Sonoma Water

Sonoma Water
Wastewater Capacity Charges Study

Final Report
April 21, 2025

BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS

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April 21, 2025

Sonoma Water
Office of Sonoma County Counsel
575 Administration Drive, Rm. 105A
Santa Rosa, CA 95403

Re: Wastewater Capacity Charge Study

Bartle Wells Associates (BWA) is pleased to submit the attached *Wastewater Capacity Charge Study* for Sonoma Water (Agency). The study develops updated capacity charges designed to equitably recover the costs of wastewater system infrastructure and assets benefiting new development for each of the Agency's eight Zones and Districts. Key objectives of the study include developing new capacity charges that recover the costs of capacity in the Agency's wastewater system infrastructure, are fair and equitable to both existing customers and new connections, are based on industry standard methodology, and comply with all legal requirements.

BWA recommends that the Agency adjust capacity charges annually based on the change in the Engineering News-Record Construction Cost Index or other appropriate measure to account for construction cost inflation, with allowance for a multi-year adjustment if an annual update is ever deferred.

We enjoyed working with the Agency on this assignment and appreciate the input and assistance received from Agency staff during development of the updated charges. Please contact us anytime if you have questions about the recommendations presented in the report or other related issues.

Sincerely,

BARTLE WELLS ASSOCIATES

Erik Helgeson
Principal/Vice-President

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ES. Executive Summary

Background & Objectives

In 1995 Sonoma Water (Agency) assumed responsibility from the County of Sonoma (County) for managing eight sanitation zones and districts which provide wastewater collection and treatment, and recycled water distribution and disposal services for approximately 22,000 residences and businesses. The four sanitation zones (SZ) are Airport/Larkfield/Wikiup, Geyserville, Penngrove, and Sea Ranch. The Sonoma County Board of Supervisors acts as Sonoma Water's Board of Directors. The four sanitation districts (SD) are Occidental, Russian River, Sonoma Valley, and South Park County and are independent special districts with their own Board of Directors. The Agency levies capacity charges on new or expanded connections to the wastewater system. These charges are designed to recover the costs of capacity in system infrastructure benefiting new development.

In 2024, the Agency retained Bartle Wells Associates (BWA) to perform an independent evaluation of the City's existing capacity charges and develop updated charges designed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the Agency's wastewater system. The recommendations presented in this report were developed with input from the Agency's project team and represent a comprehensive update based on the latest information available. The proposed charges include some structure adjustments to align charges with industry standard practices and methodologies.

Key objectives of the study include developing updated wastewater capacity charges that:

- Recover the current costs of wastewater system infrastructure and assets that benefit new development to help ensure that growth does not burden existing ratepayers;
- Proportionally recover costs from new connections to the wastewater system based on the capacity needs of each new development;
- Are consistent with industry-standard practices and methodologies;
- Comply with the legal requirements of California Government Code.

Overview of Capacity Charges

Unlike impact fees, capacity charges are one-time capital charges for facilities (existing or new) to accommodate growth.

By statute, capacity charges are charges "for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged."

The purpose of these charges is to make "growth pay for growth," rather than placing the costs of growth on existing ratepayers. In essence, capacity charges ensure equitable funding by placing a "fair share" of the costs for facilities on new customers.

Current Capacity Charges

Current capacity charges are determined by the number of Equivalent Single Family Dwelling Units (ESD's) for proposed connections. Charges for residential and commercial connections vary by type of residence and business and reflect the estimated wastewater flows and strength concentrations for a range of customers. Equivalent Single Family Dwelling Building Unit Tables (Exhibit A's) are available for each zone and district and define wastewater capacity needs for standard wastewater users. Capacity charges for each zone and district are adjusted annually on July 1 of each year based on the most recent change in the Engineering News Record Construction Cost Index (ENR-CCI) for San Francisco. Table ES-1 shows the current capacity charges by zone and district.

Updated Capacity Charges

The updated charges calculated in this report are based on a *System Buy-In Approach* under which new connections "buy in" for their proportionate share of costs (in current dollars) for capacity needed in the Agency's existing wastewater system facilities and assets for each zone and district. A *System Buy-In Approach* is one of the most widely used and accepted methods for calculating capacity charges. Table ES-1 on the following page shows the proposed maximum capacity charges by zone and district. Under government code, the Agency can charge less but cannot exceed the maximum charges calculated. Compared to current charges, the proposed charges reflect higher costs per ESD based on a) the addition of new facilities constructed in recent years to replace aging system infrastructure, and b) construction cost inflation since the prior capacity charges update.

Wastewater system valuations were calculated based on the estimated Replacement Cost New (RCN) and the estimated Replacement Cost New Less Depreciation (RCNLD). In both methodologies, the current value of the system is based on the estimated cost of replacing the system assets in 2024 (in current dollars).

RCN is a reasonable and widely accepted valuation method because the existing rate payers paid full price for existing capacity. The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

RCNLD is also a reasonable, widely accepted, and is the most commonly used valuation method because it takes into account losses in system value caused by aging. This method strikes a balance between the cost paid by existing customers and the value the existing system is providing new development. The RCNLD method simply reduces the current value of the system to only reflect the remaining portion of the useful life of the assets. For example, if an asset is 10 years old and has an estimated useful life of 50 years, the RCN for that asset would be reduced by 20%.

The following table shows the resulting proposed maximum capacity charges by zone and district calculated based on the different valuation methodologies.

Table ES-1 – Current & Maximum Base Year Capacity Charges Options

			Proposed Capacity Charges with Replacement Costs:	
Description	Current Charges	Replacement Cost (Current $)[1]	Replacement Cost New (RCN)[2]	Replacement Cost New Less Depreciation (RCNLD)[3]
Airport/Larkfield/Wikiup	$15,051	$41,046	$36,941	$19,308
Geyserville	4,984	34,603	31,143	8,046
Penngrove	4,984	42,664	38,397	14,390
Sea Ranch	6,230	66,782	60,104	20,232
Occidental County	2,284	23,803	21,423	7,290
Russian River County	5,969	68,341	61,507	15,589
Sonoma Valley County	17,752	55,408	49,867	19,204
South Park County	2,284	13,930	12,537	8,965

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

BWA recommends that the Agency consider adopting the updated capacity charges developed in this report. The updated charges are of proportional benefit to new development and ensure an equitable funding of the Agency's wastewater system by placing the costs of growth on growth rather than placing the cost of growth on existing ratepayers. BWA also recommends charges in future years continue to include annual inflationary adjustments to help keep the Agency's capacity charges aligned with construction cost inflation.

Future Updates for Capacity Charges

BWA also recommends that capacity charges be independently reviewed and/or updated roughly once every five years or when substantial revisions are made to the Agency's capital improvement programs or to future projections of wastewater demand.

Capacity Charge Surveys

As part of our analysis, BWA conducted a survey of the current capacity charges for wastewater systems including the Agency and other regional agencies. Unfortunately, due to time and cost restrictions, the surveys are limited to only providing data in the form of the amount of an agency's current capacity charges. This limited comparison does not account for any of the differences that are highly likely to exist among the agencies included in the survey.

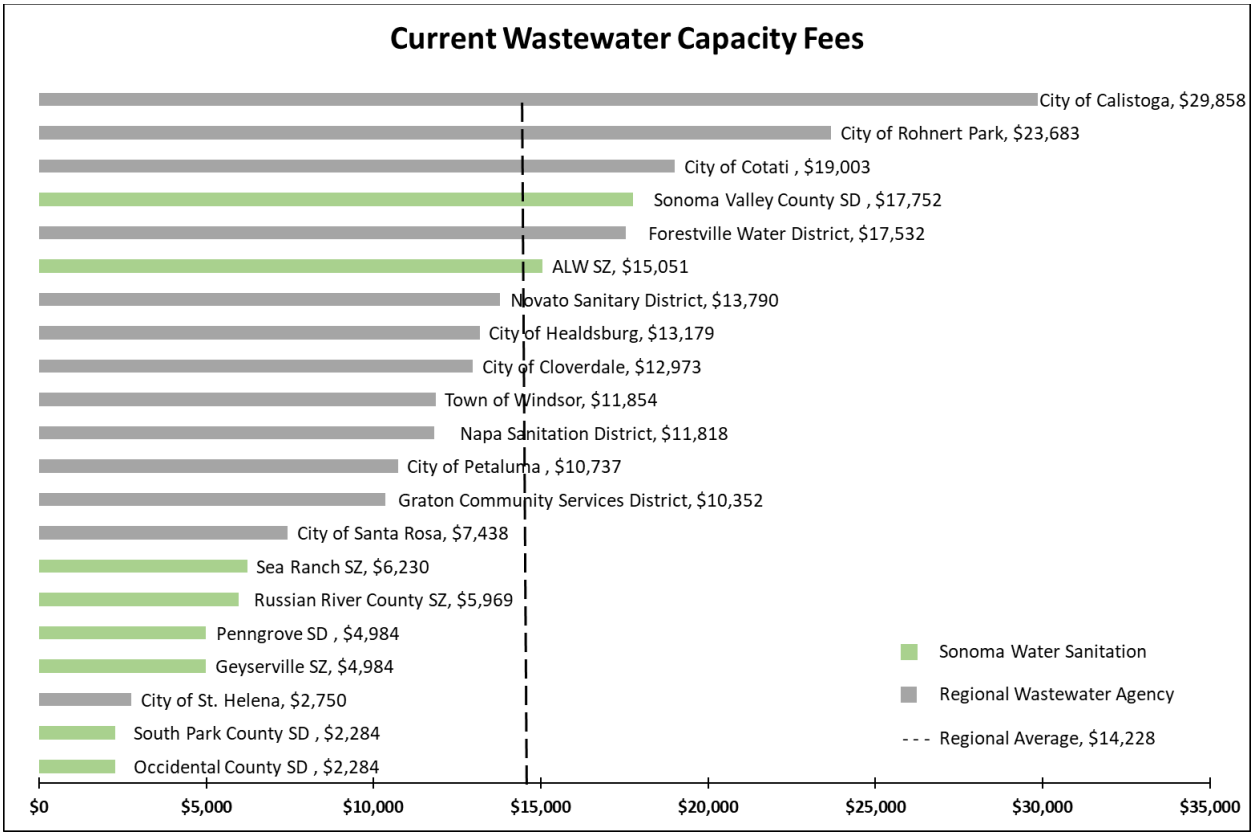
Capacity charges developed for agencies are likely to have following differences:

- Differences in infrastructure needs of wastewater systems across agencies.
- Differences in the infrastructure needs that specifically benefit new developments across an agency's service area.
- Differences in the valuation method selected by an agency to calculate capacity charges.
- Differences in the units used for calculating capacity charges. Sonoma Water currently applies capacity charges based on ESDs. While it is likely that other wastewater agencies use a similar metric, each agency would have developed their own measurement of a unit of capacity based on several factors specific to their wastewater system. These factors vary and may include meter size, flow, BOD, and TSS.

Nevertheless, regional surveys can still be used as an informational tool as long as agencies are mindful of the differences that exist in the development of an agency's capacity charges.

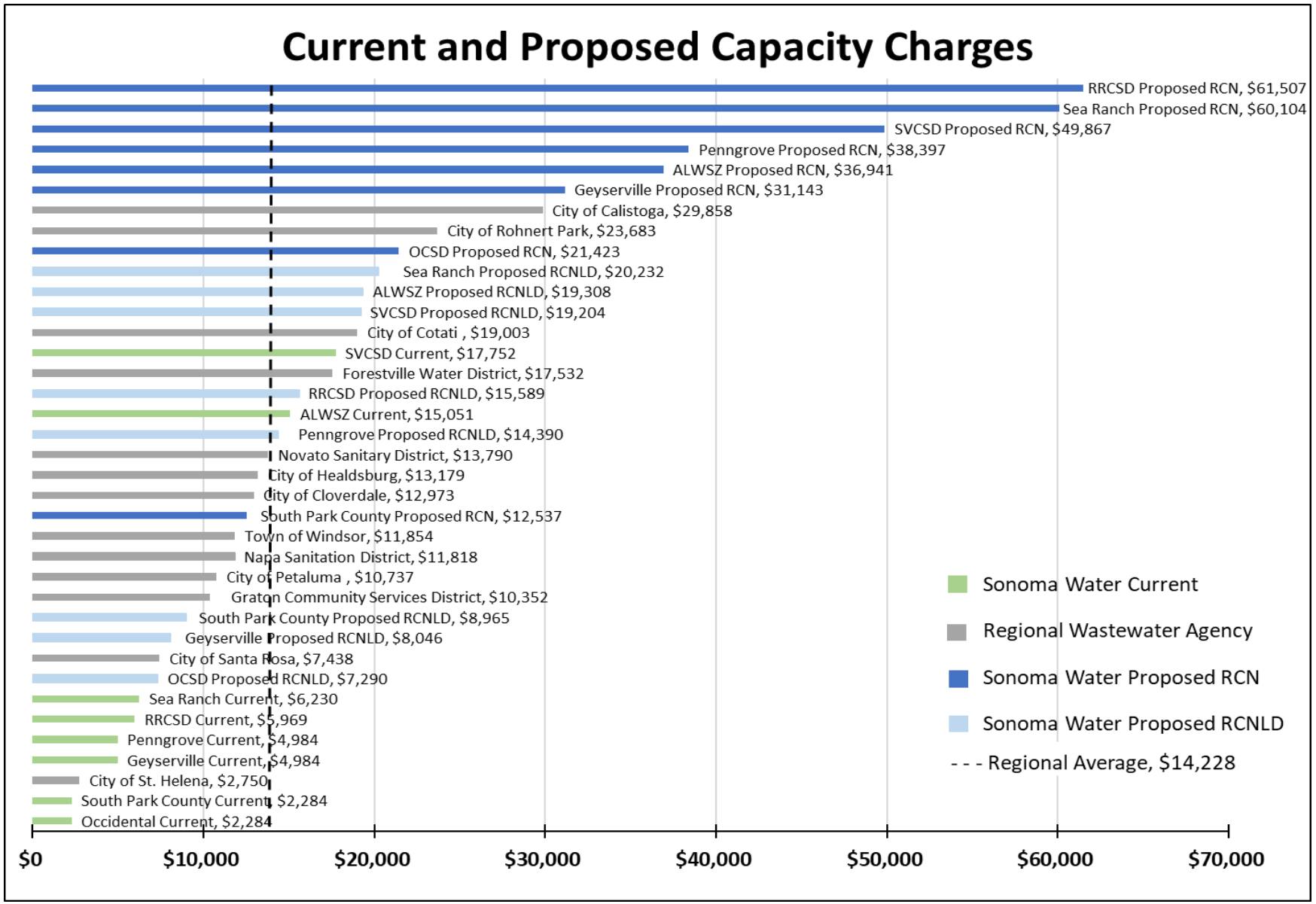
The chart on the following page shows a survey of current wastewater capacity charges for a typical single-family home compared to the current wastewater capacity charges of other regional wastewater systems.

Figure ES-1 – Regional Wastewater Capacity Charges Survey – Current



The following chart shows a survey of proposed wastewater capacity charges for a typical single-family home compared to the current wastewater capacity charges of other regional wastewater systems.

Figure ES-2 – Regional Wastewater Capacity Charges Survey – Proposed



1. Background & Objectives

Background

In 1995 Sonoma Water (Agency) assumed responsibility from the County of Sonoma (County) for managing eight sanitation zones and districts which provide wastewater collection and treatment, and recycled water distribution and disposal services for approximately 22,000 residences and businesses. The four sanitation zones (SZ) are Airport/Larkfield/Wikiup, Geyserville, Penngrove, and Sea Ranch. The Sonoma County Board of Supervisors acts as Sonoma Water's Board of Directors. The four sanitation districts (SD) are Occidental, Russian River, Sonoma Valley, and South Park County and are independent special districts with their own Board of Directors. The Agency levies capacity charges on new or expanded connections to the wastewater system. These charges are designed to recover the costs of capacity in existing and future infrastructure benefiting new development.

Objectives

In 2024, the Agency retained Bartle Wells Associates (BWA) to perform an independent evaluation of the City's existing capacity charges and develop updated charges designed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the Agency's wastewater system.

Key objectives of the study include developing updated wastewater capacity charges that:

- Recover the current costs of wastewater system infrastructure and assets that benefit new development to help ensure that growth does not burden existing ratepayers;
- Proportionally recover costs from new connections to the wastewater system based on the capacity needs of each new development;
- Are consistent with industry-standard practices and methodologies;
- Comply with the legal requirements of California Government Code.

By statute, capacity charges are charges "for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged." Unlike impact fees, capacity charges are one-time capital charges for facilities (existing or new) to accommodate growth. The purpose of these charges is to make "growth pay for growth," rather than placing the costs of growth on existing ratepayers. In essence, capacity charges ensure equitable funding by placing a "fair share" cost for facilities on new customers.

BWA met with Agency staff on various occasions to gather information, discuss findings and alternatives, and receive input. Recommendations were developed with input from Agency staff and reflect a comprehensive update based on the latest information available including:

- The Agency's fixed asset schedule as of June 30, 2024,
- GIS data for pipeline lengths and ages, and
- The Engineering News-Record (ENR) Construction Cost Index (20-Cities Average).

The proposed charges include some structure adjustments to align capacity charges with industry standard practices and methodologies and are developed to reflect the current value and capacity of the Agency's wastewater system.

2. Government Code & Capacity Charge Methodology

Government Code

Water and sewer capacity charges are governed by California Government Code Section 66013. This section of the Code is part of the Mitigation Fee Act which was primarily established by Assembly Bill 1600 (AB 1600) in 1987.

Section 66013 specifically governs water and wastewater capacity charges and defines a "capacity charge" to mean "*a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense related to its use of existing or new public facilities.*"

Section 66013 distinguishes "capacity charges" from "connection fees" which are defined as fees for the physical facilities necessary to make a water or sewer connection, such as costs related to installation of meters and pipelines from a new building to a water or sewer main.

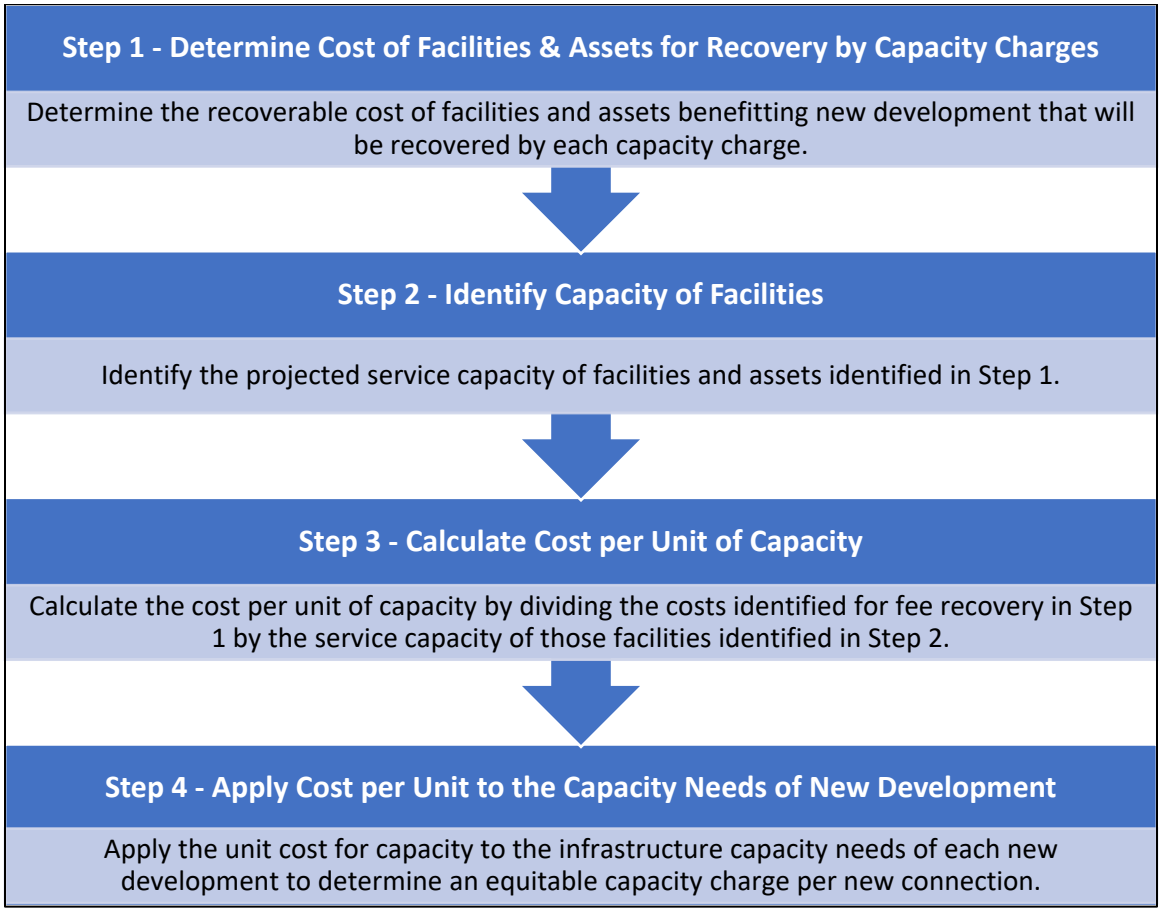
According to the Section 66013, a water or wastewater capacity charge "*shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed*" unless approved by a two-thirds vote. As such, the updated capacity charges calculated in this report represent the maximum charges that the Agency can levy. Section 66013 does not detail any specific methodology for calculating capacity charges.

Other sections of the Government Code that apply to water and wastewater capacity charges include Section 66016, 66022 and 66023. Section 66016 of the Code identifies the procedural requirements for adopting or increasing water and wastewater capacity charges. Section 66022 summarizes the general process by which the charges can be legally challenged. And Section 66023 provides individuals with a process for requesting an audit to determine if a fee or charge is reasonable. The full texts of Sections 66013, 66016 and 66022 are attached in Appendix A.

General Capacity Charge Methodology

The general methodology used to calculate updated wastewater capacity charges in this report is summarized in the following figure.

Figure 1: Wastewater Capacity Charges Methodology



System Buy-In Approach

The updated capacity charges developed for each zone and district calculated in this report are based on a *System Buy-In Approach* under which new connections "buy in" for their proportionate share of costs for capacity needed in the Agency's existing wastewater system facilities and assets. Although agencies have used a wide range of methodologies to calculate capacity charges, the *System Buy-In Approach* is one of the most widely used and accepted methods for calculating capacity charges.

Buy-In capacity charges represent the average cost per unit of capacity in existing facilities and are calculated by dividing a) the cost of existing facilities and assets (in current, inflation-adjusted dollars) by b) the projected capacity that the Agency's sewer facilities will serve. The resulting unit charges reasonably reflect the average cost of capacity in the Agency's wastewater facilities and are subsequently applied to the estimated wastewater demands of new or expanded connections.

System Valuation Methods

There are a number of widely-used methods for valuing infrastructure and assets for determining facility costs that will be recovered by capacity charges. System assets may be valued in a few different ways. The most common methodologies for determining system costs benefitting new development are Original Cost (OC) and Replacement Cost New (RCN).

Original Cost (OC)

Original cost determines system values based on the original price of assets at the time they are added into the system. Many consider this method as the most likely to underestimate actual system value since it does not take into account the change in the value of a dollar over time. Since prices tend to increase over time, the likelihood of a value mismatch increases as the system continues to age, as it may be difficult or impossible for an agency to purchase an asset for the exact costs that that asset was originally purchased for.

Original Costs Less Depreciation (OCLD)

Depreciation of system assets accounts for the amount of time system improvements have been in service. This method takes into consideration the change in wastewater system assets over time and the anticipated losses in system value caused by aging.

Original costs less depreciation determines system values based on the original price of assets at the time they are added into the system less any recorded depreciation. Fully depreciated assets are assigned a value of zero and not always the same as assets that are no longer in service. For example, an asset that has been in-service for ten years may have reached the end of its assigned life but has not lost functionality and is still in-use without immediate plans for replacement. Older systems may have a significant amount of these types of assets and all such instances would be assigned a value of zero.

Replacement Cost New (RCN)

Replacement Cost New determines system costs by bringing the original costs of system assets into today's dollars. Replacement costs new may be determined using estimates such as pricing trends from recent bids provided to an agency for facilities and system improvements or updated system costs developed through professional planning studies. Replacement costs may also be determined using established indices, for example the Consumer Price Index (CPI) which measures the average change over time in the price of a basket of everyday goods and services such as food and transportation, or the Engineering News-Record Construction Cost Index (ENR-CCI) which measures the change in a package of construction materials and labor costs over time. This method takes into consideration the change in the value of a dollar over time, but does not taking into account losses in system value caused by aging such as wear, tear, and decay of facilities and assets. Some agencies include a cost recovery factor when using this method to be both conservative and exclude cost recovery for facilities that may not provide benefit to new wastewater connections.

Replacement Costs New Less Depreciation (RCNLD)

Depreciation of system assets accounts for the amount of time system improvements have been in service. This method takes into consideration the change in wastewater system assets over time and the anticipated losses in system value caused by aging.

Replacement Costs New Less Depreciation brings both the original cost and the accumulated depreciation of assets into today's dollars. RCNLD is reasonably considered by many agencies to be the most equitable valuation method since it is the only method that takes into consideration changes in the value of one dollar over time and factors in the remaining useful life of assets i.e. the current system condition of which new connections will immediately benefit from. At the same time, this method a) may underestimate the actual replacement cost of existing facilities if cost estimates are significantly different to actual construction costs of system improvements, b) does not account for the theoretical cost of interest that future customers would have to repay existing customers for the implicit loan provided by existing customers prefunding facilities for growth, and c) does not account for the cost of maintaining capacity in existing infrastructure for growth. Nevertheless, the RCNLD method remains the most common methodology used for calculating valuation of wastewater systems for the development of equitable capacity charges.

Recommended Valuation Methodology

Capacity charges are intended to ensure that new customers contribute to the costs associated with their connection. Equitable capacity charges can be developed by using methodologies that reflect current costs and infrastructure values. BWA does not recommend original cost methodologies since these methods do not reflect the time value of money. RCN is a reasonable and widely accepted valuation method because the existing rate payers paid full price for existing capacity. RCNLD is also a reasonable, and is the most commonly used valuation method, because it takes into account losses in system value caused by aging. The RCNLD method strikes a balance between the costs paid by existing customers and the value the existing system will provide new development.

Current & Historical Capacity Charges

The Agency's capacity charges for each zone and district are adjusted annually on July 1 of each year based on the most recent change in the Engineering News Record Construction Cost Index (ENR-CCI) for San Francisco, with the most recent adjustment effective since July 1, 2024. Current capacity charges are determined by the number of Equivalent Single Family Dwelling Units (ESD's) for proposed connections. Charges for residential and commercial connections vary by type of residence and business and reflect the estimated wastewater flows and strength concentrations for a range of customers. Equivalent Single Family Dwelling Building Unit Tables (Exhibit A's) are available for each zone and district and define wastewater capacity needs for standard wastewater users. Table 1 below shows historical capacity charges per single family home.

Table 1 – Historical Capacity Charge per Single Family Home

Capacity Charges	2015	2016	2017	2018	2019	2020	2021	2022	2023-Current
Airport/Larkfield/Wikiup	$10,853	$11,190	$11,626	$11,940	$12,215	$12,674	$13,182	$15,040	$15,051
Geyserville	3,594	3,705	3,850	3,953	4,044	4,196	4,365	4,980	4,984
Penngrove	3,594	3,705	3,850	3,953	4,044	4,196	4,365	4,980	4,984
Sea Ranch	4,492	4,631	4,812	4,942	5,056	5,246	5,456	6,225	6,230
Occidental County*	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,282	2,284
Russian River County*	5,228	5,228	5,228	5,228	5,228	5,228	5,228	5,965	5,969
Sonoma Valley County	12,801	13,198	13,712	14,082	14,406	14,948	15,547	17,739	17,752
South Park County*	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,282	2,284

* Capacity charges updated by ordinance in 2021 to clarify allowed use of annual adjustments with proportion to the most recent change in the ENR-CCI for San Francisco.

3. Capacity Charges by Zone and District

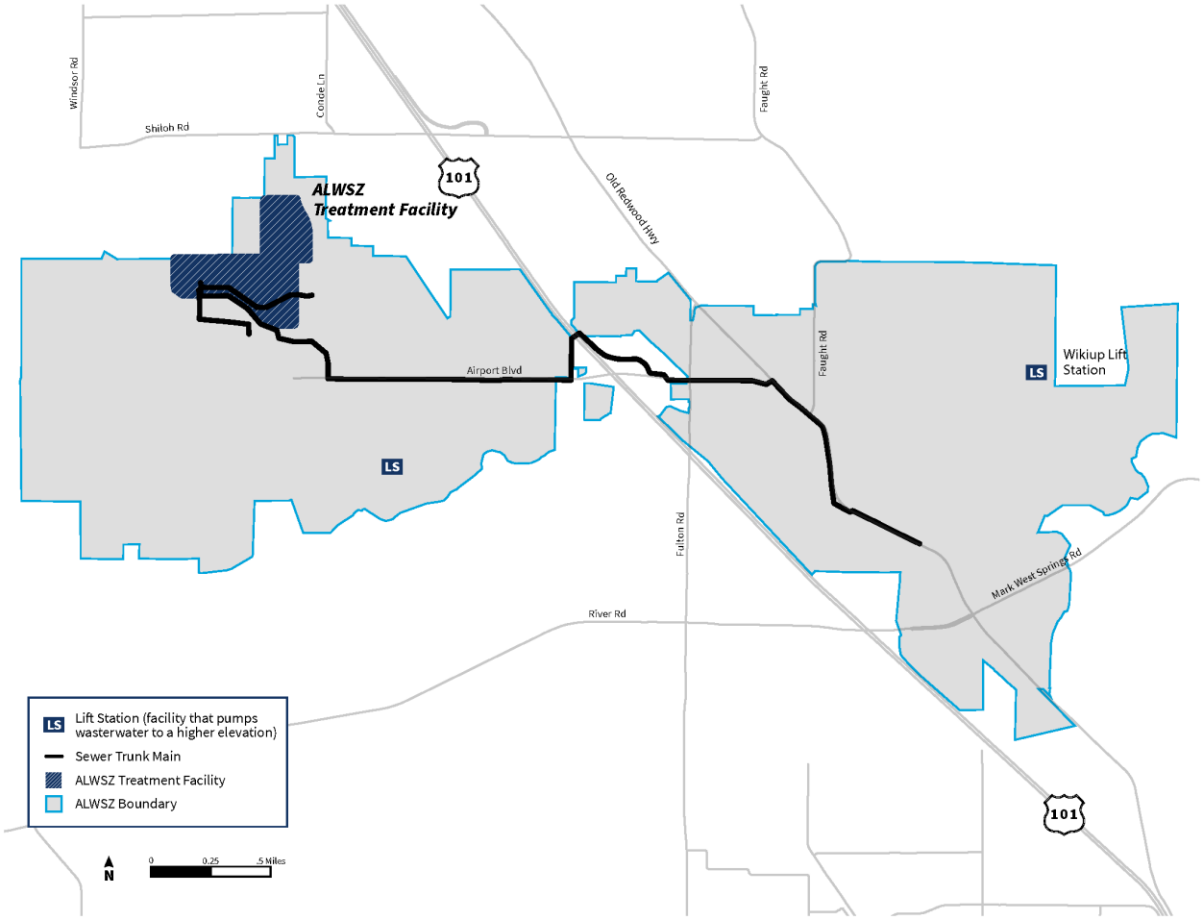
Differences in wastewater assets by zone and district result in a range of capacity charges per ESD by service area. The capacity charge calculations for each zone and district are presented in this section and full capacity charge calculation tables are included in Appendix B of this report.

Agency Sanitation Zone Airport/Larkfield/Wikiup Capacity Charges

ALWSZ Background

The Airport/Larkfield/Wikiup Sanitation Zone (ALWSZ) includes collection, distribution, and tertiary treatment of wastewater. Major wastewater system assets are comprised of a treatment facility and 214,752 ft of pipelines ranging from 2 to 24 inches in diameter. The Wastewater treatment facility has a permitted capacity of 900,000 gallons per day of average daily dry weather flow. The Zone is managed by Sonoma Water. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 2: Airport/Larkfield/Wikiup Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for the ALWSZ wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include land, intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets.

ALWSZ Collection Assets

BWA calculated costs of the ALWSZ conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 2 – ALWSZ Wastewater Collection Asset Costs

Airport/Larkfield/Wikiup Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$123,678,600
Force Mains	35,550
Total Estimated Replacement Cost	$123,714,150
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	34.00
% Life Remaining	58%
Depreciated Replacement Cost	**$71,135,636**

ALWSZ Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. ALWSZ system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of ALWSZ wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of ALWSZ's wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 3 – ALWSZ Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Airport/Larkfield/Wikiup	Replacement Cost (Current $)[1]	Replacement Cost New (RCN)[2]	Replacement Cost New Less Depreciation (RCNLD)[3]
Collection Lines	$123,714,150	$111,342,735	$71,135,636
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	68,623,237	61,760,914	17,912,551
Rights and Easements	66,435	59,791	66,435
Maintenance and Equipment	743,721	669,349	290,789
Land	2,867,704	2,580,934	2,867,704
Grants[4]	(130,478)	(117,430)	(130,478)
Subtotal Asset Replacement Costs	$195,884,770	$176,296,293	$92,142,636
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal[5]	$1,163,460	$1,163,461	$1,163,462
Cash Reserves[6]	7,343,946	7,343,947	7,343,948
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$195,884,770**	**$176,296,293**	**$92,142,636**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

ALWSZ Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for ALWSZ's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are ALWSZ's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for ALWSZ.

The following table shows the current and projected number of ESDs for ALWSZ's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) ALWSZ's historic ESD trends and b) ALWSZ's existing ESD count. The projections shown represent the total customer demand that ALWSZ's wastewater system is projected to serve through 2045.

Table 4 – ALWSZ Projected Wastewater Demand

Airport/Larkfield/Wikiup	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	4,114
Projected ESDs	
ESD Projection Basis	*Historic ESDs*
Projected 20-Year ESDs	658
Total Horizon Year ESDs	**4,772**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

ALWSZ Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of the wastewater system by b) the projected future capacity of the wastewater system.

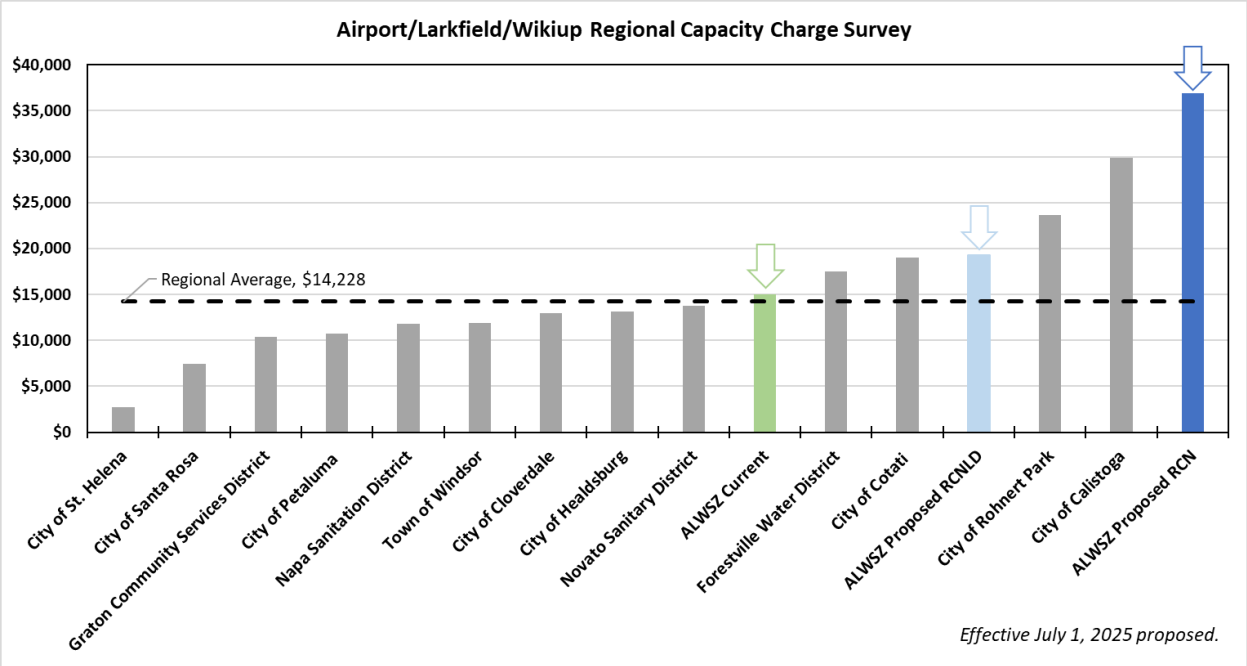
Table 5 – Recovery for ALWSZ Wastewater System by Capacity Charges

Airport/Larkfield/Wikiup	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$176,296,293	$92,142,636
Projected 2045 ESDs	4,772	4,772
Capacity Charge Per ESD	**$36,941**	**$19,308**

ALWSZ Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, ALWSZ's current capacity charges are in line with other regional agencies surveyed.

Figure 3: ALWSZ Regional Wastewater Capacity Charges Survey



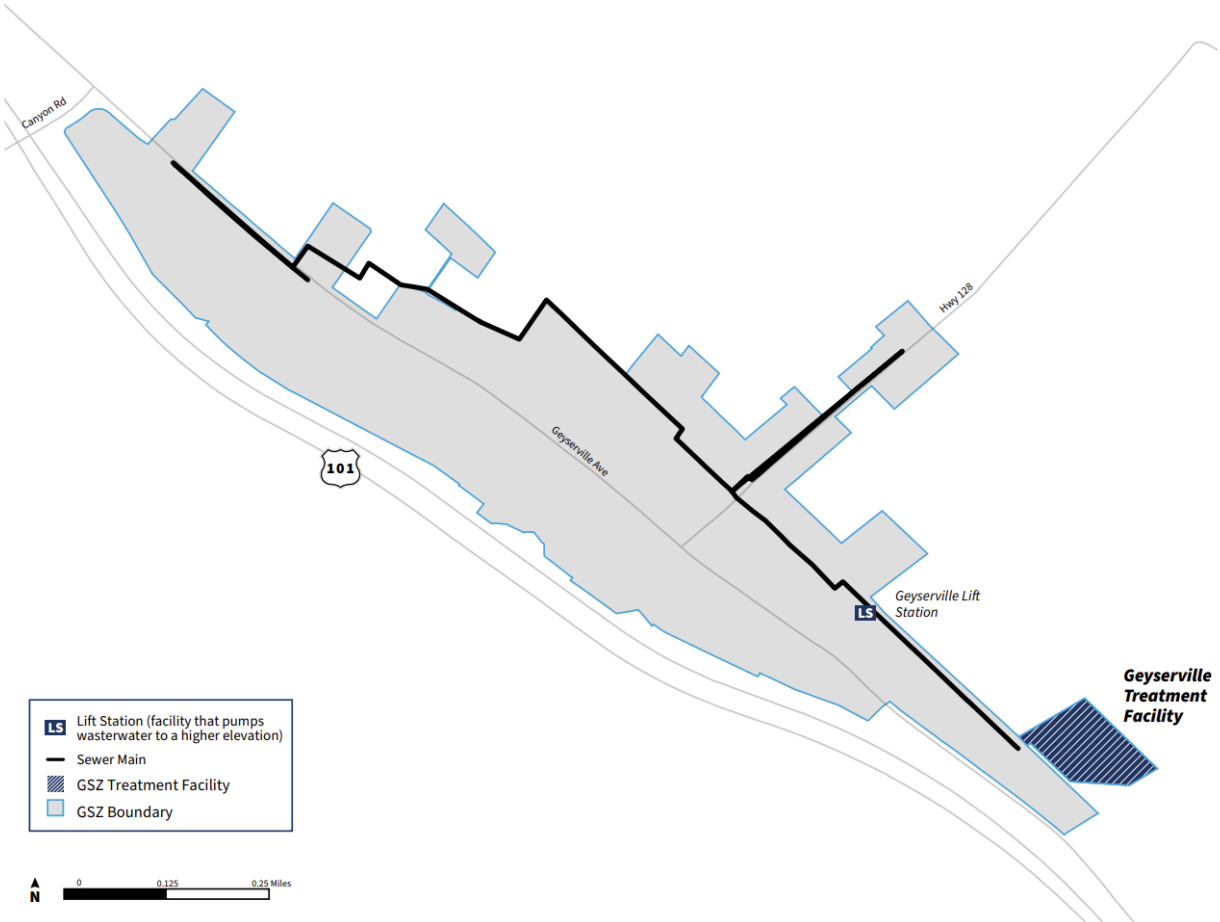
While the proposed capacity charges developed in this study are higher than ALWSZ's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

Agency Sanitation Zone Geyserville Capacity Charges

Geyserville Background

The Geyserville Sanitation Zone (Geyserville) includes collection, distribution, and secondary treatment of wastewater. Major wastewater system assets are comprised of a treatment facility and 26,210 ft of pipelines ranging from 6 to 10 inches in diameter. The Wastewater treatment facility has a permitted capacity of 92,000 gallons per day of average daily dry weather flow. The Zone is managed by Sonoma Water. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 4: Geyserville Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for the Geyserville wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include land, intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets.

Geyserville Collection Assets

BWA calculated costs of the Geyserville conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 6 – Geyserville Wastewater Collection Asset Costs

Geyserville Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$13,397,500
Force Mains	320,000
Total Estimated Replacement Cost	$13,717,500
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	59.00
% Life Remaining	26%
Depreciated Replacement Cost	**$3,600,844**

Geyserville Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. Geyserville system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of Geyserville wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of Geyserville's wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 7 – Geyserville Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Geyserville	**Replacement Cost (Current $)[1]**	**Replacement Cost New (RCN)[2]**	**Replacement Cost New Less Depreciation (RCNLD)[3]**
Collection Lines	$13,717,500	$12,345,750	$3,600,844
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	3,926,201	3,533,581	343,564
Rights and Easements	3,009	2,708	3,009
Maintenance and Equipment	78,409	70,568	48,528
Land	201,640	181,476	201,640
Grants [4]	(38,204)	(34,384)	(38,204)
Subtotal Asset Replacement Costs	$17,888,555	$16,099,699	$4,159,381
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal [5]	$0	$0	$0
Cash Reserves [6]	723,798	723,798	723,798
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$17,888,555**	**$16,099,699**	**$4,159,381**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

Geyserville Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for Geyserville's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are Geyserville's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for Geyserville.

The following table shows the current and projected number of ESDs for Geyserville's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) Sonoma County's Certified Housing Element (August 2023) and b) Geyserville's existing ESD count. The projections shown represent the total customer demand that Geyserville's wastewater system is projected to serve through 2045.

Table 8 – Geyserville Projected Wastewater Demand

Geyserville	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	369
Projected ESDs	
ESD Projection Basis	*General Plan*
Projected 20-Year ESDs	148
Total Horizon Year ESDs	**517**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

Geyserville Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

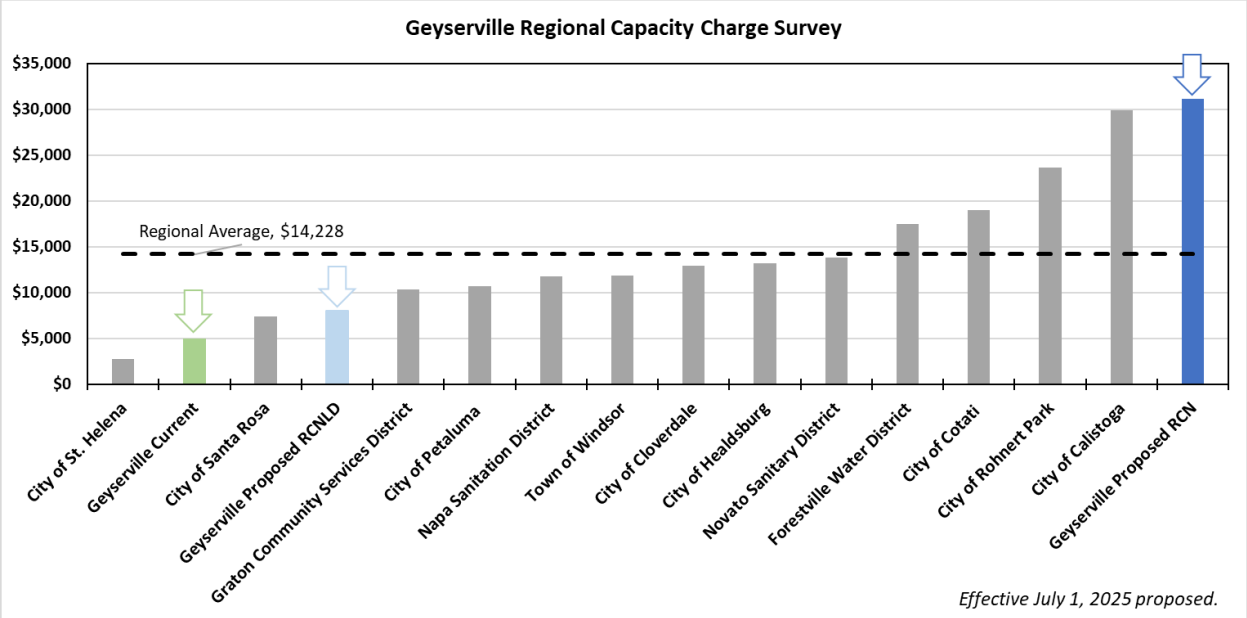
Table 9 – Recovery for Geyserville Wastewater System by Capacity Charges

Geyserville	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$16,099,699	$4,159,381
Projected 2045 ESDs	517	517
Capacity Charge Per ESD	**$31,143**	**$8,046**

Geyserville Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, Geyserville's current capacity charges are nearly the lowest compared to other regional agencies surveyed.

Figure 5: Geyserville Regional Wastewater Capacity Charges Survey



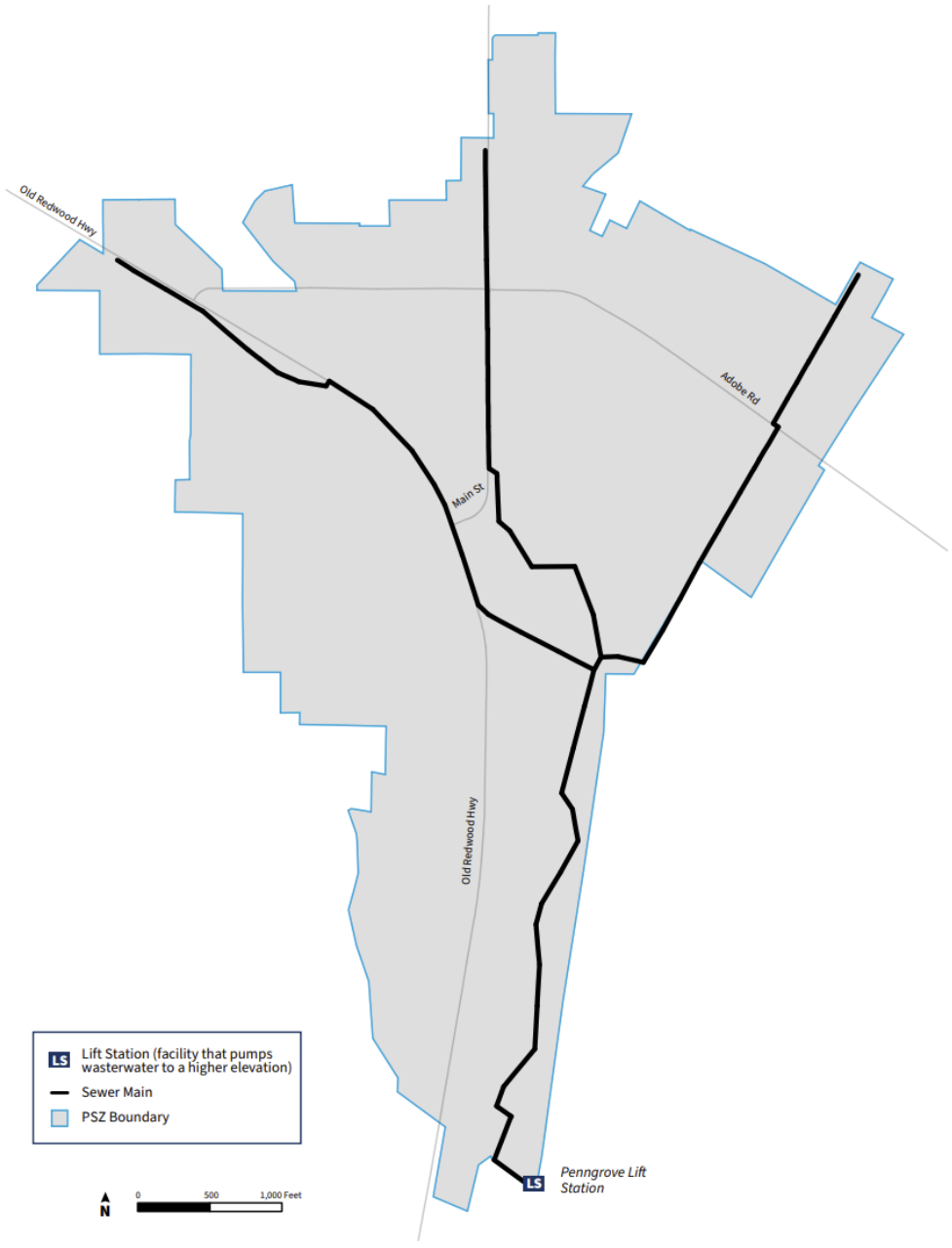
While the proposed capacity charges developed in this study are higher than Geyserville's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

Agency Sanitation Zone Penngrove Capacity Charges

Penngrove Background

The Penngrove Sanitation Zone (Penngrove) includes collection and distribution of wastewater. Major wastewater system assets are comprised of 56,376 ft of pipelines ranging from 6 to 10 inches in diameter. The Zone is managed by Sonoma Water. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 6: Penngrove Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for the Penngrove wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets.

Penngrove Collection Assets

BWA calculated costs of the Penngrove conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 10 – Penngrove Wastewater Collection Asset Costs

Penngrove Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$28,120,300
Force Mains	1,288,000
Total Estimated Replacement Cost	$29,408,300
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	55.00
% Life Remaining	31%
Depreciated Replacement Cost	**$9,190,094**

Penngrove Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. Penngrove system assets escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of Penngrove wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of Penngrove's wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 11 – Penngrove Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Penngrove	**Replacement Cost (Current $)[1]**	**Replacement Cost New (RCN)[2]**	**Replacement Cost New Less Depreciation (RCNLD)[3]**
Collection Lines	$29,408,300	$26,467,470	$9,190,094
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	1,998,138	1,798,324	1,773,488
Rights and Easements	7,115	6,404	7,115
Maintenance and Equipment	70,824	63,742	0
Land	0	0	0
Grants [4]	(530,617)	(477,555)	(530,617)
Subtotal Asset Replacement Costs	$30,953,761	$27,858,385	$10,440,080
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal [5]	$0	$0	$0
Cash Reserves [6]	1,964,189	1,964,189	1,964,189
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$30,953,761**	**$27,858,385**	**$10,440,080**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

Penngrove Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for Penngrove's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are Penngrove's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for Penngrove.

The following table shows the current and projected number of ESDs for Penngrove's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) Sonoma County's Certified Housing Element (August 2023) and b) Penngrove's existing ESD count. The projections shown represent the total customer demand that Penngrove's wastewater system is projected to serve through 2045.

Table 12 – Penngrove Projected Wastewater Demand

Penngrove	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	562
Projected ESDs	
ESD Projection Basis	*General Plan*
Projected 20-Year ESDs	164
Total Horizon Year ESDs	**726**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

Penngrove Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

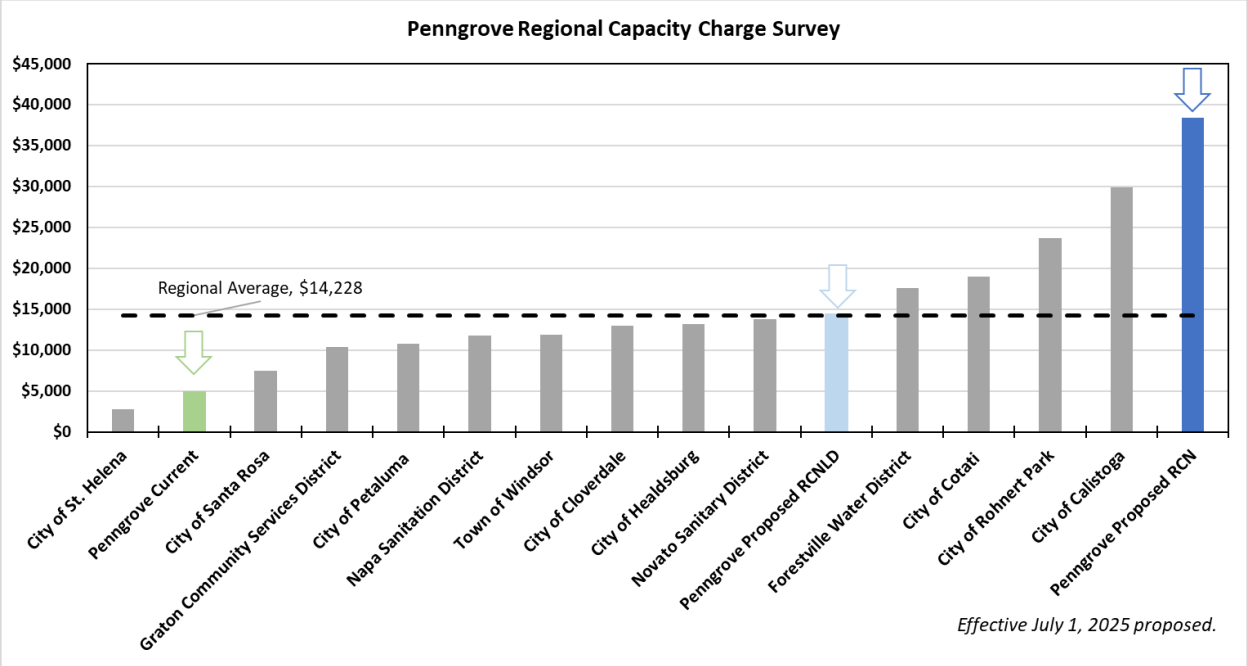
Table 13 – Recovery for Penngrove Wastewater System by Capacity Charges

Penngrove	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$27,858,385	$10,440,080
Projected 2045 ESDs	726	726
Capacity Charge Per ESD	**$38,397**	**$14,390**

Penngrove Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, Penngrove's current capacity charges are nearly the lowest compared to other regional agencies surveyed.

Figure 7: Penngrove Regional Wastewater Capacity Charges Survey



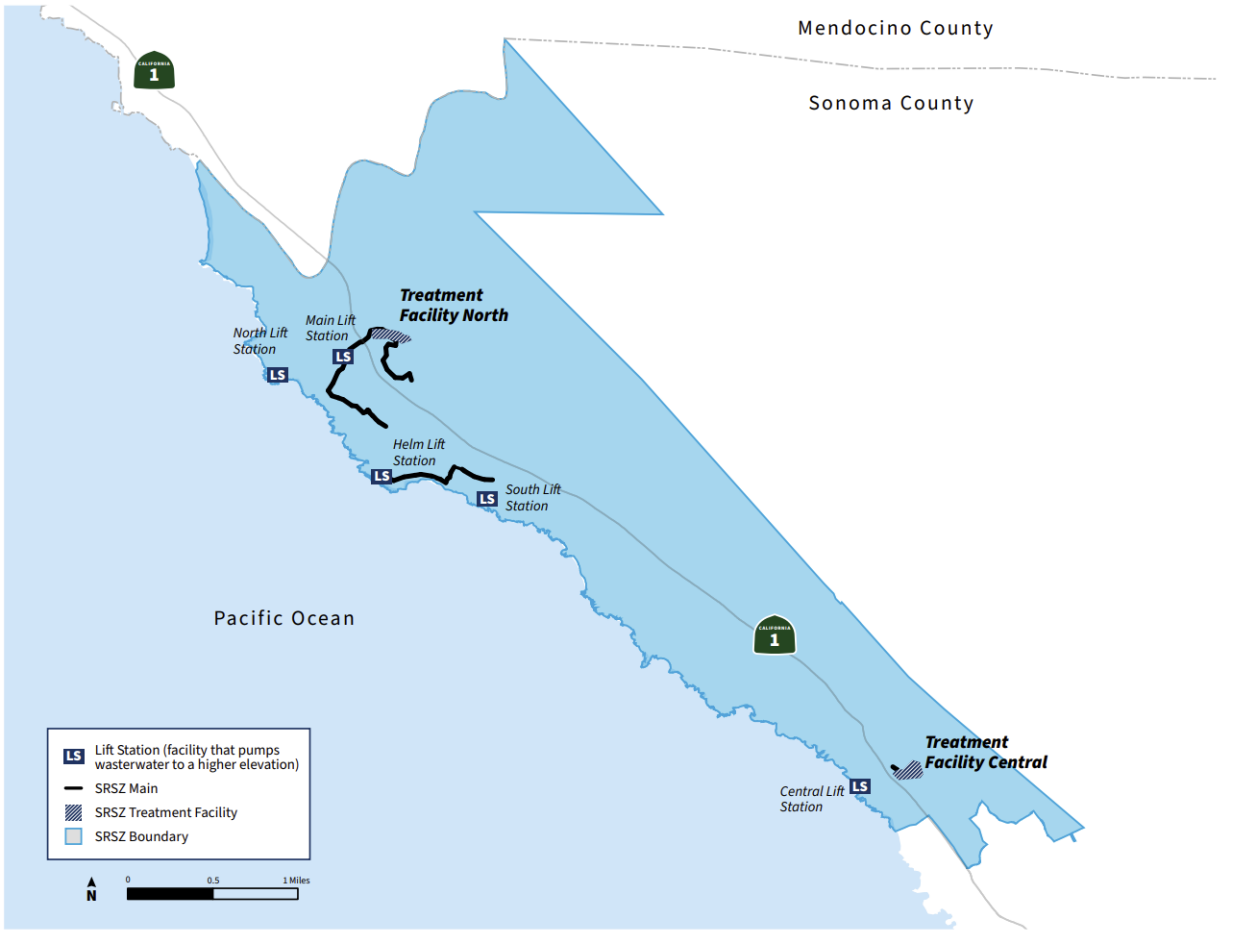
While the proposed capacity charges developed in this study are higher than Penngrove's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

Agency Sanitation Zone Sea Ranch Capacity Charges

Sea Ranch Background

The Sea Ranch Sanitation Zone (Sea Ranch) includes collection, distribution, and secondary treatment of wastewater. Major wastewater system assets are comprised of two treatment facilities and 87,076 ft of pipelines ranging from 2 to 12 inches in diameter. The Central wastewater treatment facility has a permitted capacity of 27,000 gallons per day of average daily dry weather flow. The North wastewater treatment facility has a permitted capacity of 160,000 gallons per day of average daily dry weather flow. The Zone is managed by Sonoma Water. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 8: Sea Ranch Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for Sea Ranch wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets.

Sea Ranch Collection Assets

BWA calculated costs of the Sea Ranch conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 14 – Sea Ranch Wastewater Collection Asset Costs

Sea Ranch Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$42,570,600
Force Mains	793,260
Total Estimated Replacement Cost	$43,363,860
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	54.00
% Life Remaining	33%
Depreciated Replacement Cost	**$14,093,255**

Sea Ranch Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. Sea Ranch system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of the Sea Ranch wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) depreciation adjusted infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of the Sea Ranch wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 15 – Sea Ranch Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Sea Ranch	Replacement Cost (Current $)[1]	Replacement Cost New (RCN)[2]	Replacement Cost New Less Depreciation (RCNLD)[3]
Collection Lines	$43,363,860	$39,027,474	$14,093,255
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	3,593,628	3,234,266	104,401
Rights and Easements	3,075	2,768	3,075
Maintenance and Equipment	237,265	213,539	98,043
Land	0	0	0
Grants[4]	0	0	0
Subtotal Asset Replacement Costs	$47,197,829	$42,478,046	$14,298,773
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal[5]	$0	$0	$0
Cash Reserves[6]	1,077,572	1,077,572	1,077,572
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$47,197,829**	**$42,478,046**	**$14,298,773**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

Sea Ranch Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for the Sea Ranch wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are the Zone's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for Sea Ranch.

The following table shows the current and projected number of ESDs for the Zone's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) the Zone's historic ESD trends and b) the existing ESD count for Sea Ranch. The projections shown represent the total customer demand that the Sea Ranch wastewater system is projected to serve through 2045.

Table 16 – Sea Ranch Projected Wastewater Demand

Sea Ranch	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	625
Projected ESDs	
ESD Projection Basis	*Historic ESDs*
Projected 20-Year ESDs	82
Total Horizon Year ESDs	**707**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

Sea Ranch Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

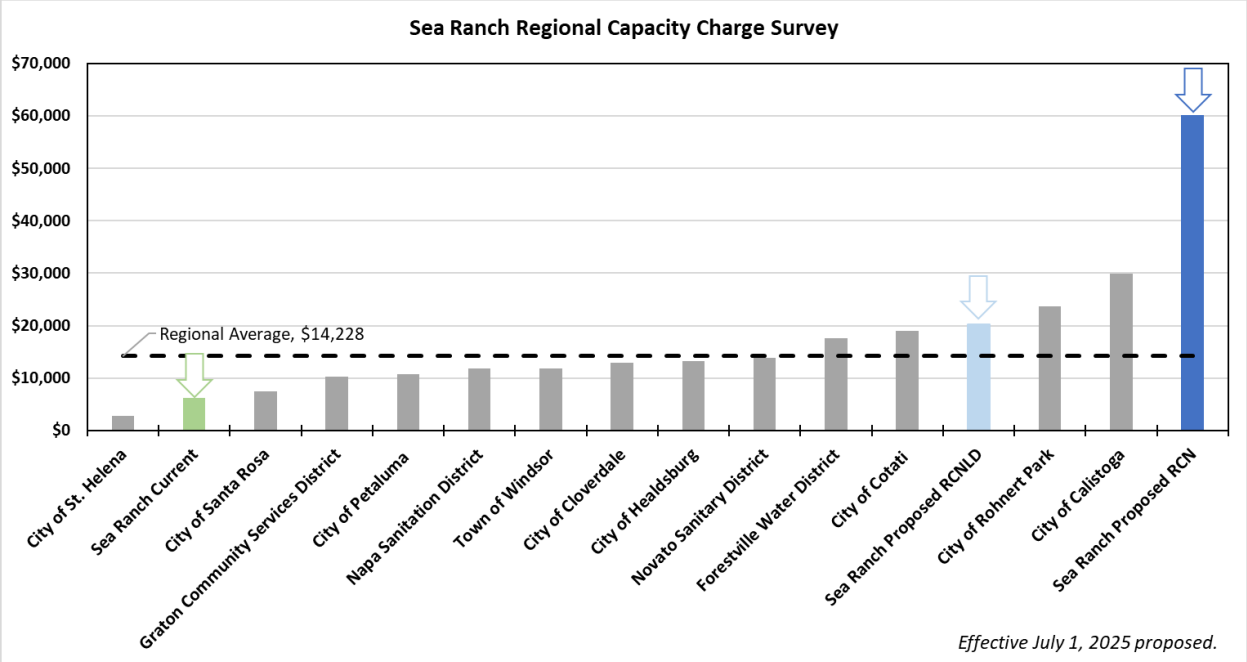
Table 17 – Recovery for Sea Ranch Wastewater System by Capacity Charges

Sea Ranch	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$42,478,046	$14,298,773
Projected 2045 ESDs	707	707
Capacity Charge Per ESD	**$60,104**	**$20,232**

Sea Ranch Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, the Zone's current capacity charges are nearly the lowest compared to other regional agencies surveyed.

Figure 9: Sea Ranch Regional Wastewater Capacity Charges Survey



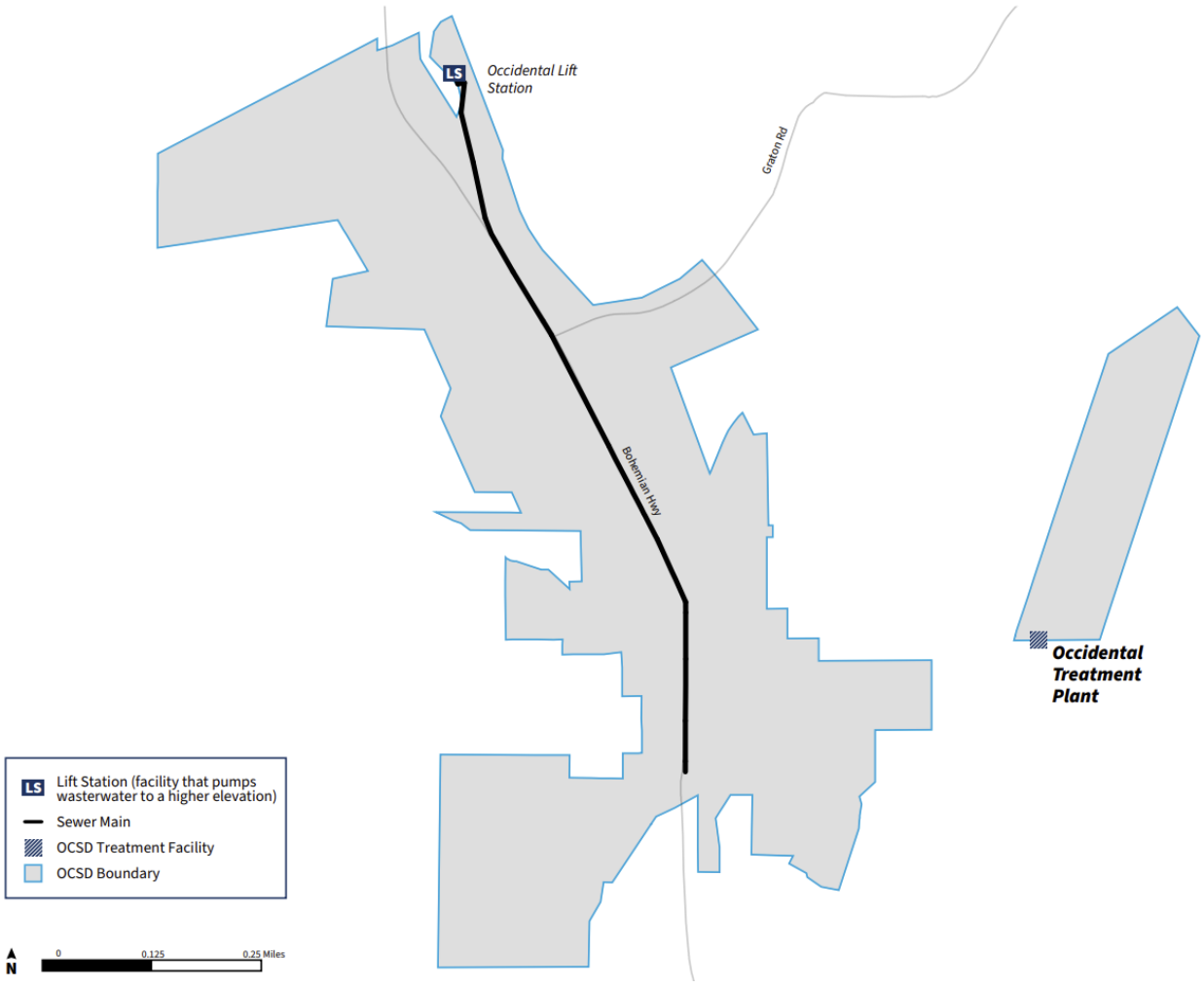
While the proposed capacity charges developed in this study are higher than the Zone's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

Occidental County Sanitation District Capacity Charges

Occidental County Background

The Occidental County Sanitation District (OCSD) includes collection, distribution, and secondary treatment of wastewater. Major wastewater system assets are comprised of a treatment facility and 12,017 ft of pipelines ranging from 4 to 12 inches in diameter. The Wastewater treatment facility has a permitted capacity of 50,000 gallons per day of average daily dry weather flow. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 10: OCSD Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for the OCSD wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include intangible assets including easements and rights, and all other infrastructure not included in collection system assets.

OCSD Collection Assets

BWA calculated costs of the OCSD conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 18 – OCSD Wastewater Collection Asset Costs

Occidental County Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$4,848,750
Force Mains	608,000
Total Estimated Replacement Cost	$5,456,750
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	60.00
% Life Remaining	25%
Depreciated Replacement Cost	**$1,364,188**

OCSD Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. OCSD system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges

The following table shows total recoverable costs of OCSD wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of OCSD's wastewater system. The system value is reduced by any outstanding principal that exceeds the value of the reserves. This amount represents asset value which has not been paid for by existing rate payers.

Table 19 – OCSD Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Occidental County	**Replacement Cost (Current $)[1]**	**Replacement Cost New (RCN)[2]**	**Replacement Cost New Less Depreciation (RCNLD)[3]**
Collection Lines	$5,456,750	$4,911,075	$1,364,188
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	2,945,007	2,650,506	2,491,605
Rights and Easements	380	342	380
Maintenance and Equipment	133,643	120,279	0
Land	0	0	0
Grants [4]	(1,790,356)	(1,611,320)	(1,790,356)
Subtotal Asset Replacement Costs	$6,745,424	$6,070,882	$2,065,816
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal [5]	$0	$0	$0
Cash Reserves [6]	2,194,464	2,194,464	2,194,464
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$6,745,424**	**$6,070,882**	**$2,065,816**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

OCSD Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for OCSD's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are OCSD's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for OCSD.

The following table shows the current and projected number of ESDs for OCSD's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) a conservative estimate of EDU growth and b) OCSD's existing ESD count. The projections shown represent the total customer demand that OCSD wastewater system is projected to serve through 2045.

Table 20 – OCSD Projected Wastewater Demand

Occidental County	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	273
Projected ESDs	
ESD Projection Basis	*Estimated*
Projected 20-Year ESDs [1]	10
Total Horizon Year ESDs	**283**

[1] BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study. If there was no historic or General Plan growth, a small amount was assumed to account for possible ADUs.

OCSD Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

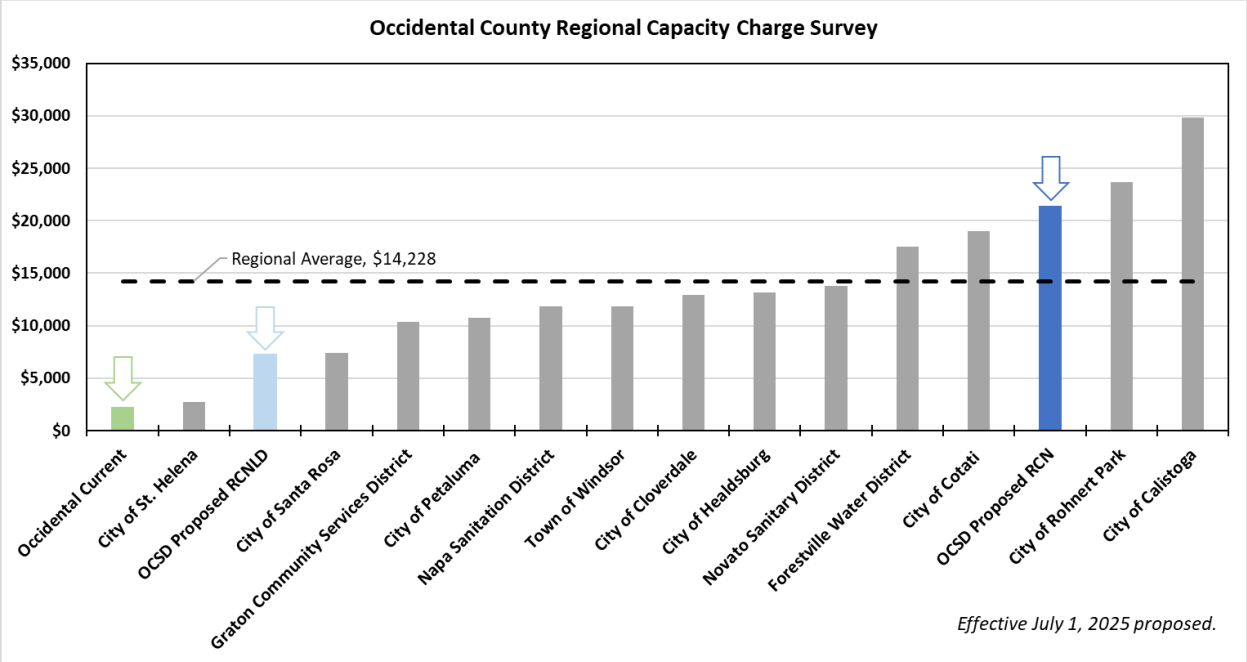
Table 21 – Recovery for OCSD Wastewater System by Capacity Charges

Occidental County	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$6,070,882	$2,065,816
Projected 2045 ESDs	283	283
Capacity Charge Per ESD	**$21,423**	**$7,290**

OCSD Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, OCSD's current capacity charges are the lowest compared to other regional agencies surveyed.

Figure 11: OCSD Regional Wastewater Capacity Charges Survey



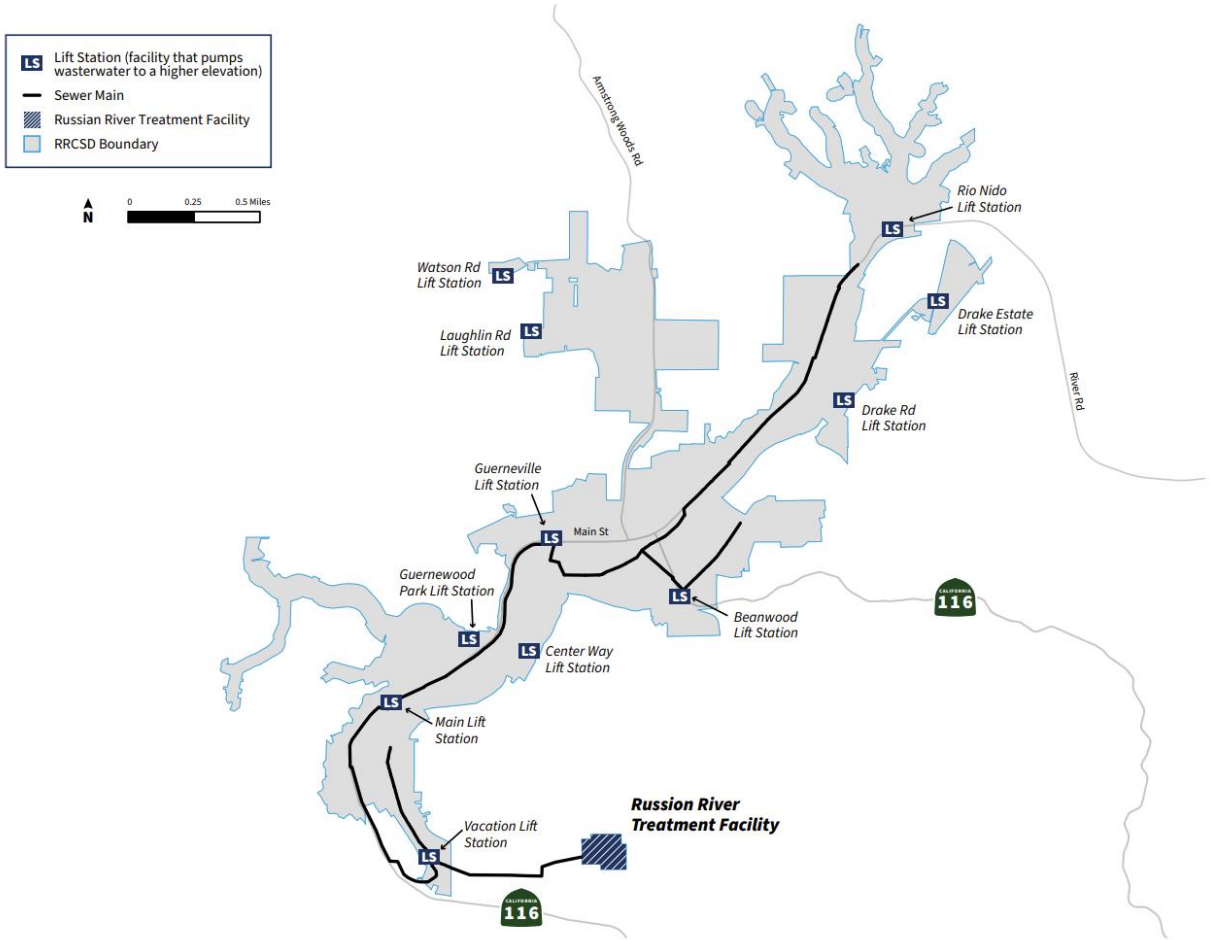
While the proposed capacity charges developed in this study are higher than Geyserville's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

Russian River County Sanitation District Capacity Charges

Russian River County Background

The Russian River County Sanitation District (RRCSD) includes collection, distribution, and tertiary treatment of wastewater. Major wastewater system assets are comprised of a treatment facility and 202,605 ft of pipelines ranging from 2 to 30 inches in diameter. The Wastewater treatment facility has a permitted capacity of 710,000 gallons per day of average daily dry weather flow. The figure below shows a map of the Sanitation Zone and major wastewater assets.

Figure 12: Russian River County Sanitation District



Existing Wastewater System Facilities & Assets

Infrastructure categories for the RRCSD wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Infrastructure – Assets include land, intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets.

RRCSD Collection Assets

BWA calculated costs of the RRCSD conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 22 – RRCSD Wastewater Collection Asset Costs

Russian River County Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$94,910,900
Force Mains	6,259,630
Total Estimated Replacement Cost	$101,170,530
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	58.00
% Life Remaining	28%
Depreciated Replacement Cost	**$27,821,896**

RRCSD Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. RRCSD system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of RRCSD wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of RRCSD's wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 23 – RRCSD Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Russian River County	**Replacement Cost (Current $)[1]**	**Replacement Cost New (RCN)[2]**	**Replacement Cost New Less Depreciation (RCNLD)[3]**
Collection Lines	$101,170,530	$91,053,477	$27,821,896
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	141,186,519	127,067,867	33,234,566
Rights and Easements	23,139	20,826	23,139
Maintenance and Equipment	359,795	323,816	198,769
Land	418,299	376,469	418,299
Grants [4]	(8,071,292)	(7,264,163)	(8,071,292)
Subtotal Asset Replacement Costs	$235,086,991	$211,578,292	$53,625,378
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal [5]	$1,454,823	$1,454,823	$1,454,823
Cash Reserves [6]	9,508,168	9,508,168	9,508,168
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$235,086,991**	**$211,578,292**	**$53,625,378**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

RRCSD Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for RRCSD's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are RRCSD's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for the District.

The following table shows the current and projected number of ESDs for RRCSD's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) Sonoma County's Certified Housing Element (August 2023) and b) the District's existing ESD count. The projections shown represent the total customer demand that RRCSD's wastewater system is projected to serve through 2045.

Table 24 – RRCSD Projected Wastewater Demand

Russian River County Capacity Charge	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	3,211
Projected ESDs	
ESD Projection Basis	*General Plan*
Projected 20-Year ESDs	229
Total Horizon Year ESDs	**3,440**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

RRCSD Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

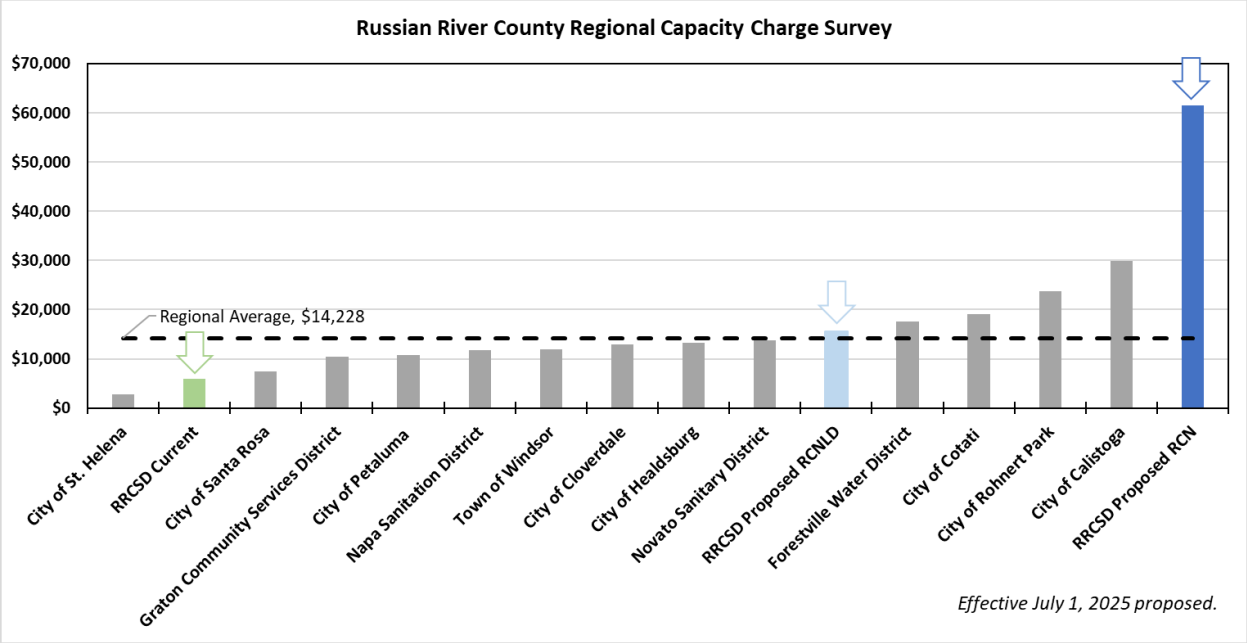
Table 25 – Recovery for RRCSD Wastewater System by Capacity Charges

Russian River County	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$211,578,292	$53,625,378
Projected 2045 ESDs	3,440	3,440
Capacity Charge Per ESD	**$61,507**	**$15,589**

RRCSD Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, the District's current capacity charges are nearly the lowest compared to other regional agencies surveyed.

Figure 13: RRCSD Regional Wastewater Capacity Charges Survey



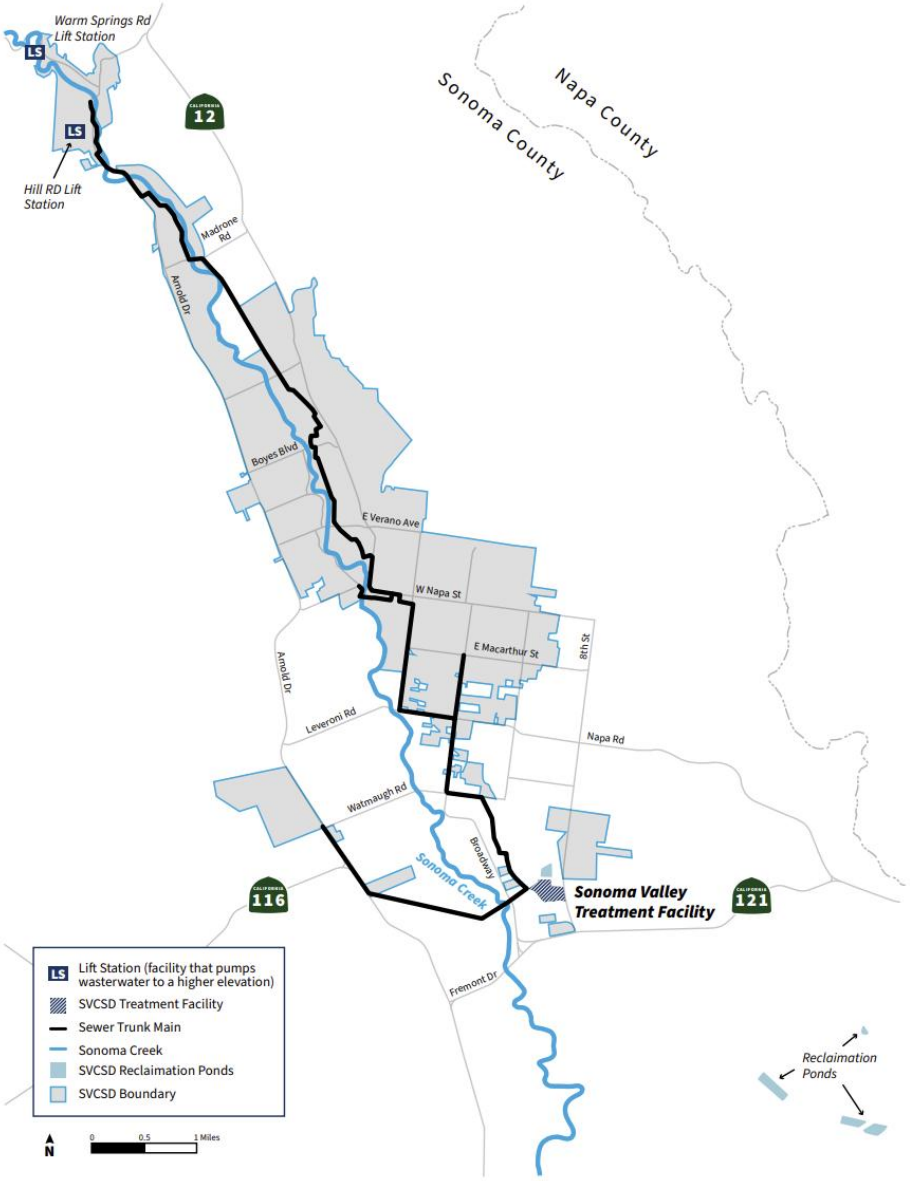
While the proposed capacity charges developed in this study are higher than the District's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the RRCSD wastewater system.

Sonoma Valley County Sanitation District Capacity Charges

SVCSD Background

The Sonoma Valley County Sanitation District (SVCSD) includes collection, distribution, and tertiary treatment of wastewater. Major wastewater system assets are comprised of a treatment plant and 703,414 ft of pipelines ranging from 4 to 42 inches in diameter. The Sonoma Valley Treatment Plant (SVTP) is a wastewater collection and water reuse system and has a permitted capacity of 3,000,000 gallons per day of average daily dry weather flow. The figure below shows a map of the District and major wastewater assets.

Figure 14: Sonoma Valley County Sanitation District



Existing Wastewater System Facilities & Assets

Infrastructure categories for the SVCSD wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines and force mains.
- Water Reuse – Assets include recycle water system pipelines.
- Treatment – Assets include Sonoma Valley Treatment Plant assets.
- Infrastructure – Assets include land, intangible assets including easements and rights, equipment, and all other infrastructure not included in collection system assets, recycled water assets, and treatment asset categories listed above.

SVCSD Collection Assets

BWA calculated costs of the SVCSD conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 26 – SVCSD Wastewater Collection Asset Costs

Sonoma Valley County Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$407,742,600
Force Mains	110,750
Total Estimated Replacement Cost	$407,853,350
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	53.00
% Life Remaining	34%
Depreciated Replacement Cost	**$137,650,506**

SVCSD Recycled Water System Assets

BWA calculated costs of the SVCSD recycled water system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 27 – SVCSD Recycled Water Asset Costs

Sonoma Valley County Recycled Water Pipeline Replacement Cost Less Depreciation	($ 2024)
Pipe Size (Inches)	
2	$466,317
3	133,340
4	382,599
6	3,482,145
8	3,898,467
10	2,786,466
12	12,009,968
14	4,533,045
15	2,121,489
16	31,705
18	28,395,231
24	8,441,513
Total Estimated Replacement Cost	$66,682,286
Pipe Remaining Life	
Service Life	80.00
Weighted Average Age	31.00
% Life Remaining	61%
Depreciated Replacement Cost	**$40,842,900**

SVCSD Treatment Assets

The original wastewater treatment plant was constructed in 1953. In 2024, the Agency developed the SVTP Master Plan, an infrastructure planning study which outlined construction costs needed to maintain the plant in safe operating condition. The 2024 study also provided average percent useful life remaining for SVTP assets identified in the study.

Table 28 – SVCSD Wastewater Treatment Asset Costs

Sonoma Valley County Treatment Asset Replacement Cost Less Depreciation	($ 2024)
Estimated Treatment Replacement Cost	
Sonoma Valley Treatment Plant	$458,000,000
% Life Remaining	36%
Depreciated Replacement Cost	**$164,880,000**

Source: Sonoma Valley County Sanitation District Wastewater Treatment Plant Master Plan (May 2024).

SVCSD Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. SVCSD system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of SVCSD wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection and redistribution assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater treatment assets account for the majority of the costs of SVCSD's wastewater system. The system value is reduced by any outstanding principal amount that exceeds the value of the reserves. This amount represents asset value which has not been paid by existing rate payers.

Table 29 – SVCSD Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
Sonoma Valley County	Replacement Cost (Current $)[1]	Replacement Cost New (RCN)[2]	Replacement Cost New Less Depreciation (RCNLD)[3]
Collection Lines	$407,853,350	$367,068,015	$137,650,506
Recycled Water	66,682,286	60,014,058	40,842,900
Treatment	458,000,000	412,200,000	164,880,000
Infrastructure	123,717,304	111,345,574	23,617,042
Rights and Easements	2,990,544	2,691,490	2,990,544
Maintenance and Equipment	821,041	738,937	261,353
Land	7,303,903	6,573,513	7,303,903
Grants[4]	(11,636,449)	(10,472,804)	(11,636,449)
Subtotal Asset Replacement Costs	$1,055,731,981	$950,158,783	$365,909,800
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal[5]	$23,822,751	$23,822,751	$23,822,751
Cash Reserves[6]	35,041,078	35,041,078	35,041,078
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$1,055,731,981**	**$950,158,783**	**$365,909,800**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

SVCSD Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for SVCSD's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are SVCSD's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for SVCSD.

The following table shows the current and projected number of ESDs for SVCSD's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) SVCSD's historic ESD trends and b) SVCSD's existing ESD count. The projections shown represent the total customer demand that SVCSD's wastewater system is projected to serve through 2045.

Table 30 – SVCSD Projected Wastewater Demand

Sonoma Valley County	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	17,946
Projected ESDs	
ESD Projection Basis	*Historic ESDs*
Projected 20-Year ESDs	1,108
Total Horizon Year ESDs	**19,054**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

SVCSD Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

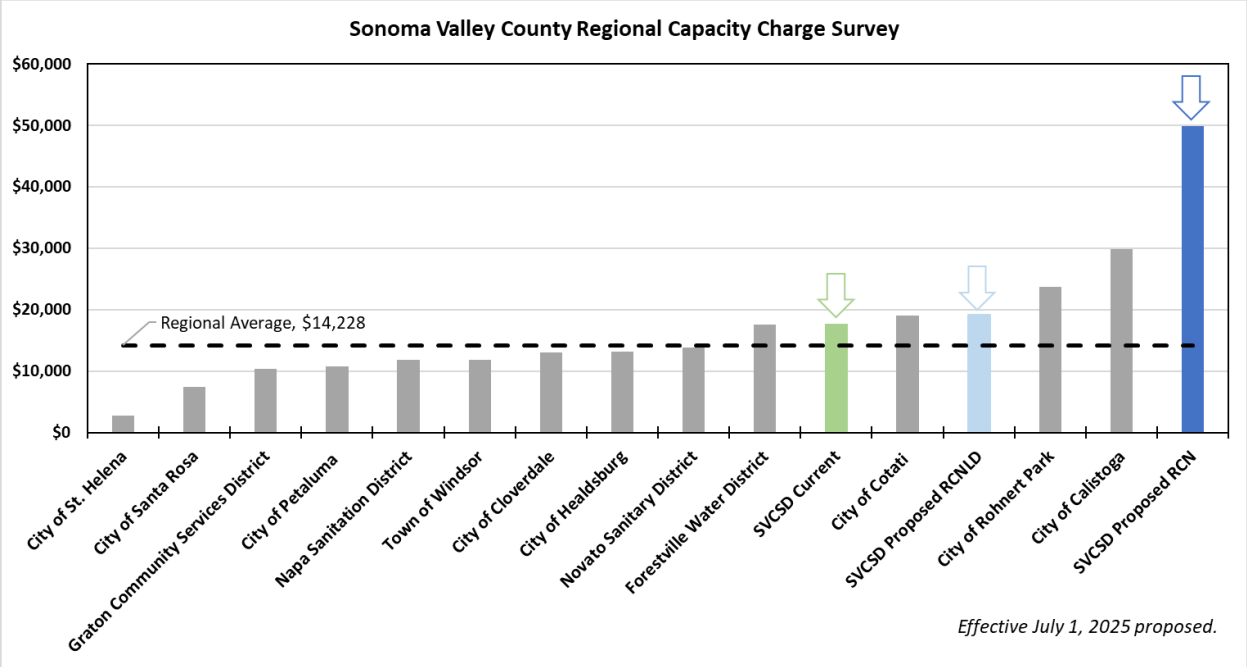
Table 31 – Recovery for SVCSD Wastewater System by Capacity Charges

Sonoma Valley County	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$950,158,783	$365,909,800
Projected 2045 ESDs	19,054	19,054
Capacity Charge Per ESD	**$49,867**	**$19,204**

SVCSD Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, SVCSD's current capacity charges are near the average compared to other regional agencies surveyed.

Figure 15: SVCSD Regional Wastewater Capacity Charges Survey



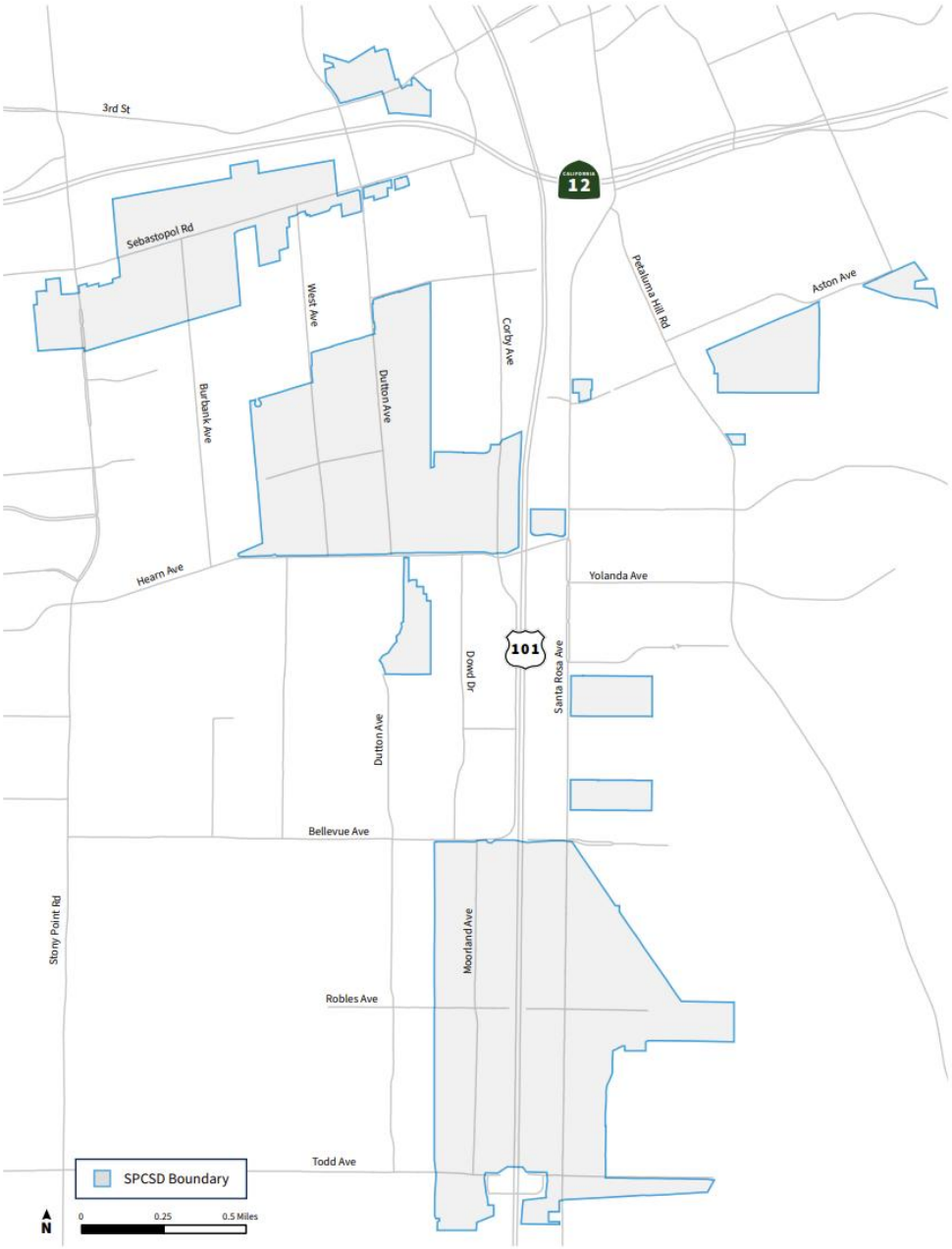
While the proposed capacity charges developed in this study are higher than SVCSD's existing charges, they are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the wastewater system.

South Park County Sanitation District Capacity Charges

SPCSD Background

The South Park County Sanitation District (SPCSD) includes collection and distribution of wastewater. Major wastewater system assets are comprised of 116,854 ft of pipelines ranging from 6 to 54 inches in diameter. The figure below shows a map of the District and major wastewater assets.

Figure 16: SPCSD Sanitation Zone



Existing Wastewater System Facilities & Assets

Infrastructure categories for the SPCSD wastewater system assets are listed below. Facility valuations used to calculate updated capacity charges were developed separately for each of these asset categories to more accurately reflect system costs of each asset type.

- Collection – Assets include gravity lines.
- Infrastructure – Assets include intangible assets including easements and rights, and all other infrastructure not included in collection system assets.

SPCSD Collection Assets

BWA calculated costs of the SPCSD conveyance system based on an updated GIS inventory of pipelines and current construction cost estimates per linear foot. Cost estimates per unit of measurement are based on estimates provided by the Agency based on wastewater construction projects from recent years. Percent useful life remaining was determined by dividing the average age of pipe by their estimated useful life.

Table 32 – SPCSD Wastewater Collection Asset Costs

South Park County Collection Replacement Cost Less Depreciation	($ 2024)
Estimated Collection Line Replacement Cost	
Trunk Main	$71,921,000
Force Mains	0
Total Estimated Replacement Cost	$71,921,000
Collection Line Remaining Life	
Service Life	80.00
Weighted Average Age	28.00
% Life Remaining	65%
Depreciated Replacement Cost	**$46,748,650**

SPCSD Wastewater System Assets for Recovery

The recoverable cost of the Agency's remaining wastewater system infrastructure is based on the acquisition cost of wastewater assets identified in the Agency's current fixed asset schedule as of June 30, 2024. SPCSD system assets are escalated into current dollars based on the change in the ENR Construction Cost Index (20-Cities Average) from original acquisition date to 2024 dollars. Grant funded assets are not considered infrastructure costs incurred by the Agency for the development of the wastewater system and are therefore removed from the calculation for wastewater infrastructure assets for recovery by capacity charges.

The following table shows total recoverable costs of the SPCSD wastewater system infrastructure accounting for both a) estimated current construction cost of sewer collection assets as shown above plus b) infrastructure assets escalated into current dollars based on the change in the ENR-CCI from acquisition date to 2024. Wastewater collection assets account for the majority of the costs of SPCSD's wastewater system. The system value is reduced by any outstanding principal that exceeds the value of the reserves. This amount represents asset value which has not been paid for by existing rate payers.

Table 33 – SPCSD Wastewater System Assets for Recovery by Capacity Charges

	Infrastructure Replacement Costs ($ 2024)		
South Park County	Replacement Cost (Current $)[1]	Replacement Cost New (RCN)[2]	Replacement Cost New Less Depreciation (RCNLD)[3]
Collection Lines	$71,921,000	$64,728,900	$46,748,650
Recycled Water	0	0	0
Treatment	0	0	0
Infrastructure	3,987,396	3,588,656	2,272,816
Rights and Easements	700	630	700
Maintenance and Equipment	0	0	0
Land	0	0	0
Grants[4]	(477,543)	(429,789)	(477,543)
Subtotal Asset Replacement Costs	$75,431,552	$67,888,397	$48,544,622
Less Outstanding Principal Net of Cash Reserves			
Outstanding Principal[5]	$824,717	$824,717	$824,717
Cash Reserves[6]	17,181,104	17,181,104	17,181,104
Net Principal Outstanding (Maximum of $0)	$0	$0	$0
Total Value of Assets for Capacity Fee	**$75,431,552**	**$67,888,397**	**$48,544,622**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

3, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.

4, Grant funded capital identified by Staff.

5, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

6, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

SPCSD Current and Projected Wastewater System Capacity

The next step in calculating capacity charges for SPCSD's wastewater system is to determine the current capacity of the system. Customer connections are represented as ESDs. The benefit of using ESDs is that they relate the relative capacity of connections by type of customer thereby accounting for the relative capacity of connections in the system. Since single family residences are SPCSD's primary wastewater user type and one ESD, this study calculates capacity charges per ESD. All other standard capacity charges are determined by their relative capacity as listed within the Exhibit A tables for Geyserville.

The following table shows the current and projected number of ESDs for SPCSD's customer base through 2045, which is reflective of the capacity of the wastewater system. Customer projections are based on a) SPCSD's historic ESD trends and b) SPCSD's existing ESD count. The projections shown represent the total customer demand that SPCSD's wastewater system is projected to serve through 2045.

Table 34 – SPCSD Projected Wastewater Demand

South Park County	EDS
Existing ESDs	
Equivalent Single-Family Dwelling Units (ESDs)	4,495
Projected ESDs	
ESD Projection Basis	*General Plan*
Projected 20-Year ESDs	920
Total Horizon Year ESDs	**5,415**

Note: BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study.

SPCSD Wastewater System Cost Recovery per ESD

The following table calculates updated wastewater capacity charges by dividing a) the recoverable cost of wastewater system assets by b) the projected future capacity of the wastewater system.

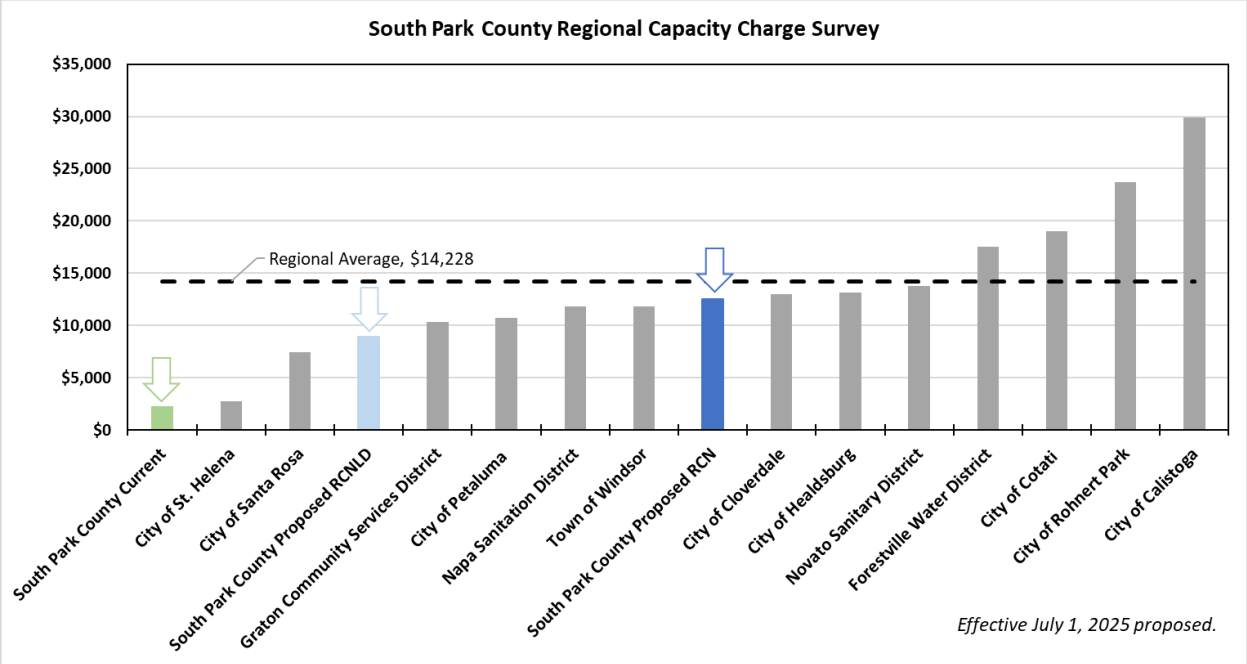
Table 35 – Recovery for SPCSD Wastewater System by Capacity Charges

South Park County	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
System Cost Recovery	$67,888,397	$48,544,622
Projected 2045 ESDs	5,415	5,415
Capacity Charge Per ESD	**$12,537**	**$8,965**

SPCSD Wastewater Capacity Charge Survey

The Agency last updated its wastewater system capacity charges in 2024. As shown on the following chart, the District's current capacity charges are the lowest compared to other regional agencies surveyed.

Figure 17: SPCSD Regional Wastewater Capacity Charges Survey



While the proposed capacity charges developed in this study are higher than the District's existing charges, they remain below the average charge among other regional agencies surveyed and are developed to reflect the current cost of infrastructure and help ensure that new and expanded connections pay for their share of capacity in the SPCSD wastewater system.

4. Summary of Proposed Capacity Charges

This section presents a summary of costs for wastewater facilities and assets to be recovered from the Agency's updated capacity charges. Valuations exclude cost recovery for some additional capital improvements that the Agency anticipates would likely be needed to serve customer demand through projected buildout but are not included in the Agency's current capital improvement plans. As such, the updated charges account for a more conservative estimate of future capital improvement funding needs for growth. In future years, BWA recommends that the Agency review and consider updating its capacity charges when substantial revisions are made to anticipated wastewater system capital improvement costs or funding, or to substantial changes in projected demand.

Capacity Charges per Single Family Home or ESD

The updated charges calculated in this report are based on a System Buy-In Approach under which new connections "buy in" for their proportionate share of costs (in current dollars) for capacity needed in the Agency's existing wastewater system facilities and assets. Wastewater system valuations were calculated based on the estimated Replacement Cost New (RCN) and the estimated Replacement Cost New Less Depreciation (RCNLD). In both methodologies, the current value of the system is based on the estimated cost of replacing the system assets in 2024 (in current dollars). The following tables summarize the capacity charge calculations for the Agency and shows the resulting capacity charges per ESD or single-family home across all eight Zones and Districts under the two valuation methodologies.

Table 36 – Proposed Maximum Base Year Wastewater Capacity Charges - RCN

Capacity Charge Derivations	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Total Value RCNLD	$176,296,293	$16,099,699	$27,858,385	$42,478,046	$6,070,882	$211,578,292	$950,158,783	$67,888,397
Horizon Year ESDs	4,772	517	726	707	283	3,440	19,054	5,415
Charges Per ESD	**$36,941**	**$31,143**	**$38,397**	**$60,104**	**$21,423**	**$61,507**	**$49,867**	**$12,537**

Table 37 – Proposed Maximum Base Year Wastewater Capacity Charges - RCNLD

Capacity Charge Derivations	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Total Value RCNLD	$92,142,636	$4,159,381	$10,440,080	$14,298,773	$2,065,816	$53,625,378	$365,909,800	$48,544,622
Horizon Year ESDs	4,772	517	726	707	283	3,440	19,054	5,415
Charges Per ESD	**$19,308**	**$8,046**	**$14,390**	**$20,232**	**$7,290**	**$15,589**	**$19,204**	**$8,965**

Updated Maximum Capacity Charges

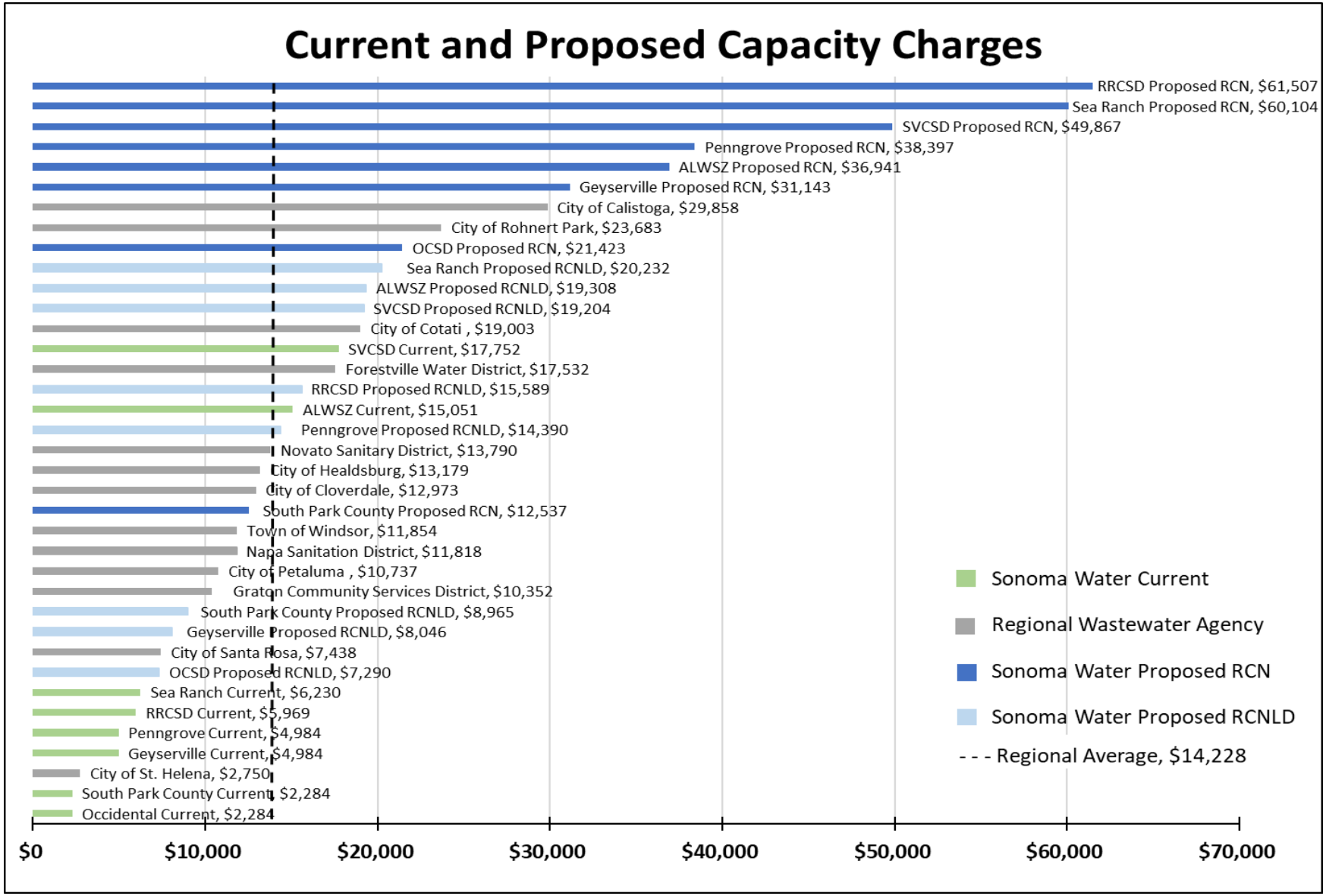
The table below shows a schedule of current and proposed maximum base year capacity charges. These charges reflect a combination of factors including a) the addition of new facilities constructed in recent years to replace aging system infrastructure, and b) construction cost inflation since the prior update to the Agency's capacity charges.

Table 38 – Proposed Maximum Base year Wastewater Capacity Charges per ESD

		Maximum Base Year Capacity Charges per ESD with Replacement Costs:	
Description	Current Charges	Replacement Cost New (RCN)	Replacement Cost New Less Depreciation (RCNLD)
Airport/Larkfield/Wikiup	$15,051	$36,941	$19,308
Geyserville	4,984	31,143	8,046
Penngrove	4,984	38,397	14,390
Sea Ranch	6,230	60,104	20,232
Occidental County	2,284	21,423	7,290
Russian River County	5,969	61,507	15,589
Sonoma Valley County	17,752	49,867	19,204
South Park County	2,284	12,537	8,965

The chart on the following page shows a survey of proposed wastewater capacity charges for a typical single-family home.

Figure 18: Regional Wastewater Capacity Charges Survey – Proposed



5. Accessory Dwelling Units

Accessory Dwelling Units

Accessory Dwelling Units (ADUs) are generally defined as secondary residential dwelling units constructed on a residential property and may include a) second independent living units within or attached to the living area of an existing primary residence, and b) detached accessory dwelling units. ADUs are governed by California Government Code Section 65852.2.

The Code includes language governing water and sewer capacity charges for ADUs including:

- ADUs within the living area of a primary residence *"shall not be considered to be a new residential use for the purposes of calculating connection fees or capacity charges for utilities, including water and sewer service."* Hence, the Agency may not levy capacity charges on ADUs that meet the requirements of the Code and are constructed within the living area of primary residence. To be considered within the living area of a primary residence, the Code permits *"an expansion of not more than 150 square feet beyond the same physical dimensions as the existing accessory structure."*
- Detached ADUs, or ADUs that require expansion of a primary residence in excess of 150 square feet *"may require a new or separate utility connection directly between the accessory dwelling unit and the utility. Consistent with Section 66013, the connection may be subject to a connection fee or capacity charge that shall be proportionate to the burden of the proposed accessory dwelling unit, based upon either its size or the number of its plumbing fixtures, upon the water or sewer system."*

In compliance with the Code, the wastewater "burden" and corresponding capacity charges for ADUs eligible to pay such charges are proposed to be calculated in proportion to the square footage of an ADU as compared to the average square footage of a single family home or ESD, resulting in a proportionate cost per square foot for an ADU.

The tables on the following page show the Agency's capacity charge calculations for ADUs.

Table 39 – Proposed Maximum Base Year Wastewater Capacity Charges for ADUs - RCN

ADU Capacity Charge Derivations - RCN	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
RCN Capacity Charges per ESD	$36,941	$31,143	$38,397	$60,104	$21,423	$61,507	$49,867	$12,537
ESD Sq. Ft [1]	1,901	1,456	1,670	1,779	1,643	1,120	1,557	1,215
ADU Charges Per Sq. Ft	**$19.43**	**$21.39**	**$22.99**	**$33.79**	**$13.04**	**$54.92**	**$32.03**	**$10.32**

[1] Based on FY 24-25 Assessor Records for Single Family Dwellings.

Table 40 – Proposed Maximum Base Year Wastewater Capacity Charges for ADUs - RCNLD

ADU Capacity Charge Derivations - RCNLD	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
RCNLD Capacity Charges per ESD	$19,308	$8,046	$14,390	$20,232	$7,290	$15,589	$19,204	$8,965
ESD Sq. Ft [1]	1,901	1,456	1,670	1,779	1,643	1,120	1,557	1,215
ADU Charges Per Sq. Ft	**$10.16**	**$5.53**	**$8.62**	**$11.37**	**$4.44**	**$13.92**	**$12.33**	**$7.38**

[1] Based on FY 24-25 Assessor Records for Single Family Dwellings.

Wastewater capacity charges for new ADUs would be calculated based on the square footage of each unit multiplied by the capacity charge per square foot.

6. Capacity Charge Application

This section highlights some key issues regarding the application and implementation of the updated capacity charges.

Capacity Charge Annual Inlfation Adjustments

To account for future construction cost inflation, BWA recommends that the Agency's capacity charge ordinances include language authorizing automatic annual adjustments along with the ability to implement a "catch-up" adjustment if an annual adjustment is ever deferred or only partially implemented. This will allow for a multi-year adjustment if the Agency ever defers an annual adjustment.

Capacity Charge Ordinance: Purpose of Charge

Pursuant to Government Code, revenues derived by capacity charges can only be used for the purpose for which the charges are collected. In order to maximize the Agency's flexibility for use of capacity charge revenues, BWA generally recommends that the resolution or ordinance adopting new charges broadly define the purpose of the charge, such as to recover costs for wastewater system infrastructure, wastewater treatment facility capacity, and any other wastewater utility assets benefitting new or expanded connections to the wastewater system.

Capacity Charge Application to Projects with Unknown Uses

Developers occasionally seek permits for development projects whose ultimate uses are not known at the time the capacity charge is paid. In these cases, BWA recommends the Agency levy the capacity charge for the general standard uses outlined in the Exhibit A tables developed for each Zone and District as an initial payment that would be subject to adjustment after the development is occupied and its uses are known. The future adjustment may include the requirement to pay additional capacity charges or potentially receive a partial refund. In such cases, the Agency should require written acknowledgment from the property owner regarding the potential requirement for additional capacity charges to be paid based on the future use of the property.

Capacity Charge Credits for Redevelopment

Capacity charges for redevelopment projects and/or expansions should be based on the incremental increase in wastewater demand generated from each project. Under this method, the capacity charges for future redevelopment projects would be based on the incremental difference between the capacity charges that would apply to the current connection and the capacity charges applicable to the expanded connection.

Future Adjustments to Capacity Charges

In future years, BWA recommends that the Agency review and consider updating its capacity charges when substantial revisions are made to anticipated wastewater system capital improvement costs or funding, or to substantial changes in projected demand. In general, BWA recommends that capacity charges be independently reviewed and/or updated at least once every five years.

Appendix A – Government Code Pertaining to Capacity Charges

California Government Code

Key Sections Pertaining to Water & Wastewater Capacity Charges
Sections 66013, 66016, 66022 & 66023

This appendix includes the full text of key sections of California Government Codes pertaining wastewater capacity charges as of February 2025. Sections of Government Code are periodically amended which could result in changes to the legal requirements governing capacity charges. The Agency should consult its legal counsel for legal interpretations of Government Code or other legislation governing water and wastewater capacity charges.

66013

(a) Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount of the fee or charge imposed in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue.

(b) As used in this section:

(1) "Sewer connection" means the connection of a structure or project to a public sewer system.

(2) "Water connection" means the connection of a structure or project to a public water system, as defined in subdivision (h) of Section 116275 of the Health and Safety Code.

(3) "Capacity charge" means a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities. A "capacity charge" does not include a commodity charge.

(4) "Local agency" means a local agency as defined in Section 66000.

(5) "Fee" means a fee for the physical facilities necessary to make a water connection or sewer connection, including, but not limited to, meters, meter boxes, and pipelines from the structure or project to a water distribution line or sewer main, and the estimated reasonable cost of labor and materials for installation of those facilities bears a fair or reasonable relationship to the payor's burdens on, or benefits received from, the water connection or sewer connection.

(6) "Public facilities" means public facilities as defined in Section 66000.

(c) A local agency receiving payment of a charge as specified in paragraph (3) of subdivision (b) shall deposit it in a separate capital facilities fund with other charges received, and account for the charges in a manner to avoid any commingling with other moneys of the local agency, except for investments, and shall expend those charges solely for the purposes for which the charges were collected. Any interest income earned from the investment of moneys in the capital facilities fund shall be deposited in that fund.

(d) For a fund established pursuant to subdivision (c), a local agency shall make available to the public, within 180 days after the last day of each fiscal year, the following information for that fiscal year:

(1) A description of the charges deposited in the fund.

(2) The beginning and ending balance of the fund and the interest earned from investment of moneys in the fund.

(3) The amount of charges collected in that fiscal year.

(4) An identification of all of the following:

(A) Each public improvement on which charges were expended and the amount of the expenditure for each improvement, including the percentage of the total cost of the public improvement that was funded with those charges if more than one source of funding was used.

(B) Each public improvement on which charges were expended that was completed during that fiscal year.

(C) Each public improvement that is anticipated to be undertaken in the following fiscal year.

(5) A description of each interfund transfer or loan made from the capital facilities fund. The information provided, in the case of an interfund transfer, shall identify the public improvements on which the transferred moneys are, or will be, expended. The information, in the case of an interfund loan, shall include the date on which the loan will be repaid, and the rate of interest that the fund will receive on the loan.

(e) The information required pursuant to subdivision (d) may be included in the local agency's annual financial report.

(f) The provisions of subdivisions (c) and (d) shall not apply to any of the following:

(1) Moneys received to construct public facilities pursuant to a contract between a local agency and a person or entity, including, but not limited to, a reimbursement agreement pursuant to Section 66003.

(2) Charges that are used to pay existing debt service or which are subject to a contract with a trustee for bondholders that requires a different accounting of the charges, or charges that are used to reimburse the local agency or to reimburse a person or entity who advanced funds under a reimbursement agreement or contract for facilities in existence at the time the charges are collected.

(3) Charges collected on or before December 31, 1998.

(g) Any judicial action or proceeding to attack, review, set aside, void, or annul the ordinance, resolution, or motion imposing a fee or capacity charge subject to this section shall be brought pursuant to Section 66022.

(h) Fees and charges subject to this section are not subject to the provisions of Chapter 5 (commencing with Section 66000), but are subject to the provisions of Sections 66016, 66022, and 66023.

(i) Subdivisions (c) and (d) only apply to capacity charges levied pursuant to this section.

(Amended by Stats. 2020, Ch. 370, Sec. 180. (SB 1371) Effective January 1, 2021.)

66016

(a) Prior to levying a new fee or service charge, or prior to approving an increase in an existing fee or service charge, a local agency shall hold at least one open and public meeting, at which oral or written presentations can be made, as part of a regularly scheduled meeting. Notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. Renewal requests for mailed notices shall be filed on or before April 1 of each year. The legislative body may establish a reasonable annual charge for sending notices based on the estimated cost of providing the service. At least 10 days prior to the meeting, the local agency shall make available to the public data indicating the amount of cost, or estimated cost, required to provide the service for which the fee or service charge is levied and the revenue sources anticipated to provide the service, including General Fund revenues. Unless there has been voter approval, as prescribed by Section 66013 or 66014, no local agency shall levy a new fee or service charge or increase an existing fee or service charge to an amount which exceeds the estimated amount required to provide the service for which the fee or service charge is levied. If, however, the fees or service charges create revenues in excess of actual cost, those revenues shall be used to reduce the fee or service charge creating the excess.

(b) Any action by a local agency to levy a new fee or service charge or to approve an increase in an existing fee or service charge shall be taken only by ordinance or resolution. The legislative body of a local agency shall not delegate the authority to adopt a new fee or service charge, or to increase a fee or service charge.

(c) Any costs incurred by a local agency in conducting the meeting or meetings required pursuant to subdivision (a) may be recovered from fees charged for the services which were the subject of the meeting.

(d) This section shall apply only to fees and charges as described in Sections 51287, 56383, 65104, 65456, 65584.1, 65863.7, 65909.5, 66013, 66014, and 66451.2 of this code, Sections 17951, 19132.3, and 19852 of the Health and Safety Code, Section 41901 of the Public Resources Code, and Section 21671.5 of the Public Utilities Code.

(e) Any judicial action or proceeding to attack, review, set aside, void, or annul the ordinance, resolution, or motion levying a fee or service charge subject to this section shall be brought pursuant to Section 66022.

(Amended by Stats. 2006, Ch. 643, Sec. 19. Effective January 1, 2007.)

66016.6

(a) Prior to levying a new fee or capacity charge, a local agency shall evaluate the amount of the fee or capacity charge. The evaluation shall include evidence to support that the fee or capacity charge does not exceed the estimated reasonable cost of providing service, in accordance with Section 66013.If an ordinance, resolution, or motion provides for an automatic adjustment in a fee or service charge, and the automatic adjustment results in an increase in the amount of a fee or service charge, any action or proceeding to attack, review, set aside, void, or annul the increase shall be commenced within 120 days of the effective date of the increase.

(b) All information constituting the evaluation shall be made publicly available at least 14 days prior to a meeting held in accordance with subdivision (a) of Section 66016.

(c) For purposes of this section:

(1) “Capacity charge” has the same meaning as defined in Section 66013.

(2) “Fee” has the same meaning as defined in Section 66013.

(3) “Local agency” has the same meaning as defined in Section 66013.

(d) Nothing in this section shall be construed to relieve a local agency of the requirement that it comply with Chapter 7 (commencing with Section 66012), the California Constitution, or applicable case law when calculating the amount of a fee.

(Added by Stats. 2022, Ch. 128, Sec. 2. (AB 2536) Effective January 1, 2023.)

66022

(a) Any judicial action or proceeding to attack, review, set aside, void, or annul an ordinance, resolution, or motion adopting a new fee or service charge, or modifying or amending an existing fee or service charge, adopted by a local agency, as defined in Section 66000, shall be commenced within 120 days of the effective date of the ordinance, resolution, or motion.

If an ordinance, resolution, or motion provides for an automatic adjustment in a fee or service charge, and the automatic adjustment results in an increase in the amount of a fee or service charge, any action or proceeding to attack, review, set aside, void, or annul the increase shall be commenced within 120 days of the effective date of the increase.

(b)Any action by a local agency or interested person under this section shall be brought pursuant to Chapter 9 (commencing with Section 860) of Title 10 of Part 2 of the Code of Civil Procedure.

(c) This section shall apply only to fees, capacity charges, and service charges described in and subject to Sections 66013, 66014, and 66016.

(Amended by Stats. 2006, Ch. 643, Sec. 20. Effective January 1, 2007.)

66023

(a) (1) Except as otherwise provided in paragraph (3), a person may request an audit in order to determine all of the following:

(A) Whether any fee or charge levied by a local agency exceeds the amount reasonably necessary to cover the cost of any product, public facility, as defined in Section 66000, or service provided by the local agency.

(B) When the revenue generated by a fee or charge is scheduled to be expended.

(C) When the public improvement is scheduled to be completed.

(2) (A) Except as provided in subparagraph (B), if a person makes a request pursuant to paragraph (1), the legislative body of the local agency may retain an independent auditor to conduct an audit to determine whether the fee or charge is reasonable, when the revenue generated by a fee or charge is scheduled to be expended, and when the project is scheduled to be completed.

(B) The legislative body is not required to conduct the audit if an audit has been performed for the same fee within the previous 12 months.

(3) Subparagraphs (B) and (C) of paragraph (1) shall not apply to a fee subject to Section 66013.

(b) To the extent that the audit determines that the amount of any fee or charge does not meet the requirements of this section, the local agency shall adjust the fee accordingly. This subdivision does not apply to a fee authorized pursuant to Section 17620 of the Education Code, or Sections 65995.5 and 65995.7.

(c) Except as otherwise provided in subdivision (h), the local agency shall retain an independent auditor to conduct an audit only if the person who requests the audit deposits with the local agency the amount of the local agency's reasonable estimate of the cost of the independent audit. At the conclusion of the audit, the local agency shall reimburse unused sums, if any, or the requesting person shall pay the local agency the excess of the actual cost of the audit over the sum which was deposited.

(d) Any audit conducted by an independent auditor to determine whether a fee or charge levied by a local agency exceeds the amount reasonably necessary to cover the cost of providing the product or service shall conform to generally accepted auditing standards.

(e) The procedures specified in this section shall be alternative and in addition to those specified in Section 54985.

(f) The Legislature finds and declares that oversight of local agency fees is a matter of statewide interest and concern. It is, therefore, the intent of the Legislature that this chapter shall supersede all conflicting local laws and shall apply in charter cities.

(g) This section shall not be construed as granting any additional authority to any local agency to levy any fee or charge which is not otherwise authorized by another provision of law, nor shall its provisions be construed as granting authority to any local agency to levy a new fee or charge when other provisions of law specifically prohibit the levy of a fee or charge.

(h) Notwithstanding subdivision (c), if a local agency does not comply with subdivision (b) of Section 66006 for three consecutive years, both of the following shall apply:

(1) The local agency shall not require a deposit for an independent audit requested pursuant to this section and shall pay the cost of the audit.

(2) The independent audit conducted shall include each consecutive year the local agency did not comply with subdivision (b) of Section 66006.

(Amended by Stats. 2023, Ch. 741, Sec. 3. (AB 516) Effective January 1, 2024)

Appendix B – Sonoma Water Wastewater Capacity Charges Tables

Sonoma Water

Sonoma Water

Wastewater Capacity Charges Study

Final Report

4/21/2025

BARTLE WELLS ASSOCIATES

INDEPENDENT PUBLIC FINANCE ADVISORS

Table 1
Sonoma Water
Wastewater Capacity Charges Study
Historical Capacity Fees

Capacity Fees [1]	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Airport/Larkfield/Wikiup	$10,853	$11,190	$11,626	$11,940	$12,215	$12,674	$13,182	$15,040	$15,051	$15,051
Geyserville	3,594	3,705	3,850	3,953	4,044	4,196	4,365	4,980	4,984	4,984
Penngrove	3,594	3,705	3,850	3,953	4,044	4,196	4,365	4,980	4,984	4,984
Sea Ranch	4,492	4,631	4,812	4,942	5,056	5,246	5,456	6,225	6,230	6,230
Occidental County	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,282	2,284	2,284
Russian River County	5,228	5,228	5,228	5,228	5,228	5,228	5,228	5,965	5,969	5,969
Sonoma Valley County	12,801	13,198	13,712	14,082	14,406	14,948	15,547	17,739	17,752	17,752
South Park County	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,282	2,284	2,284

[1] Based on Equivalent Single Family Dwelling Unit (ESD) as defined in Section 2.01 of the Sonoma County Water Agency Sanitation Code.

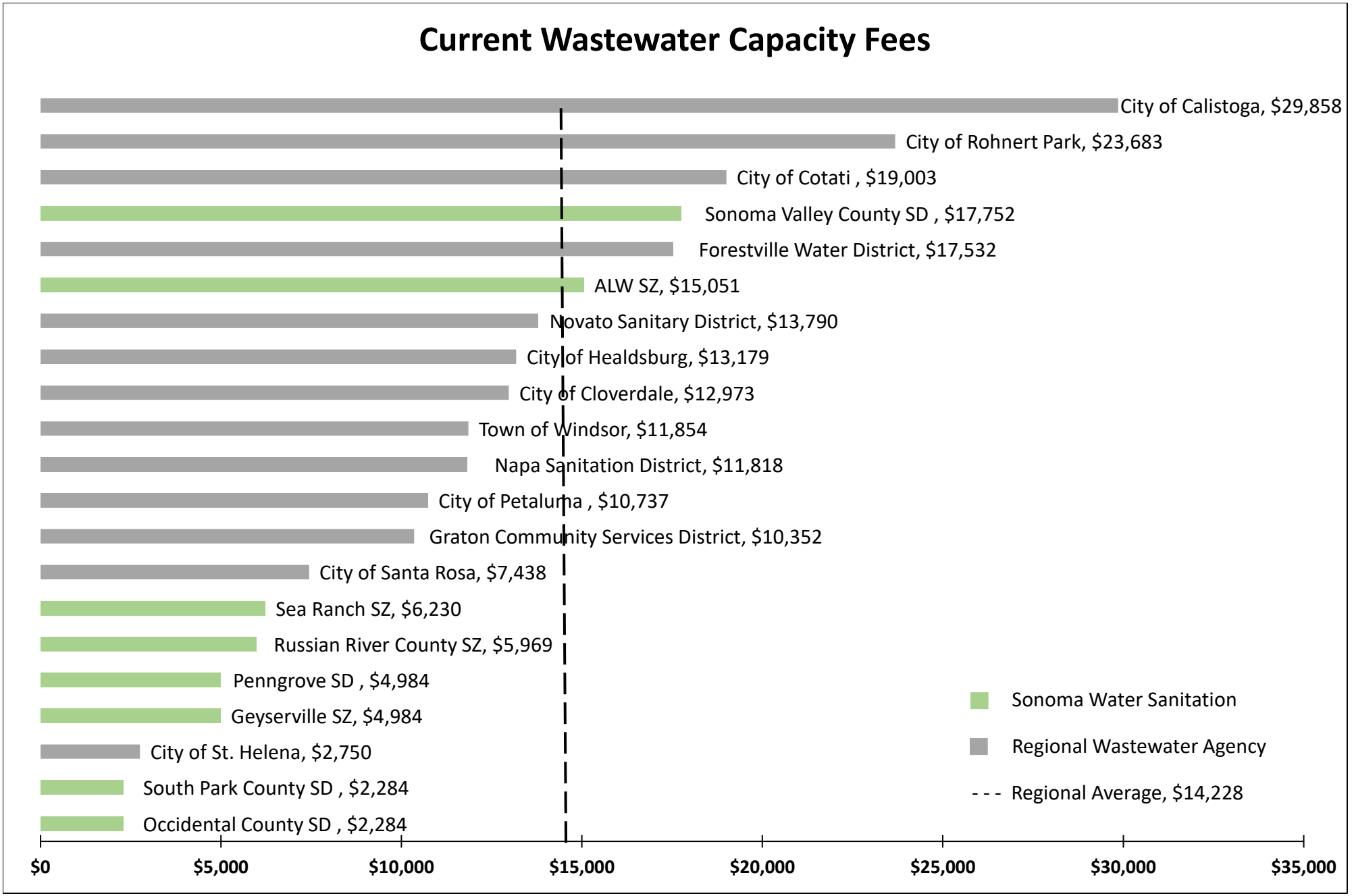

Current Wastewater Capacity Fees
City of Calistoga, $29,858
City of Rohnert Park, $23,683
City of Cotati , $19,003
Sonoma Valley County SD , $17,752
Forestville Water District, $17,532
ALW SZ, $15,051
Novato Sanitary District, $13,790
City of Healdsburg, $13,179
City of Cloverdale, $12,973
Town of Windsor, $11,854
Napa Sanitation District, $11,818
City of Petaluma , $10,737
Graton Community Services District, $10,352
City of Santa Rosa, $7,438
Sea Ranch SZ, $6,230
Russian River County SZ, $5,969
Penngrove SD , $4,984
Geyserville SZ, $4,984
City of St. Helena, $2,750
South Park County SD , $2,284
Occidental County SD , $2,284
Sonoma Water Sanitation
Regional Wastewater Agency
Regional Average, $14,228
$0
$5,000
$10,000
$15,000
$20,000
$25,000
$30,000
$35,000

Table 2
Sonoma Water
Wastewater Capacity Charges Study
Existing and Projected ESDs

Projected 20-Year EDS	Airport/Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Existing ESDs								
Equivalent Single-Family Dwelling Units (ESDs)	**4,114**	**369**	**562**	**625**	**273**	**3,211**	**17,946**	**4,495**
Projected ESDs								
ESD Projection Basis	*Historic ESDs*	*General Plan*	*General Plan*	*Historic ESDs*	*Estimated*	*General Plan*	*Historic ESDs*	*Historic ESDs*
Projected 20-Year ESDs [1]	658	148	164	82	10	229	1,108	920
Total Horizon Year ESDs	**4,772**	**517**	**726**	**707**	**283**	**3,440**	**19,054**	**5,415**

[1] *BWA recommends using the most reasonable and conservative projection for the 20-year period, based on the data available at the time of this study. If there was no historic or General Plan growth, a small amount was assumed to account for possible ADUs.*

Table 3
Sonoma Water
Wastewater Capacity Charges Study
Collection System Assets - Replacement Costs New

Diameter	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County	Replacement Cost	Airport/ Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Inches	*LF*	*LF*	*LF*	*LF*	*LF*	*LF*	*LF*	*LF*	*$ per LF*	*$*	*$*	*$*	*$*	*$*	*$*	*$*	*$*
Gravity Line																	
2	899	0	0	0	0	0	0	0	$300.00	$269,700	$0	$0	$0	$0	$0	$0	$0
3	0	0	0	0	0	0	0	0	$300.00	$0	$0	$0	$0	$0	$0	$0	$0
4	421	0	0	0	395	3,777	780	0	$350.00	$147,350	$0	$0	$0	$138,250	$1,321,950	$273,000	$0
5	0	0	0	0	151	0	80	0	$400.00	$0	$0	$0	$0	$60,400	$0	$32,000	$0
6	85,910	13,685	18,413	72,354	3,125	128,585	413,170	27,605	$500.00	$42,955,000	$6,842,500	$9,206,500	$36,177,000	$1,562,500	$64,292,500	$206,585,000	$13,802,500
8	75,995	9,709	27,624	4,115	4,764	28,581	136,574	61,575	$600.00	$45,597,000	$5,825,400	$16,574,400	$2,469,000	$2,858,400	$17,148,600	$81,944,400	$36,945,000
10	14,478	1,216	3,899	3,089	0	4,802	22,030	1,934	$600.00	$8,686,800	$729,600	$2,339,400	$1,853,400	$0	$2,881,200	$13,218,000	$1,160,400
12	10,093	0	0	3,452	382	4,356	21,180	10,508	$600.00	$6,055,800	$0	$0	$2,071,200	$229,200	$2,613,600	$12,708,000	$6,304,800
15	8,611	0	0	0	0	7,846	6,100	2,199	$600.00	$5,166,600	$0	$0	$0	$0	$4,707,600	$3,660,000	$1,319,400
16	0	0	0	0	0	0	3,159	2,733	$600.00	$0	$0	$0	$0	$0	$0	$1,895,400	$1,639,800
18	198	0	0	0	0	0	32,538	8	$650.00	$128,700	$0	$0	$0	$0	$0	$21,149,700	$5,200
21	6,805	0	0	0	0	1,703	10,264	0	$750.00	$5,103,750	$0	$0	$0	$0	$1,277,250	$7,698,000	$0
24	10,631	0	0	0	0	346	11,120	4,136	$900.00	$9,567,900	$0	$0	$0	$0	$311,400	$10,008,000	$3,722,400
27	0	0	0	0	0	172	24,400	4,853	$1,000.00	$0	$0	$0	$0	$0	$172,000	$24,400,000	$4,853,000
30	0	0	0	0	0	168	19,304	384	$1,100.00	$0	$0	$0	$0	$0	$184,800	$21,234,400	$422,400
36	0	0	0	0	0	0	1,533	0	$1,400.00	$0	$0	$0	$0	$0	$0	$2,146,200	$0
42	0	0	0	0	0	0	527	0	$1,500.00	$0	$0	$0	$0	$0	$0	$790,500	$0
54	0	0	0	0	0	0	0	919	$1,900.00	$0	$0	$0	$0	$0	$0	$0	$1,746,100
Total Gravity Line	214,041	24,610	49,936	83,010	8,817	180,336	702,759	116,854		$123,678,600	$13,397,500	$28,120,300	$42,570,600	$4,848,750	$94,910,900	$407,742,600	$71,921,000
Force Main																	
2	711	0	0	0	0	2,409	135	0	$50.00	$35,550	$0	$0	$0	$0	$120,450	$6,750	$0
4	0	0	0	3,039	3,200	2,867	0	0	$190.00	$0	$0	$0	$577,410	$608,000	$544,730	$0	$0
6	0	1,600	6,440	818	0	2,122	520	0	$200.00	$0	$320,000	$1,288,000	$163,600	$0	$424,400	$104,000	$0
8	0	0	0	209	0	2,356	0	0	$250.00	$0	$0	$0	$52,250	$0	$589,000	$0	$0
12	0	0	0	0	0	3,450	0	0	$290.00	$0	$0	$0	$0	$0	$1,000,500	$0	$0
16	0	0	0	0	0	8,161	0	0	$390.00	$0	$0	$0	$0	$0	$3,182,790	$0	$0
18	0	0	0	0	0	904	0	0	$440.00	$0	$0	$0	$0	$0	$397,760	$0	$0
Total Force Main	711	1,600	6,440	4,066	3,200	22,269	655	0		$35,550	$320,000	$1,288,000	$793,260	$608,000	$6,259,630	$110,750	$0

Source: City of Sonoma GIS data.

Table 4
Sonoma Water
Wastewater Capacity Charges Study
System Assets - Replacement Costs New Less Depreciation

Asset Replacement Cost Less Depreciation	Airport/ Larkfield/Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Escalation	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*
Estimated Collection Line Replacement Cost								
Trunk Main	$123,678,600	$13,397,500	$28,120,300	$42,570,600	$4,848,750	$94,910,900	$407,742,600	$71,921,000
Force Mains	35,550	320,000	1,288,000	793,260	608,000	6,259,630	110,750	0
Total Estimated Replacement Cost	$123,714,150	$13,717,500	$29,408,300	$43,363,860	$5,456,750	$101,170,530	$407,853,350	$71,921,000
Service Life	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Weighted Average Age	34.00	59.00	55.00	54.00	60.00	58.00	53.00	28.00
% Life Remaining	58%	26%	31%	33%	25%	28%	34%	65%
Depreciated Replacement Cost	**$71,135,636**	**$3,600,844**	**$9,190,094**	**$14,093,255**	**$1,364,188**	**$27,821,896**	**$137,650,506**	**$46,748,650**
Estimated Treatment Replacement Cost								
WWTP	$0	$0	$0	$0	$0	$0	$458,000,000	$0
% Life Remaining							36%	
Depreciated Replacement Cost							**$164,880,000**	

Table 5
Sonoma Water
Wastewater Capacity Charges Study
SVCSD Recycle Water Pipelines

Recycled Water Pipeline	Length	Replacement Cost per Unit	Replacement Cost
Inches	*LF*	*$ per LF*	*$*
2	1,554	$300.00	$466,317
3	444	$300.00	133,340
4	1,093	$350.00	382,599
6	6,964	$500.00	3,482,145
8	6,497	$600.00	3,898,467
10	4,644	$600.00	2,786,466
12	20,017	$600.00	12,009,968
14	7,555	$600.00	4,533,045
15	3,536	$600.00	2,121,489
16	53	$600.00	31,705
18	43,685	$650.00	28,395,231
24	9,379	$900.00	8,441,513
Replacement Cost			$66,682,286
Service Life (years)			80
Weighted Average Age			31
% Life Remaining			61%
Depreciated Replacement Cost			**$40,842,900**

Table 6
Sonoma Water
Wastewater Capacity Charges Study
System Summary - Replacement Costs New

Infrastructure Replacement Costs [1]	Airport/Larkfield /Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Escalation	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*
System Asset Value								
Collection Lines	$123,714,150	$13,717,500	$29,408,300	$43,363,860	$5,456,750	$101,170,530	$407,853,350	$71,921,000
Recycled Water							66,682,286	
Treatment							458,000,000	
Infrastructure	68,623,237	3,926,201	1,998,138	3,593,628	2,945,007	141,186,519	123,717,304	3,987,396
Rights and Easements	66,435	3,009	7,115	3,075	380	23,139	2,990,544	700
Maintenance and Equipment	743,721	78,409	70,824	237,265	133,643	359,795	821,041	0
Land	2,867,704	201,640	0	0	0	418,299	7,303,903	0
Grants [2]	(130,478)	(38,204)	(530,617)	0	(1,790,356)	(8,071,292)	(11,636,449)	(477,543)
Total Asset Replacement Costs	$195,884,770	$17,888,555	$30,953,761	$47,197,829	$6,745,424	$235,086,991	$1,055,731,981	$75,431,552
Less Outstanding Principal Net of Cash Reserves								
Outstanding Principal [3]	$1,163,460	$0	$0	$0	$0	$1,454,823	$23,822,751	$824,717
Cash Reserves [4]	7,343,946	723,798	1,964,189	1,077,572	2,194,464	9,508,168	35,041,078	17,181,104
Net Principal Outstanding (Maximum of $0)	$0	$0	$0	$0	$0	$0	$0	$0
Total Replacement Costs	$195,884,770	$17,888,555	$30,953,761	$47,197,829	$6,745,424	$235,086,991	$1,055,731,981	$75,431,552

Capacity Charge Derivation [5] Replacement Costs New	Airport/Larkfield /Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Total Value	$195,884,770	$17,888,555	$30,953,761	$47,197,829	$6,745,424	$235,086,991	$1,055,731,981	$75,431,552
Value Reduction [6]	10%	10%	10%	10%	10%	10%	10%	10%
Reduced Total Value	**$176,296,293**	**$16,099,699**	**$27,858,385**	**$42,478,046**	**$6,070,882**	**$211,578,292**	**$950,158,783**	**$67,888,397**
Horizon Year ESDs	4,772	517	726	707	283	3,440	19,054	5,415
Capacity Charge per ESD	**$36,941**	**$31,143**	**$38,397**	**$60,104**	**$21,423**	**$61,507**	**$49,867**	**$12,537**

1, Estimated replacement cost of the wastewater systems in today's dollars.

2, Grant funded capital identified by Staff.

3, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.

4, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

5, The current replacement cost of the system was reduced by 10% to ensure the proposed capacity charges using the RCN method do not exceed the reasonable cost of capacity.

Table 7
Sonoma Water
Wastewater Capacity Charges Study
Capacity Charge Derivation - Replacement Costs New

Capacity Charge Derivation Replacement Costs New	Airport/Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Current Fee per ESD	**$15,051**	**$4,984**	**$4,984**	**$6,230**	**$2,284**	**$5,969**	**$17,752**	**$2,284**
Inflation Adj. Current Fee per ESD	*$15,051*	*$4,984*	*$4,984*	*$6,230*	*$5,127*	*$12,422*	*$17,752*	*$5,127*
Total Value RCN	$176,296,293	$16,099,699	$27,858,385	$42,478,046	$6,070,882	$211,578,292	$950,158,783	$67,888,397
Horizon Year ESDs	4,772	517	726	707	283	3,440	19,054	5,415
Capacity Charge per ESD - RCN	**$36,941**	**$31,143**	**$38,397**	**$60,104**	**$21,423**	**$61,507**	**$49,867**	**$12,537**

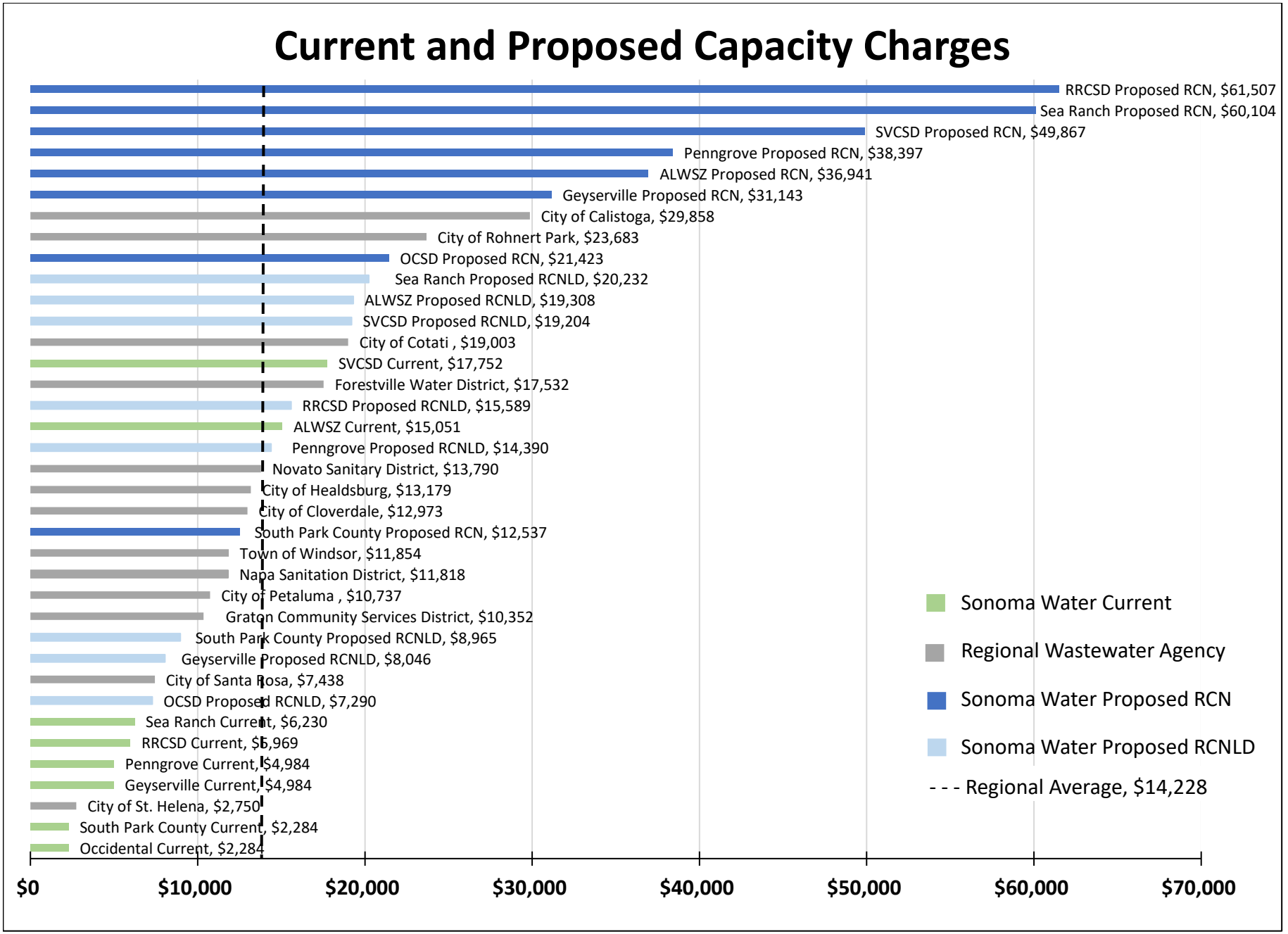
Table 8
Sonoma Water
Wastewater Capacity Charges Study
System Summary - Replacement Costs New Less Depreciation

System Replacement Costs New Less Depreciation [1]	Airport/Larkfield /Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Escalation	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*	*($ 2024)*
System Asset Value								
Collection Lines	$71,135,636	$3,600,844	$9,190,094	$14,093,255	$1,364,188	$27,821,896	$137,650,506	$46,748,650
Recycled Water Pipe	0	0	0	0	0	0	40,842,900	0
Treatment	0	0	0	0	0	0	164,880,000	0
Infrastructure	17,912,551	343,564	1,773,488	104,401	2,491,605	33,234,566	23,617,042	2,272,816
Rights and Easements	66,435	3,009	7,115	3,075	380	23,139	2,990,544	700
Maintenance and Equipment	290,789	48,528	0	98,043	0	198,769	261,353	0
Land	2,867,704	201,640	0	0	0	418,299	7,303,903	0
Grants [2]	(130,478)	(38,204)	(530,617)	0	(1,790,356)	(8,071,292)	(11,636,449)	(477,543)
Total Asset Replacement Costs	$92,142,636	$4,159,381	$10,440,080	$14,298,773	$2,065,816	$53,625,378	$365,909,800	$48,544,622
Less Outstanding Principal Net of Cash Reserves								
Outstanding Principal [3]	$1,163,460	$0	$0	$0	$0	$1,454,823	$23,822,751	$824,717
Cash Reserves [4]	7,343,946	723,798	1,964,189	1,077,572	2,194,464	9,508,168	35,041,078	17,181,104
Net Principal Outstanding (Maximum of $0)	$0	$0	$0	$0	$0	$0	$0	$0
Total Value of Assets for Capacity Fee	**$92,142,636**	**$4,159,381**	**$10,440,080**	**$14,298,773**	**$2,065,816**	**$53,625,378**	**$365,909,800**	**$48,544,622**

1, Estimated replacement cost in today's dollars less accumulated depreciation in today's dollars.
2, Grant funded capital identified by Staff.
3, Source: Comprehensive Annual Financial Reports, Schedule of Long-Term Obligations.
4, Source: Sonoma Water Cash Balances as of June 30, 2024 (unaudited).

Table 9
Sonoma Water
Wastewater Capacity Charges Study
Wastewater Capacity Charge Derivation - RCNLD

Capacity Charge Derivation Replacement Costs New Less Depreciation	Airport/Larkfield/ Wikiup	Geyserville	Penngrove	Sea Ranch	Occidental County	Russian River County	Sonoma Valley County	South Park County
Current Fee per ESD	**$15,051**	**$4,984**	**$4,984**	**$6,230**	**$2,284**	**$5,969**	**$17,752**	**$2,284**
Inflation Adj. Current Fee per ESD	*$15,051*	*$4,984*	*$4,984*	*$6,230*	*$5,127*	*$12,422*	*$17,752*	*$5,127*
Total Value RCLD	$92,142,636	$4,159,381	$10,440,080	$14,298,773	$2,065,816	$53,625,378	$365,909,800	$48,544,622
Horizon Year ESDs	4,772	517	726	707	283	3,440	19,054	5,415
Capacity Charge per ESD	**$19,308**	**$8,046**	**$14,390**	**$20,232**	**$7,290**	**$15,589**	**$19,204**	**$8,965**


Current and Proposed Capacity Charges
RRCSD Proposed RCN, $61,507
Sea Ranch Proposed RCN, $60,104
SVCSD Proposed RCN, $49,867
Penngrove Proposed RCN, $38,397
ALWSZ Proposed RCN, $36,941
Geyserville Proposed RCN, $31,143
City of Calistoga, $29,858
City of Rohnert Park, $23,683
OCSD Proposed RCN, $21,423
Sea Ranch Proposed RCNLD, $20,232
ALWSZ Proposed RCNLD, $19,308
SVCSD Proposed RCNLD, $19,204
City of Cotati , $19,003
SVCSD Current, $17,752
Forestville Water District, $17,532
RRCSD Proposed RCNLD, $15,589
ALWSZ Current, $15,051
Penngrove Proposed RCNLD, $14,390
Novato Sanitary District, $13,790
City of Healdsburg, $13,179
City of Cloverdale, $12,973
South Park County Proposed RCN, $12,537
Town of Windsor, $11,854
Napa Sanitation District, $11,818
City of Petaluma , $10,737
Graton Community Services District, $10,352
South Park County Proposed RCNLD, $8,965
Geyserville Proposed RCNLD, $8,046
City of Santa Rosa, $7,438
OCSD Proposed RCNLD, $7,290
Sea Ranch Current, $6,230
RRCSD Current, $5,969
Penngrove Current, $4,984
Geyserville Current, $4,984
City of St. Helena, $2,750
South Park County Current, $2,284
Occidental Current, $2,284
Sonoma Water Current
Regional Wastewater Agency
Sonoma Water Proposed RCN
Sonoma Water Proposed RCNLD
Regional Average, $14,228
$0
$10,000
$20,000
$30,000
$40,000
$50,000
$60,000
$70,000