



COUNTY OF SONOMA

575 ADMINISTRATION
DRIVE, ROOM 102A
SANTA ROSA, CA 95403

SUMMARY REPORT

Agenda Date: 10/8/2024

To: Sonoma County Board of Supervisors
Department or Agency Name(s): County Administrator's Office
Staff Name and Phone Number: Michael Makdisi 565-3747
Vote Requirement: Informational Only
Supervisorial District(s): Countywide

Title:

Countywide Septic System Mapping Study and Analysis Report and Presentation

Recommended Action:

Receive report and presentation discussing the results from the septic system mapping study and analysis.

Executive Summary:

At the direction of this Board in 2021, County staff conducted a septic system mapping study and analysis with the assistance of a hired consultant. With the anticipation of more stringent septic system standards, this study aimed to better understand the septic system landscape and to identify potential ways to support community wastewater needs through management and governance as well as through technology and infrastructure. With over 36,000 septic systems likely in use throughout the County, this study identified where they are concentrated and suggests how we might approach them at a community scale. This work resulted in an analysis report, an interactive web-based map and a hub site that provides access to resources related to septic systems.

Discussion:

Background:

Many people throughout Sonoma County rely on onsite wastewater treatment systems (OWTS), commonly known as septic systems. However, the extent, density and distribution of those systems are not as well understood. In recent years septic system policies and standards have been changing. This includes the creation of the State OWTS Policy in 2012 and its revision in 2023, the 2024 revision of the County's OWTS Manual, as well as requirements that stem from existing and anticipated bacteria and pathogen Total Maximum Daily Loads (TMDLs) affecting Sonoma County waters. The OWTS Mapping Study and Analysis brings to light data intended to increase our understanding about septic systems and wastewater more generally throughout Sonoma County. It also provides insight into the challenges with septic system management and governance and presents opportunities for community level action.

This study follows Board direction. Specifically, in 2021 this Board allocated \$250,000 for the development of a "high-level mapping study and analysis to identify areas within Sonoma County with low, moderate and high densities of septic infrastructure, where that infrastructure is located in relation to new or foreseeable Total Maximum Daily Load Requirements imposed by the State Water Quality Control Board, and where if geographically, politically and economically feasible, existing or new special service district or wastewater

management district boundaries could be created or modified to allow for the management and support of community wastewater needs, including but not limited to, sewer conveyance and treatment, individual and shared septic systems, and alternative wastewater treatment technologies.”

Execution of the work:

Soon after this Board’s approval, efforts began to determine exactly how to accomplish the Board’s request and to determine which entity would perform the work. In late 2021, the prior Ombudsperson’s position expired, and the work stalled. After the new Ombudsman began about a year later, in August of 2022, the work began again. The Ombudsman consulted county departments, partner agencies, and public residents. He developed a plan and solicited consultant proposals in mid-2023. In August 2023 the County hired Arup US, Inc. to create a map and perform the analysis. Working closely with County Staff, including the Ombudsman, the Information Services Department, and Permit Sonoma, Arup’s work continued through July of 2024.

Deliverables:

This project resulted in a County-wide septic system analysis report, an interactive, web-based, graphical information system (GIS) map, and a [hub website < https://owts-mapping-tool-hub-1-sonomacounty.hub.arcgis.com/>](https://owts-mapping-tool-hub-1-sonomacounty.hub.arcgis.com/), through which both the report and map can be accessed. The map was originally intended to inform the analysis report. The map includes many data layers, including septic system and wastewater infrastructure, governance and jurisdictional boundaries, population and census data, land use, vegetation, elevation, groundwater basins and watersheds, soil data, roads and more. This map was also developed to serve the County of Sonoma and its partner agencies in their ongoing work related to septic systems and wastewater.

As the project took shape, the County was able to add the development of a public facing map and a hub site through the assistance of Arup. The public facing map will enable interested residents and communities to look at the data for themselves. From the hub site, anyone can access the analysis report as well as the interactive GIS map. This hub site also contains additional resources related to septic systems, such as links to Permit Sonoma or the Water Board, septic standards and policies, as well as information about community efforts.

Results of the analysis:

Of primary importance, this project produced an analysis report about septic systems in Sonoma County. It should be noted that the absence of readily available data prevented a comparison of functional versus failing systems. Instead, this study examined the presence and densities of septic systems in the county regardless of the condition of the septic system. It also took into consideration both governance and technical considerations and broke down the data in a way that paints the picture of the landscape respecting septic system infrastructure. It also provides greater clarity about where management and infrastructure assistance could provide significant impact.

One finding of this study is that approximately 36,000 parcels in Sonoma County likely utilize septic systems. 12,500 of those were permitted since 1991, and 23,500 are suspected to either have a permit that predates

1991 or have a system without a permit. The approximate number of these systems separated by supervisorial district are as follows: over 7,000 in District 1, over 5,000 in District 2, 500-1,000 in District 3, over 5,000 in District 4 and over 17,000 in District 5.

Of the approximate 36,000 systems, 15,230 exist on parcels considered medium density, or between 1.25-10 acres, and 15,327 exist on parcels considered high-density, or less than 1.25 acres. Most of the systems on high-density parcels are single family residences (14,974). As a result of the current maximum density threshold in the State's policy on septic systems, 9,877 of the approximate 36,000 parcels have known or suspected septic systems that would not be permitted today if proposed as new construction.

Opportunities:

After laying the landscape county-wide, the report then discusses potential opportunities to provide infrastructure and/or governance support. Using the GIS mapping tool, Arup examined the parcels that were subject to the more stringent septic standards resulting from the existing or foreseeable TMDL related requirements. They layered and analyzed the locations and densities of those septic systems with various jurisdictional boundaries, such as sanitation districts, and then clustered them together in a way that potential technical alternatives could correspond with potential governance alternatives on a community scale. This resulted in 47 community clusters - 39 in the Russian River watershed, 4 in the Petaluma River watershed, and 4 in the Sonoma Creek watershed.

Nine of the 47 community clusters were then prioritized based on factors such as parcel density, greater potential for alternative technical interventions, and potential disadvantaged community status. These nine span all five supervisorial districts and can be used as a starting point for more granular examinations of feasible alternatives.

After evaluating the nine clusters, the report suggests potential next steps for each. This includes continued use of septic, use of shared septic systems and connection to sewer. This also includes the potential to create new management entities or merge with existing governance and management entities depending on the proximity to the cluster. Because this is a high-level analysis, the results are intended to be a starting point for more granular examinations of the potential alternatives. Additional work will be needed to determine the feasibility of any one option. This will require public engagement to better understand each community's needs, as well as closer reviews of the geographies and technical considerations. Such further work may also lead to adjusting the boundaries of the identified community clusters or even creating new clusters.

Next steps and deliverable utilization:

First, the report itself lays out many opportunities for improving management and governance for parcels with septic systems. This Board could decide to pursue more granular studies and projects to address infrastructure or governance and management in specific areas within the county, especially in areas subject to the most stringent septic system standards. Similarly, individual communities can use this to determine for themselves whether they think the identified alternatives are worth pursuing, and then discuss their thoughts with their respective representatives. The interactive map can be used to further adjust community clusters or identify completely new areas based on different parameters. Combined, the map and the report provide data, information and tools that the Board can use to respond to their constituency and make more informed

decisions related to septic system and wastewater infrastructure.

Second, the hub site and public facing map can be accessed directly by residents to better understand their situations. The hub site provides easy to access information and resources about septic systems. The interactive map provides residents a way to identify their own parcel and consider possible options for themselves and for their communities. Depending on interest and use, the county could add story lines for specific projects or topics, or develop more focused and streamlined maps that highlight particular facts of interest or serve a specific function. The hub site could also follow changes in septic system related policies or follow local community septic system related projects.

Third, the interactive map is useful for a variety of ongoing and future work. Agencies such as Permit Sonoma can utilize it immediately to better visualize septic systems throughout the county. Although the scope of this project included a point-in-time map without any ongoing updates, the County could decide to hire a contractor or direct staff to enhance the map, add additional functionality, or provide ongoing or periodic updates. For instance, additional data about types or age of systems could be added, or links could be integrated to more easily access the County's databases to obtain additional details.

The map will also be useful for County departments and partner agencies. For example, the map has already assisted in drawing the study area boundary in Sonoma Water's ongoing West County Water Quality and Recycled Water Feasibility Study. The data in the map and the report also present baseline data from which other projects and grants can build. The County has also been awarded a planning grant from the Water Quality Control Board to examine contributions from four key non-point sources of pathogen pollution in the Russian River, including septic systems, and to conduct public engagement to identify potential solutions; this map will support and advance that work. Finally, the map will be useful to the Clean Water Ombudsman. It will help focus and direct outreach efforts, enable the creation of topic-based maps for specific communities, and provide easy access to information when individuals call to discuss their situation.

Strategic Plan:

NA

Racial Equity:

Was this item identified as an opportunity to apply the Racial Equity Toolkit?

No

Prior Board Actions:

Aug. 1, 2023: Authorized execution of service contract for creation of an interactive map and analysis report.
June 15, 2021: Approved Budget that included funds for septic system infrastructure mapping.

FISCAL SUMMARY

Expenditures	FY23-24 Adopted	FY24-25 Projected	FY25-26 Projected
Budgeted Expenses			
Additional Appropriation Requested			

Agenda Date: 10/8/2024

Total Expenditures			
Funding Sources			
General Fund/WA GF			
State/Federal			
Fees/Other			
Use of Fund Balance			
General Fund Contingencies			
Total Sources			

Narrative Explanation of Fiscal Impacts:

No fiscal impact.

Narrative Explanation of Staffing Impacts (If Required):

NA

Attachments:

OWTS Mapping Study Report
Presentation_OWTS Mapping Study

Related Items "On File" with the Clerk of the Board:

NA