West County Water Quality and Recycled Water Supply Feasibility Study with Stakeholder Committee Project

Frequently Asked Questions

What is the purpose of the Project? The purpose of the West County Water Quality and Recycled Water Supply Study with Stakeholder Committee Project (Project) is to better understand community issues and concerns regarding sewage collection and treatment systems in western Sonoma County, with the goal of creating greater efficiency and leading to more standardized wastewater treatment throughout the project area. The Project has two components, as follows:

1. The first stage of the project involved the development of a Feasibility Study. This study provides a technical assessment of four existing wastewater collection and treatment systems and options for either combining the systems or exporting sewage to larger treatment plants outside of west county. The Feasibility Study also analyzes opportunities for providing sewer service to properties that currently rely on septic or other onsite treatment systems.

2. The second stage of the project is a Project Advancement Report that provides a high-level analysis of how feasible options can be taken to the next stage. The report considers governance and financial opportunities.

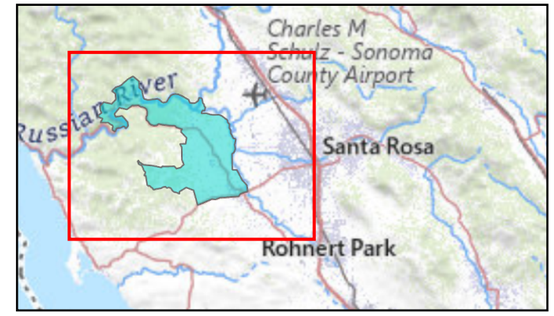
Both the Feasibility Study and the Project Advancement Report rely on a stakeholder committee (created following community interviews conducted by a facilitator from Sacramento State University's College of Continuing Education) to share community concerns and provide feedback on regionalization options, connecting unsewered communities to sewer systems, governance and finance.

What area is being studied? The project is focused on the west Sonoma County areas served by the Forestville Water District, Graton Community Services District, Occidental Community Services District and the Russian River County Sanitation District, and unsewered communities near these systems. (The project area is shown on the map on the following page.)

Why is the study focused only on the technical aspects of west county regionalization? The project originated as an Enhanced Compliance Action (ECA) issued by the North Coast Regional Water Quality Control Board in response to 2019 wastewater discharges by the Russian River County Sanitation District. As described above, the first stage of the project – as required by the ECA – is a technical feasibility study that assesses

Windsor
WWTP
Rio Nido
Hacienda
Hollydale
Guerneville
River Rd
RUSSIAN RIVER
MARK WEST CREEK
WWTP
Hwy 116 N
Forestville
WWTP
Monte Rio
Hwy 116 N
WWTP
SANTA ROSA FLOOD CONTROL CHANL
Guerneville Rd
Fulton Rd
Santa Rosa
Graton
Hwy 12 W
Camp Meeker
LAGUNA DE SANTA ROSA
Sebastopol Rd
Occidental
WWTP
Sebastopol
Bohemian Hwy
SALMON CREEK
WWTP
Hwy 116 S
LAGUNA DE SANTA ROSA
Hwy 1
SALMON CREEK
RESERVOIR

- Study Area
- Monte Rio & Villa Grande Study Area
- Russian River CSD Service Area
- Occidental CSD Service Area
- Forestville WD Service Area
- Graton CSD Service Area
- WWTP — Wastewater Treatement Plant
- Unsewered Communities of Interest



Project Boundaries_Aerial: N:\Clients\798 Russian River County Sanitation District\50-24-05 Water Quality RWSS\GIS\RR CSD Water Quality RWSS.aprx - rsbakourfar - 10/29/2025

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Prepared for:
Russian River County Sanitation District
Water Quality and Recycled Water Supply Feasibility Study
Sonoma Water

Study Area
DRAFT
Figure 1-1

the current conditions of wastewater treatment systems, planned or needed system improvements, and whether and how these systems might be combined.

The technical analysis is foundational in determining (at a high-level) the relative costs, reliability, operational issues and environmental impacts of regionalization options.

The second stage of the project, the Project Advancement Report, considers non-technical questions, including how regional projects could be formed, governed and financed.

What does Feasibility Study recommend? The Feasibility Study concluded that the alternatives that treated wastewater locally (rather than exporting wastewater to large treatment plants in Windsor and Santa Rosa)[1] were the most cost-effective regionalization strategies (see Table 8-58, below, from Chapter 8 of the study for the 20-year life cycle costs of each alternative). These alternatives are described below:

> *Alternative 1a* – West county is served by two sewer treatment hubs – one located at the Russian River County Sanitation District (RRCSD) and the second at a combined Forestville Water District (FWD)/Graton Community Sewer District (GCSD) (which would also include the Occidental County Sanitation District) treatment and reuse facility. In addition to serving existing customers, the treatment hubs could also provide treatment for nearby unsewered community clusters.
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> In Alternative 1a, the FWD/GCSD would end its current practice of discharging recycled water during the winter into tributaries of the Russian River and recycle its water year-round through expanded storage and irrigation and possible use at local quarries (aka "zero discharge"). Cost: Its 20-year lifecycle cost (cost of constructing and operating over 20 years) is approximately $796 million, with RRCSD's share $15 million, FWD/GCSD/OCSD's share $75 million, and unsewered communities' share $626 million.
>
> *Alternative 1c* – All west county sewage would be treated at a combined new wastewater treatment plant constructed at the FWD site. Wastewater generated by unsewered community clusters could also be treated at the plant.
>
> In Alternative 1c, a new treatment plant would be constructed at the FWD site to provide the level of treatment required for continued winter-season discharge. All other treatment plants (GCSD, RRCSD, OCSD) would essentially convert to storage and lift station facilities.

[1] Alternatives 2a, 2b and 3b were carried forward for initial evaluation but these options, which include transporting wastewater to either the Town of Windsors treatment plant or the Laguna treatment plant operated by the City of Santa Rosa were deemed too expensive and were not recommended by the consultants for further analysis.

This alternative ranked the highest in seven qualitative criteria (ie, reliability, regulatory compliance) environmental) scoring completed by both the Technical and Stakeholder committees. Cost: The 20-year lifecycle cost of this alternative is $804 million, with FWD/GCSD's share $48 million, RRCSD's share $196 million (reflecting the costs of closing its treatment plant, building pipelines and pump stations to convey wastewater to the FWD/GCSD and contributing to the cost of constructing and operating the new wastewater treatment plant at the FWD site) and unsewered communities' share $561 million.

Modified Alternative 1a – Modified Alternative 1a is identical to Alternative 1a, with one exception: The FWD/GCSD treatment plant would be upgraded to include biological nutrient removal in order to continue its current practice of discharging recycled water into tributaries of the Russian River during winter months.

This alternative was not specifically evaluated in the Feasibility Study. However, it was identified as a possible strategy that integrates some of the financial benefits provided under Alternative 1a with some of the qualitative scoring criteria benefits provided under Alternative 1c. A preliminary assessment of the Modified Alternative 1a suggests that the total project costs would be lower under a Modified Alternative 1a than the costs that were identified for Alternatives 1a and 1c in the Feasibility Study.

Table 8-58. Summary of Estimated Lifecycle Costs, $ million

Estimated Cost Component	Alternative 1a	Alternative 1c	Alternative 2a	Alternative 2b	Alternative 3b
Capital Cost	716	806	845	850	892
RRCSD Share	*15*	*196*	*209*	*210*	*214*
FWD/GSCD Share	*75*	*48*	*64*	*55*	*72*
Unsewered Share	*626*	*561*	*571*	*585*	*605*
20-Year, Present-Worth O&M (OpEx)	80	-2	118	143	102
Estimated Total 20-Year Lifecyle Cost	**796**	**804**	**963**	**983**	**994**
Estimated Total 20-Year Lifecycle Cost with Returning Recycled Water to West County	*not applicable (n/a)*	*n/a*	**1,021**	**1,001**	*n/a*

What does the Modified Alternative 1a approach include and why was it proposed?

Modified Alterative 1a includes the following elements:

- *Continue to treat Guerneville's wastewater at the Russian River County Sanitation District (RRCSD) treatment plant:* This strategy provides, by far, the lowest overall cost to the RRCSD customers and nearby community clusters including Monte Rio/Villa Grande. (A comparison of costs to RRCSD customers

under Alternative 1a and Alternative 1c shows that the difference in cost is $180 million.)

- *Treat wastewater produced by customers of the FWD and GCSD (which would also include Occidental County Sanitation District) at a new treatment facility constructed at the FWD site that provides the level of treatment required for continued winter-season discharge to the Russian River and/or its tributaries:* This strategy provides a similar cost to the FWD/GCSD/OCSD customers as Alternative 1a and Alternative 1c, but is easier to implement and provides many of the qualitative criteria scoring benefits realized under Alternative 1c.
- *Similar to Alternative 1a, unsewered communities located near the RRCSD treatment plant could connect to the RRCSD treatment facility.* Because the RRCSD treatment plant has the capacity to accept the flows from these unsewered communities with planned investments to address condition-related and capacity-related needed improvements, without a major expansion, this strategy provides significantly lower overall project costs to these communities compared to connecting to a treatment facility located further away.
- *Similar to Alternative 1a, the remaining unsewered communities could connect to the new FWD/GCSD treatment facility:* Because a large, regional pipeline is not included in Alternatives 1a and Modified 1a, these alternatives are not the most cost-effective approach for the unsewered communities that would connect to the FWD/GCSD system. For these communities, the cost benefits they would realize through the construction of new regional sewer system (under Alternative 1c) that is shared with RRCSD and the unsewered communities surrounding RRCSD would not occur. This is because in Alternative 1c, RRCSD would be required to construct a large pipeline to deliver its wastewater to the new regional treatment plant in FWD/GCSD. The unsewered communities located between the RRCSD service area and FWD/GCSD could connect to this pipeline. These unsewered communities will likely require financial support for extending the sewer system to serve them.

A discussion of modified Alternative 1a concept was presented in the November 2025 draft of the Feasibility Study Report and was also discussed with the Stakeholders in the October 2025 and January 2026 workshops. For improved clarity and to facilitate ongoing discussions around the approach with stakeholders, the concept was specifically labeled as a "Modified Alternative 1a" in the Revised Draft Feasibility Study Report (March 2026).

The Modified Alternative 1a strategy integrates some of the cost benefits provided by Alternative 1a with some of the qualitative scoring benefits provided by Alternative 1c. Therefore, it is likely that a Modified Alternative 1a approach would result in an overall lowest cost project that is also feasible to implement and provides several benefits to the West County community. However, because the value of the Modified Alternative 1a was not identified until near the end of the Feasibility Study phase of the project, there was not adequate time or resources available to fully incorporate an analysis of this concept into the Feasibility Study Report.

In light of the recent spill at the RRCSD WWTP, how can the study recommend sending more wastewater to the district? The RRCSD has committed to addressing the inflow and infiltration (I&I) problems in its collection system and implementing capacity-related projects at the treatment plant before adding the unsewered communities identified in the study. This statement has been incorporated in the March 2026 revised draft of the Feasibility Study Report. In addition, RRCSD has hired a consultant to conduct an independent after-action analysis of the January spill to determine why the spill occurred and what changes need to be made to prevent similar incidents. Finally, the RRCSD is in the process of developing its 2045 Master Plan for the Russian River wastewater treatment facility (Master Plan) to ensure the treatment plant and collection system can meet current and future needs while complying with regulatory requirements.

The Feasibility Study states that RRCSD will implement projects identified in the Master Plan and consider adoption of any changes proposed in the independent analysis prior to acceptance of flow from unsewered communities. While these additional projects may increase the overall total project costs under Alternative 1a (or Modified Alternative 1a), the cost to RRCSD and the communities that surround the RRCSD would still be significantly lower than the costs that would be incurred to these communities under Alternative 1c.

The 20-year lifecycle costs of all the feasible alternatives increased significantly in the Revised Draft Feasibility Study that was released in March 2026. Why did the costs go up? The cost increases are attributable to the fact that the technical team based the cost of connecting unsewered community clusters to sewer systems on estimates derived from the Monte Rio/Villa Grande Wastewater Solutions Pilot Project study. The updated costs were provided to the technical team in January 2026. The cost per Equivalent Standard Dwelling (the amount of wastewater estimated to be generated by a single-family dwelling annually) were substantially higher than the costs identified in an earlier version of the Monte Rio/Villa Grande study, which led the technical team to recalculate the costs of adding unsewered community clusters in the Revised Draft Feasibility Study.

The Estimated Capital Cost per ESD for unsewered communities increased in the Revised Draft Feasibility Study that was released in March 2026. Why did these costs go up? Table 8-59, below, shows the costs for unsewered communities. In developing the Revised Draft Feasibility Study to address Stakeholder comments, the technical team identified an error in the calculation of capital costs per ESD, which was corrected in the Revised Draft Feasibility Study.

Table 8-59. Estimated Capital Cost per ESD for Unsewered Communities, $ million

ID	Name	Number of ESDs	Alternative 1a[a]	Alternative 1c	Alternative 2a[b]	Alternative 2b[b]	Alternative 3b[b] [c]
1	Guerneville South of River	55	0.187	0.206	0.211	0.215	0.212
2	Guerneville North of River	58	0.214	0.239	0.244	0.247	0.246
3	Northwood	196	0.179	0.201	0.205	0.207	0.206
4	Hwy 116 East of Guerneville	119	0.259	0.184	0.185	0.188	0.187
5	Summerhome Park Road	103	0.269	0.217	0.217	0.220	0.219
6	Hacienda and Hollydale	443	0.239	0.186	0.186	0.190	0.188
7	River Road North of Forestville	454	0.208	0.163	0.161	0.166	0.163
8	Forestville	173	0.213	0.169	0.174	0.172	0.213
9	Hwy 116 between Forestville and Graton	161	0.204	0.157	0.162	0.156	0.207
10	Graton West	70	0.236	0.191	0.201	0.195	0.235
11	Camp Meeker	376	0.211	0.167	0.178	0.172	0.213
12	Monte Rio/Villa Grande	943	0.153	0.175	0.179	0.181	0.180
Total ESDs		**3,151**					
ESD-Weighted Average CapEx per ESD			**0.200**	**0.180**	**0.180**[a]	**0.180**[a]	**0.190**

(a) Blue shaded cells indicate clusters that are assumed to connect to the FWD/GCSD system under Alternative 1a.
(b) Purple shaded cells indicate clusters that are assumed to connect to an export pipeline for treatment at a regional facility.
(c) Green shaded cells indicate clusters that are assumed to connect to the FWD/GCSD system under Alternative 3b.
(d) Under Alternatives 2a and 2b, weighted average is the same with or without accounting for recycled water return.

What is included in the estimated project costs? The engineering consultant, West Yost Associates, estimated project costs with the goal of providing apple-to-apple comparisons between the various options. The estimates provide **high-level relative** cost comparisons between the options, as one additional piece of information to help decision-makers better compare and understand the alternatives.

The basis for cost estimates is detailed in Appendix A of the study; operations and maintenance costs (O&M) are described for each feasible alternative in Appendix H; and capital costs are detailed in Appendix G. Estimates were prepared using the construction costs of similar unit processes and from vendor quotes for major equipment. The cost estimates presented for the project are Association of Advancement of Cost Engineering Class 5 planning estimates, for Study or Feasibility purposes. Class 5 estimates are based on a 0 to 2 percent of project definition with a targeted -50 percent to +100 percent accuracy (i.e. actual costs that may range between 50% lower to 100% higher than estimated).

The construction costs represent an engineer's preliminary opinion of probable construction cost (OPCC). The OPCC represents the sum of the following:

- **Component costs:** The costs of items like pipeline construction, new treatment equipment, storage ponds, etc.
- **Distributed costs:** Plant paving, grading, yard piping, miscellaneous mechanical and piping, electrical, instrumentation and controls.
- **Estimating contingency:** Because of the limitations of cost estimates based on planning information, the cost estimates include a 30 percent contingency to allow for items not identified in the conceptual development, unanticipated improvements, variation in final quantities, adverse construction conditions, and other unforeseeable difficulties that will increase the final construction cost.

Could these cost estimates change?

Yes. If and when an option advances, costs will be recalculated based on the specific design and updated information and escalated accordingly to the anticipated midpoint of construction.

The three alternatives that are recommended to advance are estimated to cost around $800 million to construct, operate and maintain over a 20-year lifecycle. Who will pay for this?

The Project Advancement Report will provide a high-level consideration of options for financing the feasible alternatives. Typical sources for wastewater projects include grants from federal Clean Water Act, grants and loans from the State Revolving Fund, grants through state water bonds, bonds, and charges to ratepayers and new sewer connections.

Would abandoning my onsite sewage treatment (for example, a septic system) and hooking up to a sewer system trigger a partial reassessment of my property?

It depends. The assessor's office considers multiple factors when determining whether to partially reassess property that has transitioned from septic to sewer. Questions that are considered include: Will this change replace an existing septic system? Was the change made because the septic system failed? Does the switch provide growth opportunities (for example, a two-bedroom home that can now be expanded to four bedrooms because the property is connected to sewer)?

Because each property is unique, residents are encourage to contact the Sonoma County Assessor's Office at (707) 565-1888 or assessor@sonomacounty.gov when considering transitioning to sewer.

It looks like the capital costs of the project are between $160,000 to $270,000 per equivalent single dwelling (the wastewater produced by a single-family home). Would that be my cost to connect to a sewer system?

Table 8-59 (above) presents estimated average costs per ESD for each of the clusters, analyzed in 2026

dollars. These costs are based on feasibility-level design. The actual costs to a homeowner would be refined at a future date during design and implementation for each cluster. The ultimate costs to an individual homeowner will account for potential cost escalation for the cluster's sewage collection system at the time of construction, specific parcel details, and how much of the system is funded by grants (which would reduce costs to residents). Currently, significant funding is available through a state program to encourage residents to transition from septic to sewer.

What would the cost be for a homeowner joining a sewer system? The actual charge to someone connecting to a sewer system has two components: A connection fee that covers the new customer's fair share of using capacity in an existing treatment or conveyance system, plus the new customer's share of building any new treatment or conveyance facilities that are required.

The actual costs to a homeowner would be refined at a future date during design and implementation for each cluster. The ultimate costs to an individual homeowner will account for potential cost escalation for the cluster's sewage collection system at the time of construction, specific parcel details, and how much of the system is grant funded (which would reduce the costs to residents). Currently, significant funding is available through a state program to encourage residents to transition from septic to sewer.

The study estimates annual operating costs per ESD for each of the alternatives. Is this how much my sewer bill would be under a regional system? No. The operating costs in the study are based on a feasibility-level analysis to provide an order-of-magnitude average annual operating cost for each alternative. These costs include estimated operating costs only and do not include any costs related to possible debt service or other related administrative costs. These estimated annual operating costs should not be interpreted as the annual rates paid by a sanitation district customer.

Why are the 'export' options so much more expensive than the local options? Exporting wastewater to the Laguna treatment plant or the Windsor treatment plant requires the construction of long pipelines which include multiple river crossings. The "exporting" districts would also be required to pay fees to connect to the larger treatment plants, pay for any needed upgrades at the receiving plants and absorb the slightly higher operating costs.

For these reasons, Alternative 3b (exporting RRCSD sewage to the Windsor treatment plant while combining treatment for FWD, GCSD and OCSD at one plant) is the highest-cost feasible alternative at more than $1 billion.

Will recycled water continue to be discharged into the Russian River or its tributaries? Yes. Under Alternative 1a, the approach for the FWD/GCSD treatment plants

would end the current practice of winter discharge of treated wastewater from the FWD/GCSD treatment facilities into tributaries of the Russian River. This approach was advanced based on early interest from the FWD/GCSD and requires significant construction of storage and expanded irrigation area. However, even under this approach, RRCSD would continue discharge to the Russian River.

The study analyzed the challenges and opportunities for zero-discharge for the FWD/GCSD systems. One challenge of this approach is constructing enough storage to hold recycled water during the winter. A second challenge is that the low-water-use vineyards near the treatment plants provide limited opportunities for recycled water use. While preliminary conversations with nearby quarries suggest the possibility of recycled water storage and use, this option does not provide significant demands. Due to these hurdles for implementation, Alternative 1a had the lowest qualitative criteria ranking. This resulted in identification of the Modified Alternative 1a strategy, which would include continued discharge to Russian River and/or its tributaries.