) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

2. Public Water System Contacts (../Content/2020EARHelp.htm#2.a)

Contact your Regulating Agency to **update contact information for** *current contacts*.

IMPORTANT: Each water system must have one and only one Administrative Contact AND one and only one Financial Contact. The same person may be both the Administrative and Financial Contacts.

Please provide an email address for the Administrative Contact as most email communication, particularly email blasts, from the Division of Drinking Water will be sent to the email address of the Administrative Contact.
PHONE TYPE: Home – if you use your home or personal phone number as your business number, use the HOME phone type instead and leave the BUSINESS phone type blank. Only the BUSINESS phone type will appear in Drinking Water Watch (https://sdwis.waterboards.ca.gov/PDWW/), which can be viewed by the public, if the General Office phone number is not provided (see Water System Information section under the Intro tab).

CURRENT CONTACTS	**CONTACT RECORD**	**PHONE TYPE (../Content/2020EARHelp.htm#2.1)**	**PHONE NO.**	**EMAIL ADDRESS(ES)**	**CONTACT TYPE (../Content/2020EARHelp.htm#2.2) (Modify with checkbox)**	
Contact 1 First Name, Middle Initial	SUE	Business	(707) 455-4021		☐ DELETE CONTACT 1	☐ NO CHANGES CONTACT 1
Last Name	MURPHY	Home	YY	smurphy@sidwater.org	☐ Administrative	☐ Operator
Title	WQ SPECIALIST	Facsimile	YY		☐ Financial	☐ Emergency
Address 1	810 VACA VALLEY PKWY STE 201	Mobile	(707) 249-6007		☐ Designated Operator In Charge	☑ Sampler / Wate Quality
Address 2				YY		
City	VACAVILLE	Emergency	YY		☐ Contract Operator	☐ Legal
State	CA					
Zip Code	95688-8834					
					☐ Owner	☐ Funding

Contact 2 First Name, Middle Initial: GORDON Last Name: STANKOWSKI		Business	(707) 447-8420	gm@rnvwd.com	DELETE CONTACT 2	NO CHANGES CONTACT 2
		Home	YY		Administrative	Operator
Title: GENERAL MANAGER		Facsimile	YY		Financial	Emergency
Address 1: 3875 JOSLIN AVENUE Address 2:		Mobile	(707) 689-3184	YY	Designated Operator In Charge	Sampler / Wate Quality
City: VACAVILLE State: CA Zip Code: 95688		Emergency	YY		Contract Operator	Legal
					Owner	Funding

Contact 3 First Name, Middle Initial: JOSHUA Last Name: HENDRICKSON		Business	(707) 455-4025	jhendrickson@sidwater.org	DELETE CONTACT 3	NO CHANGES CONTACT 3
		Home	YY		Administrative	Operator
Title: M&I OPS SUPERVISOR		Facsimile	YY		Financial	Emergency
Address 1: 810 VACA VILLA PKWY, STE 201 Address 2:		Mobile	(707) 249-8492	YY	Designated Operator In Charge	Sampler / Wate Quality
City: VACAVILLE State: CA Zip Code: 95688-8834		Emergency	YY		Contract Operator	Legal
					Owner	Funding

Contact 4 First Name, Middle Initial: JUSTIN Last Name: HOPKINS		Business	(707) 455-4007	jhopkins@sidwater.org	DELETE CONTACT 4	NO CHANGES CONTACT 4
		Home	YY		Administrative	Operator
Title: SENIOR ENGINEER		Facsimile	YY		Financial	Emergency
Address 1: 810 VACA VALLEY PKWY STE 201 Address 2:		Mobile	(707) 761-7769	YY	Designated Operator In Charge	Sampler / Wate Quality
City: VACAVILLE State: CA Zip Code: 95688-8834		Emergency	YY		Contract Operator	Legal
					Owner	Funding

Contact 5 First Name, Middle Initial: YY Last Name: YY		Business	YY	YY	DELETE CONTACT 5	NO CHANGES CONTACT 5
		Home	YY		Administrative	Operator
Title: YY		Facsimile	YY	YY	Financial	Emergency
Address 1: YY Address 2: YY		Mobile	YY		Designated Operator In Charge	Sampler / Wate Quality

City YY State YY Zip Code YY		Emergency	YY		☐ Contract Operator	☐ Legal
					☐ Owner	☐ Funding
Contact 6 First Name, Middle Initial YY Last Name YY		Business Home	YY YY	YY	☐ DELETE CONTACT 6	☐ NO CHANGES CONTACT 6
					☐ Administrative	☐ Operator
Title YY		Facsimile	YY		☐ Financial	☐ Emergency
Address 1 YY Address 2 YY		Mobile	YY	YY	☐ Designated Operator In Charge	☐ Sampler / Wate Quality
City YY State YY Zip Code YY		Emergency	YY		☐ Contract Operator	☐ Legal
					☐ Owner	☐ Funding
Contact 7 First Name, Middle Initial YY Last Name YY		Business Home	YY YY	YY	☐ DELETE CONTACT 7	☐ NO CHANGES CONTACT 7
					☐ Administrative	☐ Operator
Title YY		Facsimile	YY		☐ Financial	☐ Emergency
Address 1 YY Address 2 YY		Mobile	YY	YY	☐ Designated Operator In Charge	☐ Sampler / Wate Quality
City YY State YY Zip Code YY		Emergency	YY		☐ Contract Operator	☐ Legal
					☐ Owner	☐ Funding
Contact 8 First Name, Middle Initial YY Last Name YY		Business Home	YY YY	YY	☐ DELETE CONTACT 8	☐ NO CHANGES CONTACT 8
					☐ Administrative	☐ Operator
Title YY		Facsimile	YY		☐ Financial	☐ Emergency
Address 1 YY Address 2 YY		Mobile	YY	YY	☐ Designated Operator In Charge	☐ Sampler / Wate Quality
City YY State YY Zip Code YY		Emergency	YY		☐ Contract Operator	☐ Legal
					☐ Owner	☐ Funding

ADD NEW CONTACTS HERE (../Content/2020EARHelp.htm#2.2)

NEW CONTACT	**CONTACT RECORD**	**PHONE TYPE (../Content/2020EARHelp.htm#2.3.a)**	**PHONE NO.**	**EMAIL ADDRESS(ES)**	**CONTACT TYPE (Pick all that apply)**	
New 1 First Name, Middle Initial	Nancy	Business	(707) 455-4018	NMcWilliams@sidwater.org	☐ Administrative	☐ Operator
Last Name	McWilliams			YY		
Title	Senior Civil Engineer	Home	YY		☐ Financial	☐ Emergency

Address 1 Address 2	810 Vaca Valley Parkway YY	Facsimile Mobile	YY (707) 761-7787		Operator In Charge	Sampler / Wate Quality
City State Zip Code	Vacaville CA YY	Emergency	YY		Contract Operator	Legal
					Owner	Funding
Add Additional Contact (../Content/2020EARHelp.htm#2.3)					(pick all that apply)	
New 2 First Name, Middle Initial Last Name	YY YY	Business	YY	YY	Administrative	Operator
Title	YY	Home	YY		Financial	Emergency
Address 1 Address 2	YY YY	Facsimile Mobile	YY YY	YY	Operator In Charge	Sampler / Wate Quality
City State Zip Code	YY YY YY	Emergency	YY		Contract Operator	Legal
					Owner	Funding
Add Additional Contact					(pick all that apply)	
New 3 First Name, Middle Initial Last Name	YY YY	Business	YY	YY	Administrative	Operator
Title	YY	Home	YY		Financial	Emergency
Address 1 Address 2	YY YY	Facsimile Mobile	YY YY	YY	Operator In Charge	Sampler / Wate Quality
City State Zip Code	YY YY YY	Emergency	YY		Contract Operator	Legal
					Owner	Funding
Add Additional Contact					(pick all that apply)	
New 4 First Name, Middle Initial Last Name	YY YY	Business	YY	YY	Administrative	Operator
Title	YY	Home	YY		Financial	Emergency
Address 1 Address 2	YY YY	Facsimile Mobile	YY YY	YY	Operator In Charge	Sampler / Wate Quality
City State Zip Code	YY YY YY	Emergency	YY		Contract Operator	Legal
					Owner	Funding

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#2.4) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

3. Population Served (../Content/2020EARHelp.htm#3)

Total Population in DDW Records: 1130
(../Content/2020EARHelp.htm#3.1)

Population Type (../Content/2020EARHelp.htm#3.2)	Population Count	Annual Operating Period (../Content/2020EARHelp.htm#3.3) Begin Date MM	Begin Date DD	End Date MM	End Date DD
Residential	1130	01	01	12	31
Transient	0	01	01	12	31
Non-Transient	0	01	01	12	31

Method Used to Determine Population:

- ( ) --Pick one--
- ( ) Most recent United States census data
- (•) Multiplied number of service connections by 3.3
- ( ) Determined total number of dwelling units and multiplied by 2.8
- ( ) Other

If population is based on "Other" , identify the methods or sources of how it was estimated:

List the names of communities served by the system identifying both incorporated and unincorporated areas:

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#3.4) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

4. Number of Service Connections (../Content/2020EARHelp.htm#4)

A. Active Service Connections:

Total Active Potable Water Connections currently in Division of Drinking Water database: 398

The total number of Service Connections as of December 31, 2020 must be reported as either Unmetered or Metered for each Service Connection Type as appropriate. (../Content/2020EARHelp.htm#4.1)

TYPE	Potable Water Unmetered	Metered	Total*
Do NOT report fire sprinkler connections and fire hydrants. These connections are not counted toward "service connections" for compliance purposes.			
Single-family Residential: single family detached dwellings	0	398	398
Multi-family Residential: Apartments, condominiums, town houses, duplexes and trailer parks	0	0	0
Commercial/Institutional: Retail establishments, office buildings, laundries, schools, prisons, hospitals, dormitories, nursing homes, hotels, churches, campgrounds	0	0	0
Industrial: All manufacturing	0	0	0
Landscape Irrigation: Parks, play fields, cemeteries, median strips, golf courses	0	0	0
Agricultural Irrigation: Irrigation of commercially-grown crops	0	0	0
Total Active Connections*	0	398	398

* Calculated field

B. Number of Inactive Connections (all types)

Include only service connections that have been physically disconnected (e.g, meter removed) from the water system. All other service connections should be considered as “Active.” 0

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#4.3) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year’s report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

5. Source Inventory (../Content/2020EARHelp.htm#5)

Groundwater Source Inventory-Existing (../Content/2020EARHelp.htm#5.1)

PSCode	Source Name	Source Activity	Source Type	Availability
001	WELL 01	A	WL	P
002	WELL 02 - EMERGENCY STANDBY	A	WL	E

Groundwater Source Inventory-Not Listed

Add sources not listed above. Describe changes to sources above under "Comments"

PSCode	Name	Activity	Comments

Surface Water Source Inventory-Existing (../Content/2020EARHelp.htm#5.1)

PSCode	Source Name	Source Activity	Source Type	Availability

Surface Water Source Inventory-Not Listed

Add sources not listed above. Describe changes to sources above under "Comments"

PSCode	Name	Activity	Comments

Are your water sources metered?

- --Pick one--
- (•) Yes
- No

Do you routinely monitor the *static* water levels in your wells?

- --Pick one--
- (•) Yes
- No
- Not Applicable (no wells)

Do you routinely monitor the *pumping* water levels in your wells?

- --Pick one--
- (•) Yes
- No
- Not Applicable (no wells)

Are these levels recovering, declining or steady?:

- --Pick one--
- Recovering
- Declining
- (•) Steady
- Not Applicable (no wells)
- Don't Know

DISCUSS CHANGES TO ABOVE SOURCES

[1]**If a standby source was used in 2020** , provide the following information.

Name of the Standby Source used in 2020:	No. of days the Standby Source was in operation:	Were customers notified? (Y/N)	Was the Division of Drinking Water notified? (Y/N)	Describe the reason the Standby Source was used:

[2]**Inactive sources** are not approved as sources of supply and must be physically disconnected or similarly isolated.

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#5.3) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

6. Water Supply and Delivery (../Content/2020EARHelp.htm#6)

Important Note Concerning Water Use Questions:

The California Water Code Section 10609(c)(4) states: *"The state should identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers."*

It has come to the Division of Drinking Water's attention that, between this electronic Annual Report and other reports, some public water systems experience (at least some) redundant reporting of water use information and opportunities to streamline reporting may exist.

Are any questions in this section reported elsewhere?

- --Pick one--
- Yes
- No

Name the report(s) containing the information requested in this Electronic Annual Report for the 2020 calendar year (reporting year): YY
Regulatory entity receiving the report(s), contact name, and phone number: YY

A. WATER PRODUCED, PURCHASED, AND SOLD

Units of Measure for tables in Section 6A: (../Content/2020EARHelp.htm#6.1)

- --Pick one--
- Gallons
- Million Gallons
- Acre-feet (AF)
- 100 cubic feet

Volumes are based on:

- --Pick one--
- METERED VOLUMES
- ESTIMATED VOLUMES

6.A1 - Water Produced, Purchased, and Sold

If **only total annual production is available**, report your monthly estimated volumes by dividing the total by 12 for monthly reporting. If you have no annual production, please use the checkboxes to prefill zero values and advance to subsection 6.A2 for water purchasing details.

A	B	C	D	E	F	G	H
Month	Potable Water					Non-potable (exclude recycled)	Recycled
	Water Produced from Groundwater (Wells)	Water Produced from Surface Water	Finished Water Purchased or Received from another PWS	Total Amount of Potable Water*	Water Sold to Another PWS		
Check here if no production for every month	☐	☐	☐		☐	☐	☐

January	3026	0	0	3026	0	0	0	
February	3141	0	0	3141	0	0	0	
March	4497	0	0	4497	0	0	0	
April	5271	0	0	5271	0	0	0	
May	6247	0	0	6247	0	0	0	
June	8803	0	0	8803	0	0	0	
July	10107	0	0	10107	0	0	0	
August	13266	0	0	13266	0	0	0	
September	9335	0	0	9335	0	0	0	
October	8295	0	0	8295	0	0	0	
November	5073	0	0	5073	0	0	0	
December	3639	0	0	3639	0	0	0	
Annual Total*	80700	0	0	80700	0	0	0	
Percent Treated	0							

PWS = Public Water System

*Calculated field

The **Maximum Day** is the day during 2020 with the highest total water usage. Provide the date for Maximum volume supplied to the Distribution System, and report individual volumes recorded that day for each supply type.

Maximum Daily Demand (Date)	05/10/2020
Maximum Day - Groundwater (Volume)	2195
Maximum Day - Surface Water (Volume)	0
Maximum Day - Purchased or Received (Volume)	0
Maximum Day - Total Potable Water (Calculated)	2195
Maximum Day - Sold (Volume)	0

6.A2 - Water Purchased or Sold or Transferred (../Content/2020EARHelp.htm#6.2)

If water was *Purchased/received* from or *Sold/delivered* to another PWS, complete the table below:

Specify whether water was *Purchased* or *Sold or Transferred*	Name of PWS

6.A3 - Recycled Water Supplied (../Content/2020EARHelp.htm#6.3)

If recycled water was *supplied* to *your customers*, complete the table below:

Specify the level of treatment (e.g., tertiary, disinfected secondary)	Name of Recycled Water supplier

COMMENTS (Note: Comments will be made publicly available): YY

B. WATER DELIVERIES (../Content/2020EARHelp.htm#6.4)

Check this box No Water Deliveries if your water system does not have monthly water deliveries data and provide further clarification in the comments (e.g. system does not provide water to retail customers, billing system data is unavailable at the time of the report). Once you have checked this box, the rest of Section B will be hidden.

Units of Measure (UOM) for this table:
- --Pick one--
- Gallons
- Million Gallons
- Acre-feet (AF)
- 100 cubic feet

Provide all monthly metered water deliveries for all water sources (potable and non-potable) in the table below. If you have partially metered or unmetered water deliveries, check the help tips for additional guidance as you may be able to provide information.

A	B	C	D	E	F	G	H	I	J
	Single-family Residential	Multi-family Residential	Commercial/ Institutional	Industrial	Landscape Irrigation	Other	Total Retail*	Agricultural	Other PWS

Check if no water is delivered or not applicable									
January	1969	0	0	0	0	0	1969	0	0
February	2576	0	0	0	0	0	2576	0	0
March	4270	0	0	0	0	0	4270	0	0
April	4415	0	0	0	0	0	4415	0	0
May	7217	0	0	0	0	0	7217	0	0
June	8366	0	0	0	0	0	8366	0	0
July	10260	0	0	0	0	0	10260	0	0
August	10549	0	0	0	0	0	10549	0	0
September	7490	0	0	0	0	0	7490	0	0
October	6212	0	0	0	0	0	6212	0	0
November	4392	0	0	0	0	0	4392	0	0
December	2907	0	0	0	0	0	2907	0	0
Annual*	70623	0	0	0	0	0	70623	0	0
Annual % recycled water	0	YY	YY	YY	YY	YY		YY	YY

PWS = Public Water System

*Calculated field

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#6.6) YY

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CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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7. Recycled Water Use (../Content/2020EARHelp.htm#7)

Does your water system have recycled water in its service area (provided by your water system or another utility)?

- --Pick one--
- Yes
- (•) No
- Don't Know

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8. Customer Charges (../Content/2020EARHelp.htm#8a)

A. Water Rates and Charges (../Content/2020EARHelp.htm#A)

A.1 Does your water system charge customers for water (residential, commercial, industrial, or institutional water customers)? (../Content/2020EARHelp.htm#A.1)

- --Pick one--
- (•) Yes
- No

A.2 Select applicable customer types: (../Content/2020EARHelp.htm#A.2)

- --Pick one--
- (•) Residential
- Non-Residential (typically includes commercial, industrial, institutional customers etc.)
- Both

A1. Residential Water Rates and Charges (../Content/2020EARHelp.htm#A1)

A1.1 Please select the most common rate structure used to charge Residential customers: (../Content/2020EARHelp.htm#A1.1)

Single or Flat Rate – Average, static rate charged per billing cycle independent of water usage.

Base Rate – Base rates are the charges applied for receiving drinking water service regardless of the amount of water consumed. Base rates are usually fixed amounts and may include charges like sourcewater protection fees, service fees, etc.

Usage Rate – Rates that are charged based on the amount of volume or water consumed.

Fixed or Uniform - Rates that remain unchanged per billing cycle throughout the year.

Variable - Rates that are changed depending on water usage.

- Single or Flat Rate (Often Unmetered)
- (•) Base Rate (Fixed) + Usage Rate (Uniform)
- Base Rate (Fixed) + Usage Rate (Variable)
- Base Rate (Variable) + Usage Rate (Uniform)
- Base Rate (Variable) + Usage Rate (Variable)
- Allocation Based (California Water Code Sections 370-374; Specifically, California Water Code Section 372)
- Other (text box)

A1.1a. Other Notes YY

A1.2 Comments on rate structure, explain allocation rate if applicable: (../Content/2020EARHelp.htm#A1.2) YY

A1.3. Please select your billing frequency for Residential customers: (../Content/2020EARHelp.htm#A1.3)

- --Pick one--
- (•) monthly
- bi-monthly
- quarterly
- annually
- Other: In text below, provide the average number of days between billing

A1.4. Please select the metric or unit of measure (UOM) used in Residential Water Rates: (../Content/2020EARHelp.htm#A1.4)

- --Pick one--
- Gallons (Gal)
- (•) Hundred Cubic Feet
- Thousand Gallons
- Million Gallons
- Acre Feet
- Not Applicable

A1.5. Please select any variances or factors used to determine or adjust residential water rates or allocations: (../Content/2020EARHelp.htm#A1.5)

- Agricultural use (non-commercial or commercial)
- . Drought factor
- Elevation
- Evaportive Coolers
- Fire protection - water to irrigate vegetation
- Home-based business
- Livestock or large animals
- Lot size
- Medical needs
- Meter size
- Mitigation of high levels of total dissolved solids
- Occupancy (All-year)
- Occupancy (Seasonal)

- [ ] Pressure zone
- [ ] Soil compaction and dust control
- [ ] Supplement ponds and lakes to sustain wildlife
- [ ] Other : YY
- [ ] None of the above

A1.6. Does your water system have multi-family AND single family billing classes? (../Content/2020EARHelp.htm#A1.6)

--Pick one--
Yes
No

Single-Family- Single family detached dwellings (houses).

Multi-Family- Apartments, condominiums, town houses, duplexes and mobile homes.

A1.8. Residential Rates & Charges Table (../Content/2020EARHelp.htm#A1.8)

Please complete the table below – taking into consideration the following:

- You have selected Billing Frequency, please submit your rate data based on this frequency.
- If your flat rate varies over the year, please use the average flat rate amount.
- Please report the most common rate for the majority of your residential customers.

Customer Class & Billing Tiers	Base Rate	Usage Rate Structure Top Metric/ Unit of Measure (UOM)	Cost per Unit of Measure (UOM)
Residential - Tier 1	92.90	2.08	2.08

A1.9 Did your rates change in the reporting year?* (../Content/2020EARHelp.htm#A1.9)

- [x] No Change
- [ ] Yes, inflation adjustment
- [ ] Yes, increment of multi-year approved increase
- [ ] Yes, imposition of new or increased fees
- [ ] Yes, other:

A1.9a Other Notes: none

A1.10. Date of most recent update to the rate structure (this does not include regularly scheduled rate changes, rather actual changes to your rate structure): (../Content/2020EARHelp.htm#A1.10)**MM/DD/YYYY**: YY

A1.11. If you recently updated your rate structure, please briefly describe the changes that were made: (../Content/2020EARHelp.htm#A1.11): YY

A1.12. Provide a direct link to a web page that explains water rates and fees, if available. (../Content/2020EARHelp.htm#A1.12): YY

- [x] Not Available Online

A1.13. Upload rate structure documentation. (../Content/2020EARHelp.htm#A1.13)

Choose Files No file chosen

Upload

(Uploaded files:)
Delete RNVWDFeeScheduleFeb2019-ExhibitE.pdf (/TakeSurvey/Download?fileName=1049_CA4810013_426506_29983_2020EAR__WRResidentalRateUpload_1.pdf)

0%

A1.14 Comments on the allocation of Residential rate. (../Content/2020EARHelp.htm#A1.14): YY

A1.15 Does your residential customer bills include any non-drinking water charges (i.e. wastewater, stormwater, electricity, telecommunications, property tax etc.)? (../Content/2020EARHelp.htm#A1.15)

--Pick one--
Yes
No

A2. RESIDENTIAL SERVICE CONNECTIONS (../Content/2020EARHelp.htm#A2)

A2.1 What is the average charge* for a brand-new Residential connection (based on the most common meter size)? (../Content/2020EARHelp.htm#A2.1): 55000

* Also known as: Connection Fees; Advances in Construction, or Contributions in Aid for Construction.

A2.2 When was the connection charge* for a brand-new Residential connection last updated (based on the most common meter size reported above)? (../Content/2020EARHelp.htm#A2.2)

- [ ] No service charge for brand new connections

06/01/2019

* Also known as: Connection Fees; Advances in Construction, or Contributions in Aid for Construction.

A2.3 What is the one-time fee or deposit needed to create a new water service account for an existing Residential home (based on the most common meter size reported above)? (../Content/2020EARHelp.htm#A2.3): 00.00

A2.5. Check all costs covered by a new Residential connection fee: (../Content/2020EARHelp.htm#A2.5)

- [x] Existing infrastructure buy-in (e.g., water treatment/ conveyance/sewage treatment)
- [ ] Upgrades to infrastructure (seismic retrofits, pipe replacements, etc.)
- [ ] Storm water management system
- [ ] Debt service charge
- [ ] Development of new water supplies
- [ ] Other : YY

A2.6. Comments on Residential connections (publicly available): (../Content/2020EARHelp.htm#A2.6) YY

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Please make sure to complete the Customer Charges section before completing this section.

8(B) Income (../Content/2020EARHelp.htm#8b)

B1. Total Revenue Generated from Different Sources* (../Content/2020EARHelp.htm#B1)

Instructions: Purpose of this section is to calculate total annual revenue generated. No revenue should be double counted.

B1.1 Total revenue generated exclusivity from water rates and charges* from all Residential customer types during the reporting year (includes single-family and multi-family). (../Content/2020EARHelp.htm#B1.1) 600000

*Do not include any other charges (I.e. connection fees, service fees, etc.)

B1.3 Total revenue generated exclusivity from other fees and charges* from all Residential customer types during the reporting year (includes single-family and multi-family customers).* (../Content/2020EARHelp.htm#B1.3) 180000

*Other fees and charges:
Include: Late fees, notice fees, penalties, shutoff fees, reconnection fees, bounced check fees, and any additional fees that were associated with water rates that are collected and approved in the fee schedule.
Do Not Include: Revenue generated by you water rates in the above question.

B1.5 Did you collect/receive revenue from interfund (from wastewater or stormwater utility) or governmental transfers (i.e. property taxes or fees, sales taxes or fees, etc. – typically from City/County General Fund)?* (../Content/2020EARHelp.htm#B1.5)

- [ ] --Pick one--
- [ ] Yes
- [x] No

B1.6 Total revenue lost from interfund or governmental transfers (if $0, enter $0)* (../Content/2020EARHelp.htm#B1.6) 0

Total interfund or governmental Revenue Gained (-):

B1.7 Total revenue generated from non-customer sources that have not already been accounted for (i.e. cell towers, lawsuits and settlements, energy generation, land leases, rent, other service fees, etc.)* (../Content/2020EARHelp.htm#B1.7) 0

Total Other Revenue Gained (+):

B1.7a Other Notes YY

B1.8 Total Annual Revenue for the Reporting Year* (../Content/2020EARHelp.htm#B1.8) 780000.00

B1.9 Approximation of Total Residential Charges (../Content/2020EARHelp.htm#B1.9)

Consumption	Drinking Water Charge: Water Bill	Other Charges from Interfund Transfer: Taxes / Fees	Total Drinking Water Cost to Customer: dollars/month	Provide Alternative Amount	Alternative Amount	Comments
6 HCF (../Content/2020Help.html#A3)	105.38	0.00	105.38	☐		YY
9 HCF (../2020Help.html#A3)	111.62	0.00	111.62	☐		YY
12 HCF (../Content/2019LWSHelp.htm#A3)	117.86	0.00	117.86	☐		YY
24 HCF (../Content/2020Help.html#A3)	142.82	0.00	142.82	☐		YY

B1.10 Days of cash-on-hand* at the end of the reporting year:* (../Content/2020EARHelp.htm#B1.10)

*How much cash your system has saved up, including reserve funds, that isn't earmarked for anything else (unrestricted cash) and estimates the number of days your system can pay its daily operation and maintenances costs before running out of this cash.

Number of Days 365

B1.11 Comments on water system revenues: (../Content/2020EARHelp.htm#B1.11)

Comment
YY

B2.Total Expenses (../Content/2020EARHelp.htm#B2)

Instructions: Purpose of this section is to calculate total annual expenses. No expense should be double counted.

B2.1 Total annual operations and maintenance expenses* (../Content/2020EARHelp.htm#B2.1)

* Expenses incurred during the system's normal operation. This can include salaries, benefits for employees, utility bills, system repair and maintenance, supplies (e.g., treatment chemicals), insurance, and water purchased for resale.

Total Operations and Maintenance Expenses (-): 600000

B2.2 Total annual expenses from investing or capital expenditures* (../Content/2020EARHelp.htm#B2.2)

* Expenses incurred from purchase of property and equipment; construction of new assets (i.e. treatment, distribution etc.)

Total Investment Expenses (-): 200000

B2.3 Total annual expenses from financing activities* (../Content/2020EARHelp.htm#B2.3)

* Expenses incurred from retirement of long-term debt, purchase of securities, interest expenses etc.

Total Financing Activity Expenses (-): 20000

B2.4 Total Other annual expenses* (../Content/2020EARHelp.htm#B2.4)

Total Other Expenses (-): 0

B2.4a Other Notes YY

B2.5 Total annual expenses* (../Content/2020EARHelp.htm#B2.5)

Total Annual Expenses (-): 820000.00

B2.6 Comments on Total Expenses: (../Content/2020EARHelp.htm#B2.6)

Comment
YY

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Please make sure to complete the Customer Charges section before completing this section.

8(C) Affordability (../Content/2020EARHelp.htm#8c)

C1. Shut-offs (../Content/2020EARHelp.htm#C1)

Senate Bill 998 (over 200 service connections to be applicable and mandatory)

Health & Safety Code 116918.
An urban and community water system shall report the number of annual discontinuations of residential service for inability to pay on the urban and community water system's Internet Web site, if an Internet Web site exists, and to the board. The board shall post on its Internet Web site the information reported.

Health & Safety Code Section 116904.
(a) An urban water supplier not regulated by the Public Utilities Commission shall comply with this chapter on and after February 1, 2020. (b) An urban and community water system regulated by the Public Utilities Commission shall comply with this chapter on and after February 1, 2020. The urban and community water system regulated by the Public Utilities Commission shall file advice letters with the commission to conform with this chapter. (c) An urban and community water system not described in subdivision (a) or (b) shall comply with this chapter on and after April 1, 2020.

- **"Residential service"** means water service to a residential connection that includes single-family residences, multifamily residences, mobilehomes, including, but not limited to, mobilehomes in mobilehome parks, or farmworker housing.
- **"Urban and community water system"** means a public water system that supplies water to more than 200 service connections.
- **"Urban water supplier"** has the same meaning as defined in Section 10617 of the Water Code.

C1.1 How many accounts for Residential service connections had their water shut-off once during the year due to failure to pay? (../Content/2020EARHelp.htm#C1.1)

	Occupied Accounts	Unoccupied Accounts	Unknown Accounts (../Content/2019LWSHelp.htm#UnknownOccupancy)	Total*
C1.1a Residential Accounts	0	0	0	0

C1.2. How many accounts for Residential service connections had their water shut off more than once during the year due to failure to pay? (../Content/2020EARHelp.htm#C1.2)

	Occupied Accounts	Unoccupied Accounts	Unknown Accounts	Total*
C1.2a Residential Accounts	0	0	0	0

Data not collected. System will begin collecting. Grace period 2020 and 2021 eAR.

C1.5. What is the Residential fee, including all administrative and processing fees, to restore drinking water service due to failure to pay during operating hours? (../Content/2020EARHelp.htm#C1.5)

	Fee
C1.5a Residential Accounts	150

C1.6. What is the Residential fee, including all administrative and processing fees, to restore drinking water service due to failure to pay during non-operating hours? (../Content/2020Help.html#A5.cd)

	Fee
C1.6a Residential Accounts	150

C1.7 Do you offer an extended repayment or other customer payment assistance plan? (../Content/2020EARHelp.htm#C1.7)

- --Pick one--
- (•) Yes
- No

C1.7.1.How many occupied Residential customer accounts participated in your extended payment of other customer payment assistance plan? (../Content/2020EARHelp.htm#C1.7.1)

C1.7.1a Residential Accounts 0

Data not collected. System will begin collecting. Grace period 2020 and 2021 eAR.

C1.7.2. How many of the continuously occupied Residential customer accounts were shut off at least once during the year and were enrolled in an extended assistance plan at the time of the service disconnection? (../Content/2020EARHelp.htm#C1.7.2)

C1.7.2a. Residential Accounts 0

Data not collected. System will begin collecting. Grace period 2020 and 2021 eAR.

C1.8. What is the number of residential accounts (single-family, multi-family, and mixed use that include residential) that were missing one or more required water bill payments at the end of your year? (../Content/2020EARHelp.htm#C1.8) YY

C1.9. Comments on Shut-offs (publicly available): (../Content/2020EARHelp.htm#C1.9) Due to COVID no shutoffs.

C2. Residential Customer Assistance (../Content/2020EARHelp.htm#C2)

C2.1 In the reporting year, did you offer any of the following types of bill assistance to customers? (../Content/2020EARHelp.htm#C2.1)

- Low-income water rate assistance
- Flexible payment terms
- Alternative payment terms
- Temporary assistance
- Special medical need
- Other types of assistance
- None

C2.7 Does your system partner with an outside entity (e.g. United Way) to provide assistance to low-income households? (../Content/2020EARHelp.htm#C2.7)

- --Pick one--
- Yes
- (•) No

C2.8 Do you offer bill forgiveness under certain circumstances? (../Content/2020EARHelp.htm#C2.8)

- --Pick one--
- (•) Yes
- No

Comment: Due to LNU fire destroyed homes.

C2.8.1 Number of accounts: (../Content/2020EARHelp.htm#C2.81) 50

Information Not Collected

C2.8.2 Average Amount Forgiven: (../Content/2020EARHelp.htm#C2.8.2) 10000

Information Not Collected

C2.9 Comments on Affordable Drinking Water Assistance (publicly available): (../Content/2020EARHelp.htm#C2.9) YY

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9. Water Quality (../Content/2020EARHelp.htm#9)

Date of Emergency Notification Plan: 03/30/2021

Is the Emergency Notification Plan up to date?

- --Pick one--
- Yes
- No

If no is selected, please upload a revised WQENP. (../Content/2020EARHelp.htm#9.2)

Select here (../PwsUser/PWSWQENPList?PwsID=CA4810013) to view your water system's last WQENP received. (../Content/2020EARHelp.htm#9.1)

A. DIRECT ADDITIVES (../Content/2020EARHelp.htm#9.3)

Pursuant to Section 64590, Title 22 of the California Code of Regulations, (effective January 1, 1994), all chemicals or products, including chlorine, added directly to the drinking water as part of a treatment process must meet the NSF/ANSI Standard 60.

☐ Check this box if your public water system has chemicals or products, including chlorine, added directly to the drinking water as part of a treatment process.

Please complete the following table for each chemical used by this water system. If you are not sure whether a chemical you are using meets this standard, contact the manufacturer or distributor of the chemical. (../Content/2020EARHelp.htm#9.4)

Name of Chemical	Name of Manufacturer	Purpose of using chemical	Chemical is ANSI/NSF Standard 60 certified (Y/N)	Use initiated in 2020 (Y/N)
		0		0

B. INDIRECT ADDITIVES

As of March 9, 2008, a water system shall not use any chemical, material, lubricant, or product in the production, treatment or distribution of drinking water that comes in contact with the drinking water that does not have certification of meeting NSF/ANSI standard 61.

Does your water system have procedures to ensure all future equipment and materials meet this standard?

- --Pick one--
- Yes
- No
- N/A

If you have any questions on the requirements related to indirect additives, you may contact your local regulatory agency.

C. CONSUMER CONFIDENCE REPORT (../Content/2020EARHelp.htm#9.5)

Date of Consumer Confidence Report (CCR): 06/25/2021

Is the CCR date up to date?

- --Pick one--
- Yes
- No

Select here (../PwsUser/PWSCCRList?PwsID=CA4810013) to view your water system's last CCR received.

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#9.6) YY

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10. Backflow–Cross Connection Control (../Content/2020EARHelp.htm#10)

	Total Number in System in 2020	Number Installed in 2020	Number Tested in 2020	Number Failed in 2020	Number Repaired/ Replaced
Backflow Assemblies on the Service Connections or Meter (Reduced Pressure Principle and Double Check Valve assemblies) (../Content/2020EARHelp.htm#10.1)	392	6	392	8	8

Backflow Assemblies On-site but not on the Service Connections or Meter (Reduced Pressure Principle and Double Check Valve assemblies) (../Content/2020EARHelp.htm#10.2)	0	0	0	0	0
Air-gap Separation (../Content/2020EARHelp.htm#10.3)	0	0			

No. of *Inactive* Backflow Prevention Assemblies in water system in 2020: (../Content/2020EARHelp.htm#10.4) 0

Date of last cross-connection control survey done on the system: 08/01/2020

Cross Connection Control Program Coordinator

Name: Rick Trites

Certification Number: 11406

Business Phone: (530) 828-5438 Email Address: tritesbackflow@gmail.com

Certification or training received: CA/NV AWWA 2020

Describe any cross-connection incidents that occurred during 2020: (../Content/2020EARHelp.htm#10.5)

None

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#10.6) YY

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11. Operator Certification (../Content/2020EARHelp.htm#11)

Please list the **State certified Drinking Water Operators** employed by your water system that supervise and direct the operation of your distribution system and water treatment plants where applicable.

A. DISTRIBUTION SYSTEM CERTIFIED OPERATORS

Your Distribution System Classification is: D1 (../Content/2020EARHelp.htm#11.1)

Do your Chief and Shift Distribution System Operators have the minimum level required?

- --Pick one--
- Yes
- No
- Don't Know
- Not Applicable (transient non-community water system)

☐ Check this box if your public water system has designated a Chief Distribution Operator.

Name of Chief Distribution Operator (First name Last name): Joshua Hendricson

Grade of Chief Distribution Operator (1, 2, 3, 4 or 5): 5

Distribution Operator Number (3, 4 or 5 digits): 38478

Distribution Certification Expiration Date (MM/DD/YYYY): 06/01/2024

☐ Check this box if your public water system has one or more certified distribution system shift operators.

Click here to upload an Excel spreadsheet (../TakeSurvey/UploadGrid?surveysTakenId=426506&surveyId=1049&questionId=29258) of your water system's certified distribution operators.

Distribution Operator Name (First name Last name)	Grade of Distribution Operator (1, 2, 3, 4, or 5)	Chief or Shift[1] (C, S or X)	Distribution Operator Number (3, 4 or 5 digits)	Distribution Certification Expiration Date (MM/DD/YYYY)
Joshua Hendrickson	5	1	38478	

[1]Use "C" for Chief Operator and "S" for Shift Operator. If neither, put an "X". Do not leave blank.

B. TREATMENT PLANT CERTIFIED OPERATORS

Your Highest Treatment System Classification is: T1 Or D1 required (../Content/2020EARHelp.htm#11.2)

Do your Chief and Shift Treatment Plant Operators have the minimum level required?

- (○) --Pick one--
- (●) Yes
- (○) No
- (○) No treatment facility except precautionary disinfection
- (○) Don't Know

☑ Check this box if your public water system has designated a Chief Treatment Operator.

Name of Chief Treatment Operator (First name Last name): Gregory Stinson
Grade of Chief Treatment Operator (1, 2, 3, 4 or 5): 4
Treatment Operator Number (3, 4 or 5 digits): 23041
Treatment Certification Expiration Date (MM/DD/YYYY): 08/01/2022

☑ Check this box if your public water system has one or more certified treatment plant shift operators.

Click here to upload an Excel spreadsheet (../TakeSurvey/UploadGrid?surveysTakenId=426506&surveyId=1049&questionId=29260) of your water system's certified water treatment operators.

Treatment Operator Name (First name Last name)	Grade of Treatment Operator (1, 2, 3, 4, or 5)	Chief or Shift[1] (C, S or X)	Treatment Operator Number (3, 4 or 5 digits)	Treatment Certification Expiration Date (MM/DD/YYYY)
Gregory Stinson	4	1	23041	

[1]Use “C” for Chief Operator and “S” for Shift Operator. If neither, put an "X". Do not leave blank.

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#11.4) YY

12. Water System Improvements (../Content/2020EARHelp.htm#12)

The California Waterworks Standards (Section 64556) require an amended permit for any of the following improvements or modifications:

- Addition of a new distribution reservoir with a capacity of 100,000 gallons or more
- Modification or extension of the existing distribution system using an alternative to the requirements of the California Waterworks Standards (see Sections 64570 through 64578)
- Modification of the water supply by:
  - Adding a new source
  - Changing the status of an existing source (for example, active to standby) or
  - Changing or altering a source, such that the quality or quantity of water supply could be affected
- Any addition or change in treatment, including
  - Design capacity
  - Process
- Expansion of the existing service area by 20 percent or more of the number of service connections specified in your current permit.

If your water system made any improvements or modifications during 2020 for which a permit was not obtained, please describe the improvements or modifications below.

Indicate any planned improvements or modifications for 2020.

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#12.2) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).
CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year’s report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

13. Complaints Reported (Written or Verbal) (../Content/2020EARHelp.htm#13)

Type of Complaint	No. of Complaints Reported by Customers	No. of Complaints Investigated	No. of Complaints reported to the Division of Drinking Water or Local County Staff	Brief Description of Cause and Corrective Action taken
Taste and Odor	0	0	0	0
Color	0	0	0	0
Turbidity	0	0	0	0
Visible Organisms	0	0	0	0
Pressure (High or Low)	0	0	0	0
Water Outages	0	0	0	0
Illnesses (Waterborne)	0	0	0	0
Other (Specify)	0	0	0	0
Total No. of Complaints*	0	0	0	

*Calculated field

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#13.2) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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14. Treatment Plants and Disinfection Plan (../Content/2020EARHelp.htm#14)

A. GROUNDWATER TREATMENT (../Content/2020EARHelp.htm#14.1)

WSF ID	Groundwater Treatment Plant Name	Treatment Process	Date of Operations Plan	Is Operations Plan Current? (Y/N)	Contaminant Removed

Describe any plant problems, process failures, major shutdowns, etc., which occurred in 2020 and substantially affected the plant performance AND/OR any significant modifications or maintenance provided to the plant(s):

Please indicate any treatment plants that should be excluded due to chlorination only:

B. SURFACE WATER TREATMENT (../Content/2020EARHelp.htm#14.2)

WSF ID	Surface water Treatment Plant Name	Treatment Process	Date of Operations Plan	Is Operations Plan Current? (Y/N)	Contaminant Removed

Describe any plant problems, process failures, major shutdowns, etc., which occurred in 2020 and substantially affected the plant performance AND/OR any significant modifications or maintenance provided to the plant(s):

C. EMERGENCY DISINFECTION PLAN / WATERSHED SANITARY SURVEY REPORT (../Content/2020EARHelp.htm#14.3)

Date of current Emergency Disinfection Plan (EDP)* : 05/04/2021

Name of Document that includes the Emergency Disinfection Plan:	YY
Date of document that includes the Emergency Disinfection Plan:	YY
Date of last watershed sanitary survey report : (../Content/2020EARHelp.htm#14.4)	10/01/2018
Date planned to complete next watershed sanitary survey report*:	10/01/2023

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#14.5) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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15. Distribution System and Storage Tanks (../Content/2020EARHelp.htm#15)

A. SYSTEM PROBLEMS (../Content/2020EARHelp.htm#15.1)

Type of Problem	No. of Problems	No. of Problems Investigated	No. of Problems Reported to the Division of Drinking Water or Local County Staff	Brief Description of Cause and Corrective Action Taken
Service Connection Breaks/ Leaks	16	16	16	Pulled new service lines, repair leaks
Main Breaks/Leaks	7	7	7	Install new service saddles, replace PVC
Water Outages (../Content/2020EARHelp.htm#15.1.a)	0	0	0	0
Boil Water Orders	1	1	1	LNU Fire
Total*	24	24	24	

Comments on SYSTEM PROBLEMS (publicly available): YY

B. INFRASTRUCTURE AND PIPELINE MATERIALS (../Content/2020EARHelp.htm#15.2)

Pipe Material in Distribution System

1. Which materials does your distribution system pipe consist of? Please check all that apply:

Pipeline Material	Percentage of distribution pipe system composed of the materials selected above	Average Age (in years)
Plastic (Including Poly Vinyl Chloride and HDPE)	YY	YY
Steel	YY	YY
Cast Iron	YY	YY
Galvanized Iron	YY	YY
Ductile Iron	YY	YY
Cement Concrete	YY	YY
Asbestos Cement	YY	YY
Other	YY	YY

Comments on INFRASTRUCTURE AND PIPELINE MATERIALS (publicly available):
YY

C1. DEAD-END FLUSHING PROGRAM (../Content/2020EARHelp.htm#15.3)

Total No. in System	No. with Blowoffs	No. Flushed in 2020	Frequency of Flushing

89	0	89	Every 2 years

Comments on DEAD-END FLUSHING PROGRAM (publicly available): YY

C2. ALL FLUSHING OPERATIONS

Units of Measure for total volume reported below:

- (•) --Pick one--
- ( ) Gallons
- ( ) Million Gallons
- ( ) Acre-feet (AF)
- ( ) 100 cubic feet
- ( ) N/A

Total Volume in units of measure selected above; include all types of flushing, not just dead-end flushing: (../Content/2020Help.html#SB555) 202

Comments on ALL FLUSHING OPERATIONS (publicly available): YY

D. VALVE EXERCISE PROGRAM (../Content/2020EARHelp.htm#15.4)

Size Range of Valves	Total No. in System	No. Exercised in 2020	Frequency of Valve Exercising
YY	YY	YY	YY

Comments on VALVE EXERCISE PROGRAM (publicly available): YY

E. STORAGE TANK/RESERVOIR INSPECTION/CLEANING PROGRAM (../Content/2020EARHelp.htm#15.5)

[ ] Check this box if your public water system has any storage tanks or reservoirs (Do not include pressure tanks).

Click here to upload an Excel spreadsheet (../TakeSurvey/UploadGrid?surveysTakenId=426506&surveyId=1049&questionId=28885) of your water system's Storage Tank/Reservoir Inspection/Cleaning Program.

Tank name	Capacity (in million gallons, MG)	Year installed	Date of last inspection	Date of last cleaning	Date re-lined or coated	Corrosi protectio

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#15.6) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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16. Emergency Preparedness and Response (../Content/2020EARHelp.htm#16)

A. AUXILIARY POWER SUPPLY (../Content/2020EARHelp.htm#16.1)

Does your water system have backup power for:

1. Sources:
   - ( ) --Pick one--
   - (•) All
   - ( ) Some
   - ( ) None
   - ( ) Not Applicable
2. Pumping Stations:
   - ( ) --Pick one--
   - (•) All
   - ( ) Some
   - ( ) None
   - ( ) Not Applicable

3. Water Treatment Plants:

- (•) --Pick one--
- ( ) All
- ( ) Some
- ( ) None
- ( ) Not Applicable

If your system has backup power, how many times per year is it exercised? 12

Can your system maintain system pressure in all pressure zones either by backup power or by gravity fed storage during power outages for each of the following number of hours?

24 hours

- (•) --Pick one--
- ( ) Yes
- ( ) No
- ( ) Only in some zones

48 hours

- (•) --Pick one--
- ( ) Yes
- ( ) No
- ( ) Only in some zones

72 hours

- (•) --Pick one--
- ( ) Yes
- ( ) No
- ( ) Only in some zones

Is your backup power system automatic or manual start?:

- (•) --Pick one--
- ( ) Automatic
- ( ) Manual Start
- ( ) Not Applicable

B. EMERGENCY RESPONSE PLANS (../Content/2020EARHelp.htm#16.2)

PUBLIC WATER SYSTEMS WITH AT LEAST 3,300 OR MORE PERSONS SHOULD REVIEW AND REVISE THEIR EMERGENCY RESPONSE PLAN TO ENSURE THAT THE PLANS ARE SUFFICIENT TO ADDRESS POSSIBLE DISASTER SCENARIOS.

Do you have an Emergency Response Plan (ERP) that addresses the procedures for the restoration of water service for your water system?

- (•) --Pick one--
- ( ) Yes
- ( ) No

Date of your current Emergency Response Plan: 10/18/2019

Date ERP was last exercised with a tabletop or other activity: 08/19/2020

Are you registered in your local energy utility's Public Safety Power Shutoff notification plan?

- (•) --Pick one--
- ( ) Yes
- ( ) No
- ( ) Not applicable

C. WATER PARTNERSHIPS (../Content/2020EARHelp.htm#16.3)

1) Are you interested in obtaining information about water partnership or consolidation options (https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/waterpartnership.html)? If yes, please mark those that apply:

- [ ] Please have Drinking Water staff contact our organization with more information about water partnership activities such as consolidation, extension of service, or interties that connect one system to another
- [ ] Training Info Please send my water system information about training opportunities
- [ ] Funding Info Please send my water system information about funding options for water partnerships and consolidations

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#16.4) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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17. Water Conservation and Drought (../Content/2020EARHelp.htm#17)

1. Date of your revised Drought Preparedness Plan or Water Shortage Contingency Plan, if any: (../Content/2020EARHelp.htm#17.1) YY

Water system does not have a current drought or water shortage plan, mark box if applies:

2. Did your water system experience water shortages in 2020? (../Content/2020EARHelp.htm#17.3)

- --Pick one--
- Yes
- No

If yes, please estimate the amount of shortfall in units selected for this section

Volume of water: YY

Units of Measure: (../Content/2020EARHelp.htm#17.2)

- --Pick one--
- Gallons
- Million Gallons
- Acre-feet(AF)
- 100 cubic feet

3. How many water-shortage response stages are in your drought plan? For "non-applicable", enter zero.

- --Pick one--
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8+

4. Did drought conditions cause you to activate emergency standby wells in 2020?

- --Pick one--
- Yes
- No
- Not Applicable (no wells)

5. Do you project water shortages in the current calendar year? (../Content/2020Help.htm#WaterShortages)

- --Pick one--
- Yes
- No

6. Does your water system anticipate having to go to mandatory restrictions in the upcoming year? (../Content/2020EARHelp.htm#17.4)

- --Pick one--
- Yes
- No

7. Identify the method your water system uses to discourage excessive water use when in drought, in support of SB 814 (2016) (Check as applicable)

- . 7a. Rate structure (e.g., block tiers, water budgets, or rate surcharges above base rates for excessive water use)
- 7b. Excessive water use ordinance, rule, or tariff condition
- 7c. Not implementing
- . 7d. Not applicable: not an urban retail water supplier (../Content/2020EARHelp.htm#17.5)
- 7e. COMMENTS REGARDING SB 814 (Note: Comments will be made publicly available) : YY

8. To identify data streamlining opportunities, are there other government agencies, aside from the Department of Water Resources, that require reports on the same information found in the Electronic Annual Report? If yes, please describe (include the title of the report, which agency receives it, and the type of information it includes): YY

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#17.12) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

To view last year's report, click here (https://ear.waterboards.ca.gov/TakeSurvey/PreviousSummary?surveysTakenId=426506).

18. Climate Change Adaptation and Resiliency for Water Utilities (../Content/2020EARHelp.htm#18)

A. CLIMATE THREATS, SENSITIVITY, AND MAGNITUDE OF IMPACTS (../Content/2020EARHelp.htm#18.2)		
Drought Groundwater	Decreased water storage (low lake and reservoir levels)	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Groundwater depletion (increased extraction, reduced groundwater recharge, etc.)	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Change in seasonal runoff and/or loss of snowmelt	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Region relies on water diverted from the Delta, imported from the Colorado River, or other climate-sensitive area	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
Water Quality Degradation	Salt-water intrusion into aquifers	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Altered water quality during storm events (turbidity shifts, debris flows)	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity

	Surface water quality issues related to eutrophication, algal blooms, invasive species	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
Flooding Sea Level Rise	High flow events and flooding	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Inundation due to sea level rise, high tides, and/or coastal storm surges	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Aging flood protection infrastructure (levees), or insufficient impoundment capacity	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
Extreme Heat	Peak demand volume surges (due to extreme heat, temperature trends, etc.)	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Increases in agricultural water demand or energy sector needs	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
Fire Other	Increased fire risk and altered vegetation, e.g., wildfires	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
	Disruption of power supply	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity

	Other YY	Choose an item --Pick one-- High or Already Experiencing Medium Sensitivity None to Low Sensitivity
None	Active Water Resource Threat Monitoring	Choose an item --Pick one-- Yes No I don't know
B. ADAPTATION MEASURES (../Content/2020EARHelp.htm#18.3)		
Install new and deeper drinking water wells, or modify existing wells to increase pumping capacity		Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Develop local supplemental water supply, enhanced treatment, or increased storage capacity (e.g. recycled water, storm runoff for groundwater recharge, desalination, new reservoir)		Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Interconnection with other utilities (transfers, mutual aid agreements with neighboring utilities)		Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Relocate facilities, construct or install redundant facilities		Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Modify facilities (e.g., install barrier or levee, raise a wall, seal a door, elevate construction)		Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A

Conservation measures (demand management, enhanced communication and outreach)	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Fire prevention – brush management, partnerships	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Alternative or backup energy supply	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
On-site energy generation	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Enhance monitoring program, budget for additional testing and treatment, chemicals	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A
Other YY	Choose an item --Pick one-- Completed In Progress Plan to Implement Will not Implement N/A

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#18.4) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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19. Lead Service Line Replacement (../Content/2020EARHelp.htm#19)

If your water system completed a timeline for replacement plan in 2020, you must read and complete this section

BACKGROUND - UPDATED

Under California Health and Safety code, Section 116885, added by Senate Bill 1398 (2016) and amended by Senate Bill 427 (2017), all community water systems (CWS) were required to compile an inventory of known lead user service lines in its distribution system by July 1, 2018. The inventory includes all user service lines that are active and those that are reasonably expected to become active in the future. In addition, the inventory has to include any areas for which the CWS cannot determine the content of the service line. CWS were further required to propose a schedule to replace all the known lead user service lines and user service lines constructed of unknown material by July 1, 2020.

DDW is utilizing the electronic annual report (eAR) to gather and update the timeline for replacement spreadsheet. You need to update your timeline for replacement annually.

For additional information including the spreadsheet template, certification form and Facts Sheet, please visit
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/lead_service_line_inventory_pws.html
(https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/lead_service_line_inventory_pws.html)

If you have questions about completing this section of the report, please contact David.Pimentel@Waterboards.ca.gov or call (916) 323-0572.

COMPLIANCE WITH LEAD SERVICE LINE REPLACEMENT REQUIREMENT - UPDATED

If the CWS reported lead or unknown material service lines or fittings in the 2019 EAR LSLR section (rows A, B, M and/or O are NOT equal to 0), the CWS must submit an updated Replacement Timeline spreadsheet (SS) to reflect the lines and fittings that have been replaced or any changes to the timeline previously submitted. Updating the Replacement Timeline letter (LTR) is optional but would be helpful if the water system is not meeting the timeline previously approved. Click on the HERE link below to upload the revisions. A new browser tab will open which has the Replacement Timeline LTR and SS upload locations at the bottom of the page, after you have uploaded the documents navigate back this browser tab to complete the Finalize section of the EAR after the uploads are completed.

Click HERE (../PwsUser/PWSLSLRList?PwsID=CA4810013) to open the LSLR uploads page

**The timeline spreadsheet template and FAQs on this requirement can be found on the Lead Service Line Inventory Requirement for Public Water Systems webpage in the Resource and supplemental material section (bottom of page) at:
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/lead_service_line_inventory_pws.html
(https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/lead_service_line_inventory_pws.html)**

COMMENTS (Note: Comments will be made publicly available): (../Content/2020EARHelp.htm#19.2) YY

Need Help Completing the EAR. Click HERE (https://www.waterboards.ca.gov/drinking_water/programs/).

CA4810013 RURAL NORTH VACAVILLE WATER DISTRICT

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Finalize (../Content/2020EARHelp.htm#20)

Disclosure: Be advised that Sections 116725 and 116730 of the California Health and Safety Code states that any person who knowingly makes any false statement on any report or document submitted for the purposes of compliance may be liable for a civil penalty not to exceed five thousand dollars ($5,000) for each separate violation for each day that the violation continues. In addition, the violators may be prosecuted in criminal court and upon conviction, be punished by a fine of not more than $25,000 for each day of the violation, or be imprisoned in county jail not to exceed one year, or both the fine and imprisonment.

Please indicate the total number of hours spent to complete this report. This information will be utilized to characterize the level of effort required to complete this report 40

☐ By checking this box you acknowledge that any information submitted in this report is publicly accessible and may be used by the State of California to determine compliance with applicable laws and regulations. Knowingly submitting false information in this report is a misdemeanor, and by submitting this information you certify that the contents are, to the best of your knowledge, complete and correct.

REPORT SUBMITTED BY (../Content/2020EARHelp.htm#20.2)

Name: Sue Murphy
Title: Water Quality Specialist
Work phone: 707-455-4021
Cell phone: 707-249-6007
Email address: murphys@sidwater.org

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Appendix J

COMMENT & RESPONSE LOG

Rural North Vacaville Water District
Municipal Service Review Public Comment Log

#	Commenter/Agency	Date	Page/Section	Comment	Response
1	LAFCO Commissioner Jim Spering	02/14/22	Page vii & 52	Item 3 : Require the District to develop a 5 -10 year strategic, financial and infrastructure plan	Staff will amend the language
2	Gordon Stankowski	02/14/22	Multiple	See attached Response to Comments, J-1	Refer to Attachment J-1
3	Solano Irrigation District		Multiple	See attached Responees to Comments, J-2	Refer to Attachment J-2
4	Solaano County Department of Resource Management	4/11/22	Multiple	See attached Response to Comments, J3	Refer to Attachment J-3
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

ATTACHMENT J-1

RNVWD MSR Comments – Feb 14, 2022
Response to Comments – Gordon Stankowski, RNVWD General Manager

Page ii: "well 2 will have a generator by June 2022"

The MSR is based on the information reported to the California Department of Water Resources by the District. This report must be consistent with what has been reported on record.

Page iii: "system is not designed for fire flow"; and correction on the number of fire hydrants ~~78~~ 80

The MSR and system design information is based on the "Engineer's Report for Supplemental Assessments to the RNVWD Assessment District" as revised in January 5, 2001, by Coastland Civil Engineering. According to the report the District's system provides 80 fire hydrants. Based on the fire hydrant maps produced by California CAD Solutions (CALCAD) dated February 13, 2020 and posted on District's website the correct number is 79.

Page iv: [comment about zoning and parcel size related to water access];

Thank you for the comment, however, it is not necessary nor does it change any analysis.

Page v: correction for the Division of Drinking Water requirement; "rights"

Noted and incorporated. The second comment is a redundant word and not incorporated.

Page vi: Revisions and corrections suggested.

All suggestions noted and incorporated.

Page 17: redline on "fire protection"

The MSR is based on information reported to the State and what is posted on the District's website. Therefore, the MSR is consistent with reported statements that the District provides fire protection water.

Page 22: reline of "fire protection purposes"

Id.

Page 23: typo and term correction; Correction of "two" to "one" generators.

Noted and incorporated. ; See prior responses. MSR is based on information reported to the State.

Page 24: correction to number of generators; adjust number of booster pumps.

See prior responses. MSR is based on information reported to the State. Booster pumps updated.

Page 25: addition of legend and identifying the booster pump locations

Suggestions noted and incorporated.

Page 26: correction and revisions to ProMinent facilities and operations

Comments noted, revisions made. Also added reference verifying compliance with federal requirements to page 53.

Page 35: addition of "SID" abbreviation
Noted and incorporated.

Page 45: correction to the number of fire hydrants, and recommended clarification for the use of the hydrants.
Noted and incorporated.

Page 46: capitalization corrections, and parcel size clarifications.
Noted and incorporated.

Question on #10 regarding terminology.
The statement is accurate and remains.

Page 51: capitalization correction.
Noted and incorporated.

Page 52: capitalization corrections.
Noted and incorporated.

Questions regarding Well #2.
Analysis with and without Well #2 is appropriate based on the current inactive status of the well. Well #1 is at or near design capacity. Bringing Well #2 online would satisfy the requirement for sufficient capacity to meet the maximum day demand as well as provide redundancy and improved reliability.

ATTACHMENT J-2

RNVWD MSR Comments – Feb 14, 2022
Response to Comments – Nancy McWilliams, P.E., Senior Civil Engineer, Solano Irrigation District

See comments and responses made by RNVWD in Attachment J-1.

ATTACHMENT J-3

RNVWD MSR Comments – April 11, 2022
Response to Comments – Solano County Department of Resource Management

Section 2.3 Aquifer Capacity and Recharge

Aquifer Capacity: *"estimated safe yield should be provided based on the recent studies"*

Please note that on page 43 the report states that several hydro-geologic studies have attempted to quantify the capacity and sustainable yield for the basal zone aquifer of the Tehama Formation. Findings from these studies show a range of recharge rates that would be sustainable. A geologic report by Borcalli for the English Hills Specific Plan EIR (1991) suggested that a sustainable groundwater extraction rate would be 16,640 acre-feet per year based on a recharge rate for the English Hills area of 2 acre-feet per acre per year. A groundwater investigation study (2016) for the city of Vacaville estimated that a safe yield would be 8,600 acre feet. RNVWD would add approximately 726 acre feet per year at its maximum pumpage capacity [see page 28].

Ground Level Trends: *"which geologic formations [do the groundwater] trends represent?"*

Groundwater can be found relatively close to the land surface in shallow aquifer zones (including the Putah Fan and upper zone of the Tehama Formation. Underlying the Putah Fan is the Tehama Formation, which is divided into upper, middle, and basal zones (see Figure 2-2). The upper zone supplies many shallow wells relied on by private residences in the English Hills area. The middle zone does not serve as a major water yielding unit. The basal zone, found around 1,000-1,500 feet below the surface, is utilized mainly for public water supply wells, including the City of Vacaville and the Rural North Vacaville Water District [see pages 4-6]. The groundwater level trends are from RNVWD for the Tehama Formation deep aquifer [see Figure 6-2 on page 28].

Recharge Rate: *"provide project plans for groundwater recharge, if any"*

To date the District does not have any project plans for groundwater recharge. Recharge rates are dependent upon rainfall and other sources. If groundwater is pumped at a faster rate than the aquifer is recharged by precipitation or other sources, water levels can drop, resulting in decreased water availability and deterioration of groundwater quality. Reliance upon groundwater often increases during drought periods leading to increased groundwater pumping to meet water demands [see page 6]. Multiple GSA's in the Solano Sub-basin (collectively referred to as the Solano GSA Collaborative) are working together towards development and implementation of a single Groundwater Sustainability Plan that brings the Solano Sub-basin into balance by 2040. Currently, RNVWD is not an active participant in the Solano GSA [see page 9].

Section 2.4 Impact of Droughts & Climate Change on Groundwater Levels

Recurring Drought Periods: The State Water Board "*urges water agencies to prioritize the development of a contingency plan to mitigate any water supply problems"*

The District implements a water conservation management plan and has sent a memo in 2020 to customers to voluntarily limit water use per state guidelines. Determination 6.3.8 was added regarding the lack of a contingency plan [see page 29] along with a new recommendation (#11) that the District should develop both a contingency plan and a conservation plan to deal with future drought conditions and climate change [see page 52].

Influence of Climate Change: *"how climate change has actually affected the pumping operations of the RNVWD"*

Annual groundwater production levels, including average consumption per service connection, increased over the five year period 2015-2020 [see Figure 7.3]. Reliance upon groundwater often increases during drought periods leading to increased groundwater pumping to meet water demands [see page 6].

Section 3.3 Sustainable Groundwater Management Act:

"It is recommended that RNVWD be more active and engaging with the Solano Sub-basin GSA in its implementation"

Noted [see page 36 and Determination 6.5.3]. Recommendation #5 encourages the District to conduct regular monitoring of groundwater levels and work with neighboring water provider agencies and local GSA to implement a plan for maintaining a safe, sustainable yield of groundwater from the Tehama Formation basal aquifer [see page 52].

Section 3.4 Public Drinking Water Regulatory Framework

"replace Department of Environmental Management" with Department of Resource Management"

Correction made [see page 10]

Section 6.3 Present and Planned Capacity of Public Facilities, Adequacy of Public Services, and Infrastructure Needs or Deficiencies

"Figure 6.1 or an additional map should include the locations of the well monitoring network, neighboring public water systems, and existing non-potable wells"

See additional maps showing neighboring water systems and groundwater monitoring facilities added to Appendix H,

Current Consumption: *". . . show the historical consumptive use demands or well production trends over the years to better project future needs and peak demands"*

See Appendix F for consumption and production trends over five year period from 2016-2020

Water System Capacity: *"Due to pump age and wear and changing groundwater conditions, operational pump capacity may not be the same as originally designed. An updated engineering report based on the current pumping rates and capacity is recommended"*

Pump tests were performed by Power Services, Inc on September 14, 2021 with the following results:

Well #1 Pump:

- Power Systems reported 414 gpm
- SID meter read 389 gpm

Well #2 Pump:

- Power Systems reported 307 gpm
- SID meter at this site is inoperable

Both pumps are rated at 350 gpm capacity.

Aquifer Capacity & Sustainability: *"RNVWD needs to provide an action plan to further study and monitor the aquifer perhaps in partnership with others . . . to continue to evaluate its storage capacity and sustainable yield"*

Ongoing evaluation of sustainable pumpage from the basal zone of the Tehama Formation should be undertaken in order to monitor groundwater levels and prevent the aquifer from being over drafted. Ongoing monitoring is important to determine sustainable groundwater yields based on the recharge rate of the aquifer[see page 28]. Dtermination 6.3.5 states that "Ongoing evaluation of sustainable pumpage should be undertaken in order to monitor groundwater levels and avoid over-drafting the aquifer." Recommendation 12 was added for the District to develop an action plan in partnership with others [see page 52].

Section 6.4 Financial Ability of Agency to Provide Services

Capital Improvements: *"A 10-year replacement cycle of equipment and pipes seems overly conservative"*

In 2016, the District adopted a 10 Year Capital Improvement Plan [see page 33] that was updated in 2018. The CIP includes arsenic treatment, distribution system improvements, back-up equipment, surface improvements for District sites, and solar power generation. Maintenance activities involve tank inspections, valve exercising, hydrant maintenance, system flushing, map updating, and recurring funds for the replacement of failed instrumentation and control equipment. The CIP includes 12 projects and seven (7) recurring maintenance activities. Some projects are carried over from previous years and others are new projects.

Replacement of equipment and facilities is based on industry standard life expectancy. A condition assessment report reviews the existing condition of assets (pipelines, meters, pumps, valves, services, etc.) and conducts tests to determine the expected remaining useful lives of the assets. Many factors affect useful lives including the reactiveness of the soil to corrode metals, pressure and pressure transients, external loads, and the stability of the soils in the area [see June 12, 2018 staff report].

Structures and improvements and equipment are depreciated over the useful lifes in accordance with District policy: Equipment 3-7 years, Infrastructure 30 years.

Other General Comments

Allowances for Accessory Dwelling Units: *"allowances for Accessory Dwelling Units (ADUs) and second units must be considered in the future demand considerations"*

Noted and incorporated [see page 40]

Parcels 5 Acres and Larger: *due to much of the district's lands being in water scarce areas, recent subdivision maps have required that any new parcel (regardless of size or zoning) obtain a connection to the district's water supply"*

Noted and incorporated [see page 21]

Long Term Water Infrastructure Plan: *"RNVWD should move forward in revising and updating their Engineering Report and identify subsequent/redundant supplies to improve reliability"*

Noted and incorporated [see page 21]