

AGENDA

REMOTE MEETING NOTICE

This meeting will be accessible by remote video conferencing. Please be advised that while the District will endeavor to ensure these remote participation methods are available, the District does not guarantee that they will be technically feasible or work all the time. Further, the District reserves the right to terminate these remote participation methods (Subject to Brown Act Restrictions) at any time and for whatever reason. The public may observe and participate in this meeting remotely via Zoom as set forth below.

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TO SPEAK DURING PUBLIC COMMENT USING ZOOM

- The Board President will announce when it is time for Public Comment.
- Click on the Raise Hand icon if you would like to speak during Public Comment.
- Your name will be called on when it's your turn to speak.
- When your name is called, you will be prompted to unmute yourself.
- You will have three (3) minutes to speak. When your time is up, you will be muted.

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- The Board President will call the item and staff will begin the staff report.
- Click on the Raise Hand icon if you would like to speak on the item.
- Your name will be called on when it's your turn to speak.
- When your name is called, you will be prompted to unmute yourself.
- You will have three (3) minutes to speak. When your time is up, you will be muted.
- You will repeat this process for each item you want to speak on.

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Join Meeting Electronically at:

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<https://us02web.zoom.us/j/89417304377?pwd=lutazYF6fHSnxAbi3CdSUZraEx5fHq.1>

Meeting ID: 894 1730 4377

Passcode: 111233

Please attend in person or by submitting your comment via email to:
RMangus@GoletaSanitary.Org

A G E N D A
REGULAR MEETING OF THE GOVERNING BOARD
OF THE GOLETA SANITARY DISTRICT
A PUBLIC AGENCY

One William Moffett Place
Goleta, California 93117

May 18, 2026

CALL TO ORDER: 6:30 p.m.

ROLL CALL OF MEMBERS

BOARD MEMBERS: Steven T. Majoewsky
Dean Nevins
Jonathan Frye
Edward Fuller
Joseph Glancy

CONSIDERATION OF THE MINUTES OF THE BOARD MEETING

The Board will consider approval of the Minutes of the Regular Meeting of May 04, 2026.

PUBLIC COMMENTS - Members of the public may address the Board on items within the jurisdiction of the Board. Under provisions of the Brown Act, the Board is prohibited from taking action on items not listed on the agenda. Please limit your remarks to three (3) minutes and if you wish, state your name and address for the record.

POSTING OF AGENDA – The agenda notice for this meeting was posted at the main gate of the Goleta Sanitary District and on the District’s web site 72 hours in advance of the meeting.

BUSINESS:

1. UPDATE ON SEWER CONNECTION AND ANNEXATION FEE REPORT BY RAFTELIS
(Board may take action on this item)
2. UPDATE ON NUTRIENT MANAGEMENT STUDY CONDUCTED BY HAZEN AND SAWYER
3. CLOSED SESSION
 - (i) PUBLIC COMMENTS ON CLOSED SESSION ITEM
 - (ii) DESIGNATION OF STEVE WAGNER, GENERAL MANAGER, AS DISTRICT REPRESENTATIVE FOR LABOR NEGOTIATIONS

- (iii) CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957.6 - CONFERENCE WITH LABOR NEGOTIATOR REGARDING AGENCY DESIGNATED REPRESENTATIVE GENERAL MANAGER STEVE WAGNER UNREPRESENTED EMPLOYEES: ALL DISTRICT EMPLOYEES
(Board may take action on this item.)
 - (iv) PUBLIC REPORT ON CLOSED SESSION
4. GENERAL MANAGER'S REPORT
 5. LEGAL COUNSEL'S REPORT
 6. COMMITTEE/DIRECTOR'S REPORTS AND APPROVAL/RATIFICATION OF DIRECTOR'S ACTIVITIES
 7. PRESIDENT'S REPORT
 8. ITEMS FOR FUTURE MEETINGS
 9. CORRESPONDENCE
(The Board will consider correspondence received by and sent by the District since the last Board Meeting.)
 10. APPROVAL OF BOARD COMPENSATION AND EXPENSES AND RATIFICATION OF CLAIMS PAID BY THE DISTRICT
(The Board will be asked to ratify claims.)

ADJOURNMENT

Persons with a disability who require any disability-related modification or accommodation, including auxiliary aids or services, in order to participate in the meeting are asked to contact the District's Finance Director at least 3 hours prior to the meeting by telephone at (805) 967-4519 or by email at info@goletasanitary.org.

Any public records which are distributed less than 72 hours prior to this meeting to all, or a majority of all, of the District's Board members in connection with any agenda item (other than closed sessions) will be available for public inspection at the time of such distribution at the District's office located at One William Moffett Place, Goleta, California 93117.

MINUTES

MINUTES
REGULAR MEETING OF THE GOVERNING BOARD
GOLETA SANITARY DISTRICT
A PUBLIC AGENCY
DISTRICT OFFICE CONFERENCE ROOM
ONE WILLIAM MOFFETT PLACE
GOLETA, CALIFORNIA 93117

May 4, 2026

- CALL TO ORDER:** President Majoewsky called the meeting to order at 6:30 p.m.
- BOARD MEMBERS PRESENT:** Steven T. Majoewsky, Dean Nevins, Jonathan Frye, Edward Fuller, Joseph Glancy
- BOARD MEMBERS ABSENT:** None
- STAFF MEMBERS PRESENT:** Steve Wagner, General Manager/District Engineer, Vyto Adomaitis, Assistant General Manager, Rob Mangus, Finance Director/Board Secretary, Guisel Razo, Interim Finance Manager (via Zoom), Reese Wilson, Engineering Manager, and Ryan Guiboa, General Counsel (via Zoom)
- OTHERS PRESENT:** Tom Evans, Director, Goleta Water District (via Zoom)
Craig Geyer, Director, Goleta West Sanitary District (via Zoom)
Bill Rosen, Newly appointed Director, Goleta West Sanitary District
Joseph Hilliard, General Manager, Goleta West Sanitary District (via Zoom)
- APPROVAL OF MINUTES:** Director Nevins made a motion, seconded by Director Fuller, to approve the minutes of the Regular Board meeting of 04/20/2026. The motion carried by the following vote:
- (26/05/2112)
- | | | |
|----------|---|---|
| AYES: | 5 | Majoewsky, Nevins, Frye, Fuller, Glancy |
| NOES: | | None |
| ABSENT: | | None |
| ABSTAIN: | | None |
- POSTING OF AGENDA:** The agenda notice for this meeting was posted at the main gate of the Goleta Sanitary District and on the District's website 72 hours in advance of the meeting.
- PUBLIC COMMENTS:** None

BUSINESS:

1. ANNUAL PRESENTATION ON THE STATE OF THE PLANT FACILITIES AND ANTICIPATED SIGNIFICANT PROJECTS PURSUANT TO THE DISTRICT'S PROJECT NOTIFICATION POLICY

Mr. Wagner gave the presentation to the Board and no Board action was taken.

2. CONSIDERATION OF A CONTRACT AMENDMENT REQUEST BY RAFTELIS FOR COMPLETION OF A FEE AND SEWER RATE STUDY

Mr. Wagner gave the staff report.

Director Nevins made a motion, seconded by Director Frye to authorize the General Manger to execute a contract amendment with Raftelis in the amount \$20,000.00 for completion of the Fee and Sewer Rate Study.

The motion carried by the following vote:

(26/05/2113)

AYES:	5	Majoewsky, Nevins, Frye, Fuller, Glancy
NOES:		None
ABSENT:		None
ABSTAIN:		None

3. CONSIDERATION OF APPROVAL OF UPDATED CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES

Mr. Wagner gave the staff report.

Director Fuller made a motion, seconded by Director Nevins to approve and adopt Resolution Number 26-730 adopting the 2026 Local Guidelines for implementing the California Environmental Quality Act (CEQA) for Goleta Sanitary District.

The motion carried by the following vote:

(26/05/2114)

AYES:	5	Majoewsky, Nevins, Frye, Fuller, Glancy
NOES:		None
ABSENT:		None
ABSTAIN:		None

4. CLOSED SESSION (Board consensus was to move this item to the end of the meeting)

(i) PUBLIC COMMENTS ON CLOSED SESSION ITEM

None

- (ii) DESIGNATION OF STEVE WAGNER, GENERAL MANAGER, AS DISTRICT REPRESENTATIVE FOR LABOR NEGOTIATIONS
- (iii) CLOSED SESSION PURSUANT TO GOVERNMENT CODE SECTION 54957.6 - CONFERENCE WITH LABOR NEGOTIATOR REGARDING AGENCY DESIGNATED REPRESENTATIVE GENERAL MANAGER STEVE WAGNER UNREPRESENTED EMPLOYEES: ALL DISTRICT EMPLOYEES (Board may take action on this item.)

Board entered closed session at 7:47 p.m.
Board returned to open session at 8:36 p.m.

There was no reportable action in Closed Session

5. GENERAL MANAGER'S REPORT
Mr. Wagner gave the report.

6. LEGAL COUNSEL'S REPORT
Mr. Guiboa – No report.

7. COMMITTEE/DIRECTORS' REPORTS AND APPROVAL/RATIFICATION OF DIRECTORS' ACTIVITIES

Director Nevins – No report.

Director Frye – No report.

Director Fuller – No report.

Director Glancy – No report.

8. PRESIDENT'S REPORT
President Majoewsky – No report.

9. ITEMS FOR FUTURE MEETINGS
No Board action was taken to return with an item.

10. CORRESPONDENCE
The Board reviewed and discussed the list of correspondence to and from the District in the agenda.

11. APPROVAL OF BOARD COMPENSATION AND EXPENSES AND RATIFICATION OF CLAIMS PAID BY THE DISTRICT

Director Nevins made a motion, seconded by Director Glancy, to ratify and approve the claims, for the period 04/21/2026 to 05/04/2026 as follows:

Running Expense Fund #4640	\$	372,593.70
Capital Reserve Fund #4650	\$	166,016.50

The motion carried by the following vote:

(26/05/2115)

AYES: 5 Majoewsky, Nevins, Frye, Fuller, Glancy
NOES: None
ABSENT: None
ABSTAIN: None

ADJOURNMENT

There being no further business, the meeting was adjourned at 8:38 p.m.

ATTEST

Steven T. Majoewsky
Governing Board President

Robert O. Mangus, Jr.
Governing Board Secretary

AGENDA ITEM #1

AGENDA ITEM: 1

MEETING DATE: May 18, 2026

I. NATURE OF ITEM

Update on Sewer Connection and Annexation Fee Report by Raftelis

II. BACKGROUND INFORMATION

On February 3, 2025, the Board authorized the General Manager to enter into a contract with Raftelis for the preparation of a Sewer Rate and Fee Study. The Sewer Rate and Fee Study Report and associated recommendations were presented to the Board on March 23, 2026. The remainder of Raftelis' scope of analysis, the Connection and Annexation Fee Study, is now complete. The major objectives of the Connection and Annexation Fee Study include:

- Review of the existing connection and annexation fees including the basis for, structure of, and charge of each fee
- Updating the charges to reflect the current state of the District's collection and treatment facilities and corresponding user demands on the system
- Establish charges that are fair to both future users and to existing users who have previously invested, and reinvested, in the sewer collection and treatment facilities
- Align the fee structure with the best available data and common estimates from the Sewer Rate and Fee Study

Connection fees typically cover one-time capital charges assessed against a new development to recover the proportional share of capital facility investment necessary to accommodate growth. In current District ordinances, connection fees are referred to as "Capacity Fees." Annexation fees allow new properties to achieve equity with properties already within the District by recognizing tax revenues to the District contributed by the property owners within the District.

Over the course of this project, staff worked closely with Raftelis to review existing fees and to calculate new, proposed fees. The District's connection fees were last updated in January 2018 in Ordinance No. 87, and annexation fees were updated in March 2018 in Ordinance No. 88. Both ordinances are attached for reference. Currently, the District's connection fee is \$2,750 per single-family residence or Equivalent Residential Unit (ERU). The District's annexation fee is expressed as a fee per acre. The current fee is \$2,546 per acre being annexed, or \$2,546 for properties of one acre or less, plus a \$200 application charge for processing.

Since the District has sufficient remaining capacity to meet the projected demands of development, Raftelis recommended using a method for calculating connection fees known as Equity Buy-In. This method is based on the premise that new customers are entitled to service at the same cost as existing customers while allowing the District to recover the historical costs of plant investment.

District staff worked closely with Raftelis to determine the value of the existing sewer system facilities, which is expressed in terms of replacement cost less depreciation (RCLD). This approach estimates the value of the system in today's dollars while acknowledging that system's facilities, in whole, are not new and have partially or fully depreciated. The value of the system, including reserves, is then divided by the number of existing ERUs connected to the system, to determine the "equity" of each existing user and derive the proposed buy-in cost of the capacity fee for a new user.

The analysis conducted by Raftelis utilized the Equity Buy-In method and an updated flow per ERU of 150 gallons per day (GPD), consistent with the determination of sewer service charges within the Sewer Rate and Fee Study. The proposed sewer connection fee is \$5,533 per ERU or \$36.89/gpd. For a new single family residential dwelling, the sewer connection fee will increase by \$2,783 per ERU.

Property owners in the District have paid assessed valuation (AV) based property taxes since the formation of the District. Developed properties pay higher taxes than undeveloped properties by virtue of their higher assessed values. Annexation fees are determined by estimating the present value of the taxes that the annexing property would have paid.

The District receives approximately \$200,000 per year in property tax revenues from properties within the service area. While the value is a material amount of the District's finances on its own, on an equivalent parcel basis the value is de minimis. A high-level estimate is an AV-based annexation fee of about \$50 per ERU, which would result in a very small amount of revenue the District would earn per annexation. Based on the costs of staff time in calculating an annexation charge, in review with staff, Raftelis believes that the effort would cost more in staff labor than the total charge. For this reason, Raftelis recommended that the District revise its annexation fee to cover only the administrative costs that the District incurs to process the annexation. These costs, estimated at \$200 per ERU, will be passed on to customers based on the administrative time expended in processing annexations.

Single Family Residential	Current	Proposed
Connection Fee (1 ERU)	\$2,750	\$5,533
Annexation Fee	\$2,546	\$0
Annexation Processing	\$200	\$200
Combined Fee w/Out Annexation	\$2,750	\$5,533
Combined Fee w/Annexation	\$5,496	\$5,733

III. COMMENTS AND RECOMMENDATIONS

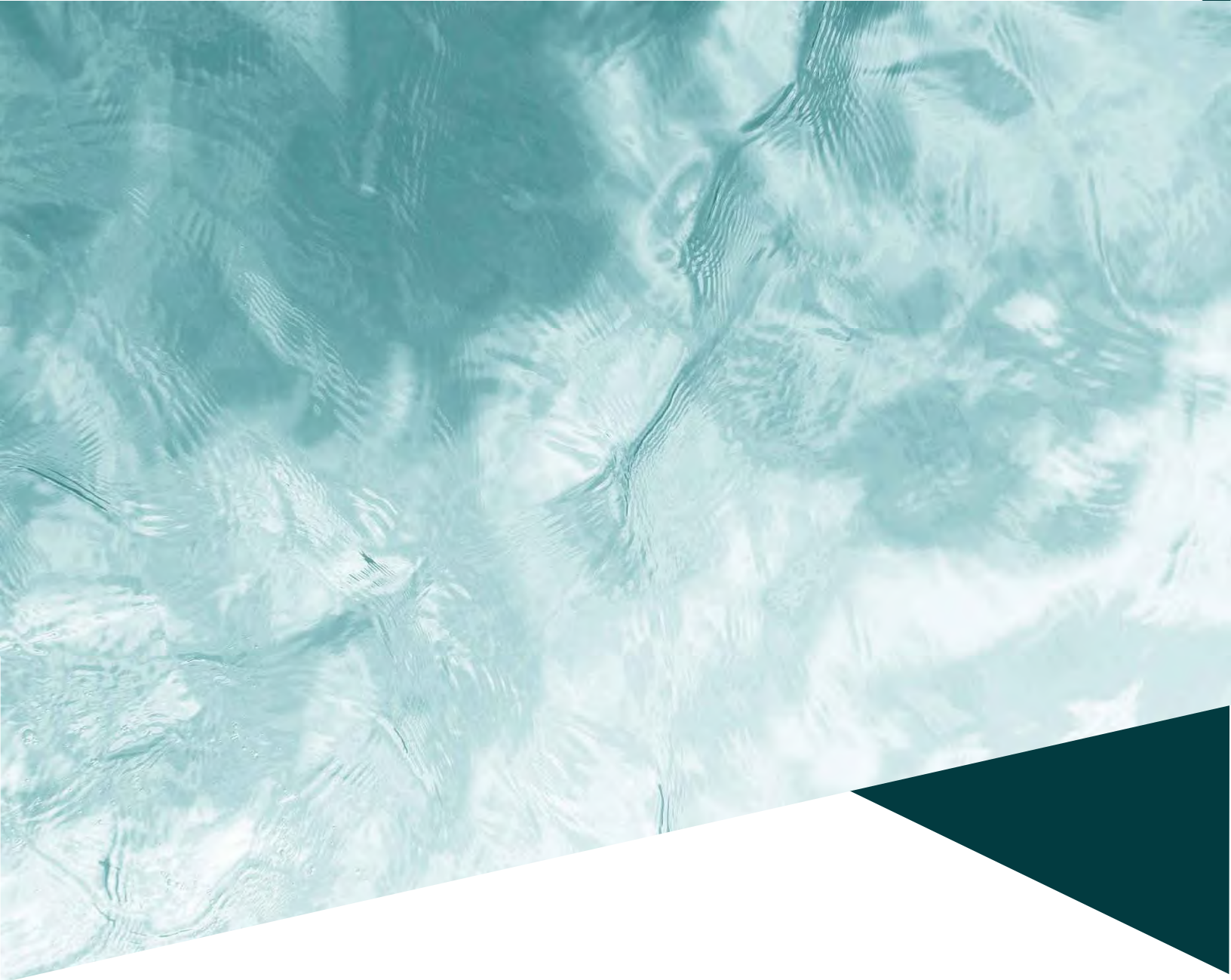
Staff recommends that Board direct staff to prepare the requisite ordinances to repeal and replace Ordinances Nos. 87 and 88 and adopt the proposed connection and annexation fees. If so directed, staff will return to the Board with draft ordinances for consideration and action at a future meeting.

IV. REFERENCE MATERIAL

Raftelis Sewer Connection and Annexation Fee Report

Ordinance No. 87

Ordinance No. 88



GOLETA SANITARY DISTRICT
Sewer Connection and
Annexation Fee Report

REPORT / May 12, 2026



May 12, 2026

Mr. Steve Wagner
General Manager
Goleta Sanitary District
1 William Moffett Place
Goleta CA 93117

Subject: Sewer Connection and Annexation Fee Report

Dear Mr. Wagner:

Raftelis is pleased to provide this report for the Goleta Sanitary District (GSD or District). The study proposes updates to the District's fees for new development, including the annexation fees (the process of entering a land parcel into the service area of the District) and the connection fees (the cost of purchasing a unit of capacity in the District's facilities). This report details the methodology for the proposed fees and presents the recommended sewer connection fees and impacts.

It has been a pleasure working with you, and we thank you and other GSD staff for the support provided to Raftelis during this study.

Sincerely,



Sudhir Pardiwala, P.E.
Senior Principal



Kevin Kostiuk
Senior Manager



Journ Galvan
Consultant

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1. Executive Summary

1.1. Background

The Goleta Sanitary District (GSD) is a public utility agency established in 1942 to protect public health and the environment by providing essential wastewater collection, treatment, and resource recovery services. The District serves a population of approximately 80,000 residents within the Goleta Valley, which includes the City of Goleta, the University of California at Santa Barbara (UCSB), the Santa Barbara Airport, and unincorporated areas of Santa Barbara County. As a California Special District, GSD operates as an independent local government agency.

The mission of the Goleta Sanitary District is to provide safe, reliable, and cost-effective wastewater services while promoting environmental stewardship through innovative water reclamation and resource recovery. The District's core operations encompass the management of over 135 miles of sewer collection mains and the operation of a state-of-the-art Water Resource Recovery Facility (WRRF). The WRRF can treat up to 9 million gallons per day (MGD) of wastewater. Treated effluent not reused is discharged one mile offshore via the District's ocean outfall. The District provides a high level of secondary and tertiary treatment, ensuring that treated effluent meets or exceeds stringent California Title 22 standards for environmental discharge and reuse. Additionally, the District utilizes advanced anaerobic digestion to process biosolids, which can be repurposed for soil amendment, further reducing the agency's environmental footprint.

GSD is governed by a five-member elected Board of Directors who oversee the District's strategic direction and financial health. The agency's operations and capital costs are funded primarily through sewer service charges from retail customers and cost sharing of treatment facility costs with partner agencies including Goleta West Sanitary District (GWSD), UCSB, Santa Barbara County, and the Santa Barbara Airport. Rehabilitation of aging collection systems and the modernization of treatment technologies ensures compliance with evolving state and federal environmental regulations.

1.2. Background of the Study

The District engaged Raftelis in 2025 to conduct an updated sewer connection fee study in conjunction with the sewer rate and fee study. The objective was to review the existing fees, evaluate alternatives, and update as appropriate, the sewer connection and annexation fees. This report documents the resultant findings, analyses, and proposed changes to the District's sewer connection fees. The updated connection fees documented in this report are in alignment with the rules and regulations of California State Government Code Section 66013. This report is the formal technical documentation in support of modifications to the sewer connection and annexation fees within the District's service area.

The major objectives of the study include the following:

- Review of the existing connection and annexation fees including the basis for, structure of, and charge of each fee
- Updates the charges to reflect the current state of the District's collection and treatment facilities and corresponding user demands on the systems
- Establish charges that are fair to both future users and to existing users who have previously invested, and reinvested, in the sewer collection and treatment facilities

- Align the fee structure with the best available data and common estimates from the sewer rate and fee study

1.3. Connection Fees

Connection fees are also commonly known as developer fees, development impact fees, capacity fees, and system development charges, among others. This report uses the term connection fees reflecting the nomenclature used by GSD. Connection fees are one-time capital charges assessed against a new development to recover the proportional share of capital facility investment necessary to accommodate growth. Connection fees are codified in the California Government Code Sections 66000-66025 (also known as the Mitigation Fee Act). Connection fees must reflect the link between the fee imposed on, and the benefit received by, a new connection to the system. The fee charged may not exceed the reasonable share of costs associated with providing the service.

Broadly, utilities use one of three different methodologies to calculate connection fees: Buy-In, Incremental, or Hybrid; with variations of each dictated by local community and system characteristics, as well as policy objectives. Utilities have broad latitude in the method and approach used to calculate fees provided the fees reflect the benefit and do not exceed the reasonable costs for providing service to the connection. These fees are designed to be proportional to the burden placed on the system by new connections.

1.4. Current Fees

The District last revised its sewer connection fees in January 2018, implementing changes July 1, 2018¹. Since that time fees have been updated to account for construction cost inflation. The District escalates fees each July 1 based on the 12-month change (April to April) in the Bureau of Labor Statistics (BLS) Producer Price Index (PPI) – Construction for Government². The existing connection fee is expressed as an Equivalent Residential Unit (ERU) and the current fee is \$2,750 per ERU. One ERU is equivalent to a Single Family Residential (SFR) dwelling unit and currently represents 203 gallons per day (gpd) of flow.

In addition to the connection fee, the existing annexation fee is a function of GSD's existing facilities. The District last revised its annexation fee in March 2018³. These fees were developed based on the equity in the maintenance of the District's facilities and are separate and distinct from the connection fees. The existing annexation fee is expressed as a fee per acre and the current per-acre fee is \$2,546 multiplied by the total acreage of the property being annexed, or \$2,546 for properties of one acre or less, plus a \$200 application charge for processing.

While each property is unique, for a typical SFR home, the total fees are \$5,496.

¹ Goleta Sanitary District Ordinance No. 87 dated January 15, 2018.

² WPUFD432 is the Bureau of Labor Statistics (BLS) Series ID for the **Producer Price Index (PPI) by Commodity: Final Demand: Construction for Government**. The index measures the average change over time in the selling prices charged by contractors for new, repair, and maintenance construction work performed for government.

³ Goleta Sanitary District Ordinance No. 88 dated March 5, 2018.

1.5. Recommended Fees

1.5.1. Connection Fees

Since the District has existing capacity in its sewer system to meet the needs of new residential, commercial, and industrial customers, it is reasonable and appropriate to determine connection fees based on the Buy-In method. Raftelis worked closely with District staff to determine the value of the existing sewer system facilities, which is expressed in terms of replacement cost less depreciation (RCNLD). This approach estimates the system in today’s dollars while acknowledging that system’s facilities, in whole, are not new and subject to depreciation. The value of the system, including reserves, is spread over the existing system utilization to determine the “equity” of existing users and derive the proposed buy-in connection fees.

The analysis herein utilizes the Equity Buy-In method and an updated flow per ERU of 150 gpd, consistent with the analysis and determination of sewer service charges within the sewer rate and fee study. The calculated and proposed sewer connection fee is \$5,533 per equivalent residential unit (ERU) or \$36.89/gpd.

Table 1-1 shows the schedule of proposed sewer connection fees as well as the current schedule. For a new single family residential (SFR) dwelling, the sewer connection fee will increase by \$2,783 per dwelling unit. Values shown in report tables and figures are rounded to the digit shown. Therefore, any manual reproduction of the calculations shown may not match the precise results displayed in the report.

Table 1-1: Current and Proposed Connection Fees

Connection Fees	\$/ERU
Current	\$2,750
Proposed	\$5,533
<i>Difference</i>	<i>\$2,783</i>

1.5.2. Annexation Fees

Annexation fees allow the new properties to achieve equity with the properties in the District by recognizing tax revenues to the District contributed by the property owners within the District.

Property owners in the District have paid assessed valuation (AV) based property taxes since the formation of the District. Developed properties paid higher taxes than undeveloped properties by virtue of their higher assessed values. Annexation fees are determined by estimating the present value of the taxes that the annexing property would have paid.

GSD receives approximately \$200,000 per year in property tax revenues from properties within the service area. While the value is a material amount of the District’s finances on its own, on an equivalent parcel basis the value is de minimis. A high-level estimate is an AV-based annexation fee of about \$50 per ERU which would result in a very small amount of revenue earned by the District. Based on the costs of staff time in calculating an annexation charge, and in discussions with staff, it is our opinion that the effort would cost more in staff labor than the total charge. For this reason, Raftelis recommends that the annexation fee cover only the administrative costs that the District incurs to process the annexation. These costs should be passed on to customers based on the administrative time expended in processing annexations.

If historic data exists to identify the standard, or routine, cost of processing an annexation, the District could schedule a processing fee (i.e., \$250 per annexation). Typical single family residential annexation can be a fixed amount based on the cost incurred which should be generally consistent for residential connections. For non-residential connections, annexation processing costs may vary, therefore, the District could base each annexation on a time and materials basis.

Table 1-2: Current and Proposed Annexation Fees

Annexation Fees	
Current	\$2,546 / Acre ⁴
Proposed	Processing Time

1.5.3. Total Combined Fees and Impacts

Table 1-3 shows the estimated change in total fees for a new single family residential connection. Impacts to other user classes are highly dependent on the user classification, estimated wastewater flow generation, and location. Combined fees are shown both with and without annexation, as this fee only applies to parcels currently outside the District’s service area.

Table 1-3: Single Family Residential Fee Impacts – Current and Proposed

Single Family Residential	Current	Proposed
Connection Fee (1 ERU)	\$2,750	\$5,533
Annexation Fee	\$2,546	\$0
Annexation Processing ⁵ (if out of District)	\$200	\$200
Combined Fee w/Out Annexation	\$2,750	\$5,533
Combined Fee w/Annexation	\$5,496	\$5,733

Figure 1-1 and Figure 1-2 provides a comparison of connection/capacity fees charged by neighboring, regional, and peer agencies. The GSD current is first shown without the annexation fee (connection fee only) and then shown with the annexation fee (i.e. includes the existing connection fee and existing annexation fee). The GSD proposed represents the results of this study. The average connection fee for the agencies surveyed (excluding the District’s current and proposed charge) is approximately \$6,800 per equivalent residential unit. The proposed GSD connection fee would be in the middle of surveyed agencies.

⁴ One acre minimum

⁵ Assumes current and proposed would be the same as both are for administrative processing

Figure 1-1: Single Family Residential Connection Fee Comparison (With GSD Annexation)

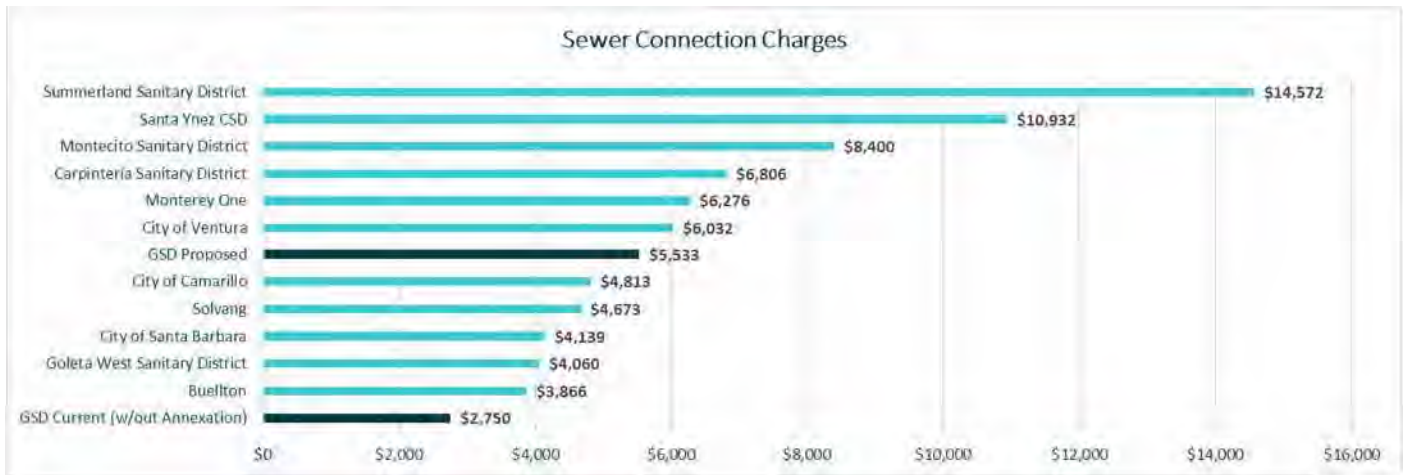


Figure 1-2: Single Family Residential Connection Fee Comparison (Without GSD Annexation)



2. Background

2.1. Economic Framework

For publicly owned systems, most of the assets are typically paid for by the contributions of existing customers through rates, charges, securing debt, and taxes. In service areas that incorporate new customers, the infrastructure developed by previous customers is generally extended towards the service of new customers. Existing customers' investment in the existing system capacity allows newly connecting customers to take advantage of unused surplus capacity. To further economic equality among new and existing customers, new connectors will typically "Buy-In" to the existing and pre-funded facilities based on the existing assets, effectively putting them on par with existing customers. In other words, the new users are buying into the existing system based on the replacement costs of existing assets to continue to provide the same level of service to new customers through repairs, expansions, and upgrades to the system.

The basic economic philosophy behind connection fees is that the costs of providing service should be paid for by those that receive utility from the product. To effect fair distribution of the value of the system, the charge should reflect a reasonable estimate of the cost of providing capacity to new users and not unduly burden existing users through a comparable rate increase. Accordingly, many utilities make this philosophy one of their primary guiding principles when developing their connection fee structure.

The philosophy that service should be paid for by those that receive utility from the product is often referred to as "growth-should-pay-for-growth." The principal is summarized in the American Water Works Association (AWWA) Manual M26: Water Rates and Related Charges:

"The purpose of designing customer-contributed-capital system charges is to prevent or reduce the inequity to existing customers that results when these customers must pay the increase in water rates that are needed to pay for added plant costs for new customers. Contributed capital reduces the need for new outside sources of capital, which ordinarily has been serviced from the revenue stream. Under a system of contributed capital, many water utilities are able to finance required facilities by use of a 'growth-pays-for-growth' policy."

This principle, in general, applies to water, wastewater, and storm drainage systems. In the excerpt above, customer-contributed-capital system charges are equivalent to connection fees.

2.2. Legal Framework and California Requirements

In establishing connection fees, it is important to understand and comply with local laws and regulations governing the establishment, calculation, and implementation of new or adjusted connection fees. The following sections summarize Raftelis' understanding⁶ of the regulations applicable to developing connection fees for the District.

⁶ Raftelis does not practice law, nor does it provide legal advice. Our discussion provides a general overview of Raftelis' understanding as utility rate and charges practitioners and is labeled "Legal Framework and California Requirements" for literary convenience only. The City should consult with its legal counsel for clarification and/or specific guidance.

Connection fees must be established based on a reasonable relationship to the costs and benefits of the development or expansion. Courts have long used a standard of reasonableness to evaluate the legality of development charges. The basic statutory standards governing connection fees are embodied by California Government Code Sections 66013, 66016, 66022, and 66023. Government Code Section 66013 contains requirements specific to determining utility development charges:

“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 the fee or charge 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.”

Section 66013 also includes the following relevant general requirements:

- Local agencies must follow a process set forth in the law, making certain determinations regarding the purpose and use of the charge; they must establish a nexus, or relationship, between a development project and the improvement being financed with the charge.

3. Methodology Overview

A connection or capacity fee is a one-time charge paid by a new sewer system customer for the cost of backbone facilities and/or incremental expansion necessary to provide sewer system capacity to a new or expanded customer connection. Revenues generated by this charge are used to pay for sewer facilities. Backbone facilities refer to those components of the system that are necessary to provide service to all customers, inclusive of treatment and major wastewater collection lines.

A connection fee may be developed as a single charge for the entire system or as individual charges for each component (i.e., collection separate from treatment). The District has historically calculated the connection fee as a single charge, which is the most common approach across California.

The District's current sewer connection fee is calculated on an ERU basis for all customers. Each new connection is estimated based on the ERU definition of 203 gpd of wastewater flow. Multi-Family Residential (MFR) connections pay a fractional amount (i.e., less than 1 ERU) based on the estimated wastewater generated per MFR dwelling unit. Commercial connections may pay a multiple of the ERU dependent on the estimated wastewater generated.

3.1. Connection Fee Methodologies

The method for calculating connection fees generally utilizes one of the following three approaches: Buy-In, Incremental, or Hybrid. The Buy-In approach is designed to recover the historical costs of plant investment in proportion to the amount of built capacity, some of which is available for new growth. The Incremental approach is designed to recover the costs of future growth-related projects and the additional capacity those projects will yield. The Hybrid approach is appropriate where some remaining capacity is available in the existing system and where new, future facilities are required for development.

3.1.1. Buy-In Method

The Buy-In Method is based on the premise that new customers are entitled to service at the same cost as existing customers. Under this approach, new customers pay only an amount equal to the current system value, either using the original cost or replacement cost as the valuation basis and either netting the value of depreciation or not. This net investment, or value of the system, is then divided by the current capacity utilization on the system by existing users to determine the Buy-In cost per unit.

For example, if the existing system has 100 equivalent dwelling units and the new connector uses an equivalent unit, then the new customer would pay 1/100 of the total value of the existing system. By contributing this connection fee, the new connector has "bought in" to the existing system. The new user has effectively acquired a financial position on par with existing customers and will face future capital re-investment on equal financial footing with those customers. This approach is suitable when: (1) an agency has built most or all of their facilities and only a small, or no, portion of future facilities are required for build-out development, (2) an agency does not have a detailed adopted long-term capital improvement plan, or (3) an agency's "build-out" date is so far out in the future that it is difficult to accurately project growth and required facilities with precision. **Figure 3-1** shows the framework for calculating an Equity Buy-In connection fee.

Figure 3-1: Formula for Equity Buy-In Approach



3.1.2. Incremental Cost Method

The Incremental-Cost Method states that new development (new users) should pay for the additional capacity and expansions necessary to accommodate them. This method is typically used when there are specific capital improvements required to furnish growth for new development. Under the Incremental-Cost Method, growth-related capital improvements are allocated to new development based on their estimated usage or capacity requirements, irrespective of the value of past investments made by existing customers.

For instance, if it costs X dollars (\$X) to provide sewer collection and treatment for 100 additional equivalent dwelling units and a new connector uses one of those equivalents, then the new user would pay \$X/100 to connect to the system. In other words, new customers pay the incremental cost of capacity based on the estimated cost of the new facility projects. This method is generally used when detailed facilities are identified for the capacity required to serve new customers and little to no existing system capacity is available for development. While California Code 66013 (b)(3) does not define a specific period over which to include future projects, these periods can be as long as a master planning period. Figure 3-2 shows the framework for calculating an incremental cost connection fee.

Figure 3-2: Formula for Incremental Cost Method



3.1.3. Hybrid Method

The Hybrid Method is typically used where some capacity is available to serve new growth, but additional expansion is still necessary to accommodate new development. Under the hybrid method, the connection fee is based on a weighted average of the existing capacity value and the costs of necessary expansions (i.e., the Buy-In component and the Incremental-cost component).

Capital improvements that are required to serve existing users and expand system capacity to serve future customers may be included proportionally to the percentage of the cost specifically required for expansion of the system.

3.1.4. Recommended Methodology

Since the District has sufficient remaining capacity to meet the projected demands of development, Raftelis recommends using the Equity Buy-In Method.

3.2. Asset Cost Basis

Four principal methods can be used to estimate the value of existing facilities: original cost, replacement cost, original cost less depreciation (the same as “book value”), and replacement cost less depreciation.

3.2.1. Original Cost (OC)

The principal advantages of original cost valuation are relative simplicity and stability since the recorded costs of fixed assets are held constant. The major criticism levied against the original cost method is that it disregards changes in the time value of money, and future capital costs, which are attributable to inflation and other factors. As evidenced by history, prices tend to increase rather than to remain constant or decrease. This situation may be exacerbated since most water and sewer systems are developed over time on a piecemeal basis as demanded by the customer base and service area growth. Consequently, each asset addition is paid for with dollars of different purchasing power. When these outlays are added together to obtain a plant value, the result can be misleading. Additionally, original cost does not account for the depreciation of facilities and other assets as they age, which may not be representative of the state of the systems. We discuss depreciation in further detail below.

3.2.2. Replacement Cost (RC)

Changes in the value of the dollar over time, represented by cost inflation, is recognized by replacement cost. Replacement cost represents the cost of duplicating the existing facilities (or duplicating their functions) at current dollars. Unlike the original cost approach, the replacement cost approach recognizes price level changes that have occurred since plant construction and subsequent investments. The most accurate replacement cost valuation requires a physical inventory and appraisal of plant components in terms of their replacement costs at the time of valuation. However, with original cost records available, a reasonable approximation of replacement cost plant value can be easily derived by trending historical original costs. This approach employs the use of cost indices to express actual capital investment by the utility in current dollars. An obvious advantage of the replacement cost approach is that it accounts for changes in the value of money over time. However, just like original cost it does not account for the depreciation of facilities and other system assets.

3.2.3. Original Cost Less Depreciation (OCLD)

The current value of sewer facilities is materially affected by the effects of age. All assets have estimated useful lives, which vary by type. For example, pumps may have a 20-year life, buildings 50 years, and pipelines 40-80 years depending on the material of construction. Each year an asset is revalued by the fraction of its useful life relative to its original cost. This is referred to as straight line or linear depreciation. At the end of an asset’s useful life, it is worth zero dollars on paper, though it may still be in service. Depreciation accounts for estimated devaluation in system assets caused by wear and tear, decay, inadequacy, and obsolescence. To provide appropriate recognition of the effects of depreciation on existing systems, the original cost valuation can be expressed as net of depreciation to yield the original cost less depreciation. Accumulated depreciation is computed for each asset and reduces the valuation based on age or condition, from the respective total original cost.

3.2.4. Replacement Cost Less Depreciation (RCNLD)

The RCNLD method is identical to the original cost less depreciation valuation method, with the exception that asset cost and asset depreciation is expressed in today's dollars rather than the value of the dollar when the asset was placed in service. Original cost and depreciation are escalated using historical indices to reflect today's dollars. Depreciation in replacement cost dollars is then subtracted from the full replacement cost of the asset to yield replacement cost less depreciation, or RCNLD. RCNLD allows for an accounting of system assets in present value while also accounting for proportional devaluation via depreciation. To reiterate from Section 3.2.2, replacement cost is the common nomenclature; however, in the context of this study it is not a process to appraise or receive bids on replacing each existing asset or facility; it is instead a method of approximating the replacement cost of existing facilities based on historical construction cost increases.

3.2.5. Recommended Asset Valuation Method

Raftelis recommends using the RCNLD method to account for today's replacement cost for system improvements while acknowledging the remaining useful life of the system facilities. This valuation approach ensures that future users' investment represents a fair share of the system in both the accounting sense and the level of service these future users are purchasing.

4. Connection Fee Development

4.1. Buy-In System Value

The cost basis for determining the Buy-In connection fee is RCNLD. System assets data is current as of June 30, 2024, the last day of fiscal year (FY) 2024⁷. GSD staff provided a detailed capitalized asset database which included asset descriptions, in service date, original cost, accumulated depreciation, and a functional categorization, among other data.

OC is a summation of original cost by functional category. OCLD, also known as book value is the summation of original cost, net of depreciation, by functional category. RC is an estimate of original cost for each individual asset in today’s dollars based on construction cost escalation. Finally, RCNLD represents book value in today’s dollars. **Table 4-1** shows the GSD facilities cost information by asset function. The total represents all facilities (i.e., agency-wide). The total value of facilities in RCNLD is approximately \$91.1 million at June 30, 2024.

Table 4-1: GSD System Value – Agency-wide

Asset Summary by Function - Total	OC	OCLD	RC	RCNLD
COLLECTION SYSTEM	\$27,588,896	\$15,855,921	\$73,441,558	\$24,116,015
TREATMENT FACILITIES	\$64,404,679	\$29,859,476	\$119,390,039	\$43,429,510
PUMP STATION	\$7,132,929	\$4,637,367	\$10,608,686	\$5,168,537
OUTFALL	\$3,743,731	\$220,385	\$19,898,571	\$2,794,372
ADMINISTRATION	\$2,137,324	\$198,368	\$5,757,854	\$434,892
LABORATORY	\$0	\$0	\$0	\$0
RECLAMATION	\$15,683,312	\$3,965,157	\$37,869,934	\$9,100,589
IWC	\$58,992	\$27,177	\$90,572	\$28,264
FIRESTONE LIFT STATION	\$3,009,144	\$1,846,508	\$4,502,869	\$2,764,942
RECYCLED WATER ONLY	\$0	\$0	\$0	\$0
MISC	\$4,541,623	\$2,330,311	\$6,689,385	\$3,302,464
Total	\$128,300,629	\$58,940,670	\$278,249,468	\$91,139,584

Since the connection fees calculated in this study are for GSD’s retail service area, the total system value must be adjusted to account for the specific capital allocations between GSD and partner agencies. Capital cost allocations are shown in **Table 4-2**. GWSD is Goleta West Sanitation District, Airport is the Santa Barbara Municipal Airport, County is the County of Santa Barbara, UCSB is the University of California at Santa Barbara, and GWD is Goleta Water District. For purposes of this study, the allocations to GSD are the relevant cost allocation factors which are then applied against the total system value to derive the GSD share of system value.

⁷ The fiscal year begins on July 1 of each calendar year and runs through June 30 of the following year. For example, FY 2024 is July 1, 2023 through June 30, 2024.

Table 4-2: Capital Allocations by System Function

Agency	Plant Capacity (%)	Outfall Capacity (%)	Reclamation Capacity (%)	Collection System (%)
GSD	47.9%	55.8%	0%	100%
GWSD	40.8%	35.0%	0%	0%
Airport	2.8%	2.6%	0%	0%
County	1.4%	1.9%	0%	0%
UCSB	7.1%	4.7%	0%	0%
GWD	0%	0%	100%	0%

Table 4-3 shows the GSD retail service facilities cost information by asset function. The total represents the ownership of facilities utilized for GSD service and is net of ownership from other agencies. The GSD service system is estimated at approximately \$58.2 million in RCNLD as of June 30, 2024.

Table 4-3: GSD System Value – GSD Retail Service Area

Capital Allocation %	Asset Summary by Function GSD Local	OC	OCLD	RC	RCNLD
100%	COLLECTION SYSTEM	\$27,588,896	\$15,855,921	\$73,441,558	\$24,116,015
47.9%	TREATMENT FACILITIES	\$30,830,520	\$14,293,731	\$57,152,012	\$20,789,707
100%	PUMP STATION	\$7,132,929	\$4,637,367	\$10,608,686	\$5,168,537
55.8%	OUTFALL	\$2,089,376	\$122,997	\$11,105,393	\$1,559,539
100%	ADMINISTRATION	\$2,137,324	\$198,368	\$5,757,854	\$434,892
0%	RECLAMATION	\$0	\$0	\$0	\$0
100%	IWC	\$58,992	\$27,177	\$90,572	\$28,264
100%	FIRESTONE LIFT STATION	\$3,009,144	\$1,846,508	\$4,502,869	\$2,764,942
0%	RECYCLED WATER ONLY	\$0	\$0	\$0	\$0
100%	MISC	\$4,541,623	\$2,330,311	\$6,689,385	\$3,302,464
	Total	\$77,388,803	\$39,312,380	\$169,348,328	\$58,164,359

Table 4-4 shows the calculation of the adjusted value for the connection fee calculation. The RCNLD system value of \$58.2 million is adjusted to reflect the equity, or debt-free investment position, of the current customers as well as contributions in reserve for future capital reinvestment. First cash reserves are added to the asset valuation. Total cash reserves at July 1, 2025 (\$45,204,961) is adjusted by the portion of cash required for ongoing operating cash flow (\$7,161,116). This yields cash on hand, available and planned for future CIP expenditures. Second, outstanding debt principal is subtracted, since new customers, through future sewer service charges, will contribute to annual debt service payments. The outstanding principal balance at July 1, 2025 was \$12.4 million. The net of the system assets, capital reserves, and debt principal adjustment yields an adjusted value of approximately \$83.8 million for the connection fee calculation. This total represents the numerator in the equity buy-in connection fee calculation.

Table 4-4: System Value for Buy-In Connection Fee

System Assets	Value RCNLD
Collection System	\$24,116,015
Lift Stations	\$7,933,479
Treatment Plant	\$20,789,707
Outfall	\$1,559,539
Other	\$3,765,620
Total GSD Retail Service Area Assets	\$58,164,359
+ Capital Reserves	\$38,043,845
-Debt Principal	\$12,412,580
Adjusted Value for Connection Fee Calculation	\$83,795,624

4.2. Capacity Utilization

The District’s WRRF can treat up to 9 million gallons per day (MGD) of wastewater. Based on the capital allocation, the District’s share of capacity is approximately 4.3 MGD. As part of the sewer rate and fee study, Raftelis analyzed multi-year plant influent data to estimate flows to the WRRF from both GSD customers and other agencies. **Table 4-5** provides the three-year average for FY 2023 through FY 2025. Based on this multi-year analysis, the average daily flows from GSD retail service customers is 2.36 MGD. This value becomes the denominator in the equity buy-in connection fee calculation in the following section.

Table 4-5: Three-Year Average Flows – GSD Retail Service Area

	GWSD	Airport Total	UCSB	GSD
FY 2023	2.16	0.06	0.15	2.33
FY 2024	2.15	0.08	0.15	2.27
FY 2025	2.07	0.05	0.15	2.50
Three-Year Average (MGD)	2.12	0.06	0.15	2.36

4.3. Equivalent Residential Unit (ERU) Definition

To relate between types of users and uses across a system an equivalency basis must be determined. An equivalent unit basis is developed for the common customer type, a SFR connection. The current connection fees define an ERU as a SFR unit with flows of 203 gpd.

As part of the sewer rate and fee study, the ERU definition was updated to reflect the most up to date user estimates on wastewater generation. Based on multiple data points the proposed ERU definition is 150 gpd. This data include: US Census Bureau information on household size for Goleta, California and state indoor efficiency standards of approximately 50 gallons per person per day (gpcd); known average winter water use (a proxy for year-round wastewater generation) of a typical SFR served by Goleta Water District⁸; and largely aligned with the California Association of Sanitation Agencies (CASA) Flow and Loadings Study results.

⁸ Based on Goleta Water District’s 2025 Rate Study, typical winter water use is approximately six (6) hundred cubic feet (HCF) per month, which is in line with a 3-person household at 50 gpcd (rounded to the nearest whole HCF).

To determine a best estimate of winter water use for MFR, Raftelis utilizes the ratio of Apartment and Mobile Home use to SFR use relying on the CASA Study results (i.e., 135/161). This ratio is applied to the proposed SFR definition of 150 gpd yielding an estimated winter water use/wastewater flow per MFR of 125 (rounded down to the nearest whole gallon). **Table 4-6** shows the current and proposed flow definitions in gpd for different residential classes.

Table 4-6: ERU Flow Definitions, by Residential Classification

Customer Class	Current gpd	Proposed gpd	Ratio
SFR	203	150	1.00
MFR	164	125	0.83
Mobile	164	125	0.83

5. Proposed Connection Fees

5.1. Connection Fee Calculation

Table 5-1 shows the derivation of the connection fee. The adjusted value for connection fee calculation (from Table 4-4) is divided by the capacity utilization of existing customers (from Table 4-5). This yields a value per MGD). Dividing by 1,000,000 results in a value per gallon per day (gpd). This unit rate of \$35.45 is multiplied by the ERU definition of 150 gpd to yield the connection fee in \$/ERU. This calculated fee represents the connection fee estimate as of the end of FY 2024.

Table 5-1: Connection Fee Derivation

System Valuation	
	RCNLD
System Assets	Value (\$)
Collection System	\$24,116,015
Lift Stations	\$7,933,479
Treatment Plant	\$20,789,707
Outfall	\$1,559,539
Other	\$3,765,620
Total System Assets	\$58,164,359
+ Capital Reserves	\$38,043,845
-Debt Principal	\$12,412,580
Adjusted Value for Connection Fee Calculation	\$83,795,624
Utilized Capacity (MGD)	2.36
Value (\$/MGD)	\$35,453,205
Value (\$/gpd)	\$35.45
gpd / ERU	150
Connection Fee (\$/ERU)	\$5,304

5.2. Proposed Connection Fee

Because asset costs are as of June 30, 2024, the connection fee calculation is adjusted by construction cost inflation to align the proposed fees with current day dollars. The District adjusts fees based on the 12-month change (April to April) in the Bureau of Labor Statistics (BLS) Producer Price Index (PPI) – Construction for Government. March 2026 is the most recent data available. Raftelis accounted for the change over the period of mid-2024 to present day to align the date of asset date as closely as possible to today. The percent difference over that period (July 2024 through March of 2026 was 4.32%. Table 5-2 shows the calculation of the connection fee, adjusted for PPI, and proposed for implementation July 1, 2026.

Table 5-2: Proposed Connection Fee

Adjusted Connection Fee	
Test Year Connection Fee	\$5,304
BLS PPI Adjustment (July 2024 to March 2026)	4.32%
Proposed Connection Fee	\$5,533

Future connection fees would be subject to annual adjustments based on the change of the respective PPI selected by the District. Historically, and in effect in the District’s Ordinance No. 87, the District adjusts fees on July 1 each year based on the 12-month April to April change in the BLS PPI – Construction for Government.

6. Annexation Fees

Annexation fees are collected when properties outside the District’s current boundaries wish to annex into the District to receive service. Annexation fees allow the new properties to achieve equity with the properties in the District by recognizing tax revenues to the District contributed by the property owners within the District.

Property owners in the District have paid assessed valuation (AV) based property taxes since the formation of the District. Developed properties paid higher taxes than undeveloped properties by virtue of their higher assessed values. Annexation fees are determined by estimating the present value of the taxes that the annexing property would have paid.

GSD receives approximately \$200,000 per year in property tax revenues from properties within the service area. While the value is a material amount of the District’s finances on its own, on an equivalent parcel basis the value is de minimis. A high-level estimate is an AV-based annexation fee of about \$50 per ERU which would result in a very small amount of revenue the District would earn. Based on the costs of staff time in calculating an annexation charge, and in discussions with staff, it is our opinion that the effort would cost more in staff labor than the total charge. For this reason, Raftelis recommends that the annexation fee cover only the administrative costs that the District incurs to process the annexation. These costs should be passed on to customers based on the administrative time expended in processing annexations.

If historic data exists to identify the standard, or routine, cost of processing an annexation, the District could schedule a processing fee (i.e., \$250 per annexation). Typical single family annexation can be a fixed amount based on the cost incurred which should be generally consistent for residential connections. For non-residential connections, annexation processing costs may vary, therefore, the District could base each annexation on a time and materials basis.

Table 6-1: Current and Proposed Annexation Fees

Annexation Fees	
Current	\$2,546 / Acre
Proposed	Processing Time

7. Impacts

7.1. Combined Impacts: Proposed Connection and Annexation Fees

Table 7-1 shows the estimated change in total fees for a new single family residential connection. The proposed connection fee is based on the results in Section 5. The proposed annexation fee is based on the discussion in Section 6. Combined fees are shown both with and without annexation, as this fee only applies to parcels currently outside the District’s service area.

Table 7-1: Single Family Residential Fee Impacts – Current and Proposed

Single Family Residential	Current	Proposed
Connection Fee (1 ERU)	\$2,750	\$5,533
Annexation Fee	\$2,546	\$0
Annexation Processing ⁹	\$200	\$200
Combined Fee w/Out Annexation	\$2,750	\$5,533
Combined Fee w/Annexation	\$5,496	\$5,733

Impacts to other user classes are highly dependent on the user classification, estimated wastewater flow generation, and location.

7.2. Regional Connection Fee Comparison

Figure 7-1 and Figure 7-2 below compare connection/capacity fees charged by neighboring, regional, and peer agencies. The GSD current is first shown without the annexation fee (connection fee only) and then shown with the annexation fee (i.e. includes the existing connection fee and existing annexation fee). The GSD proposed represents the results of this study. The average connection fee for the agencies surveyed (excluding the District’s current and proposed charge) is approximately \$6,800 per equivalent residential unit. The proposed GSD connection fee would be in the middle of surveyed agencies.

⁹ Assumes current and proposed would be the same as both are for administrative processing

Figure 7-1: Single Family Residential Connection Fee Comparison (Without GSD Annexation)

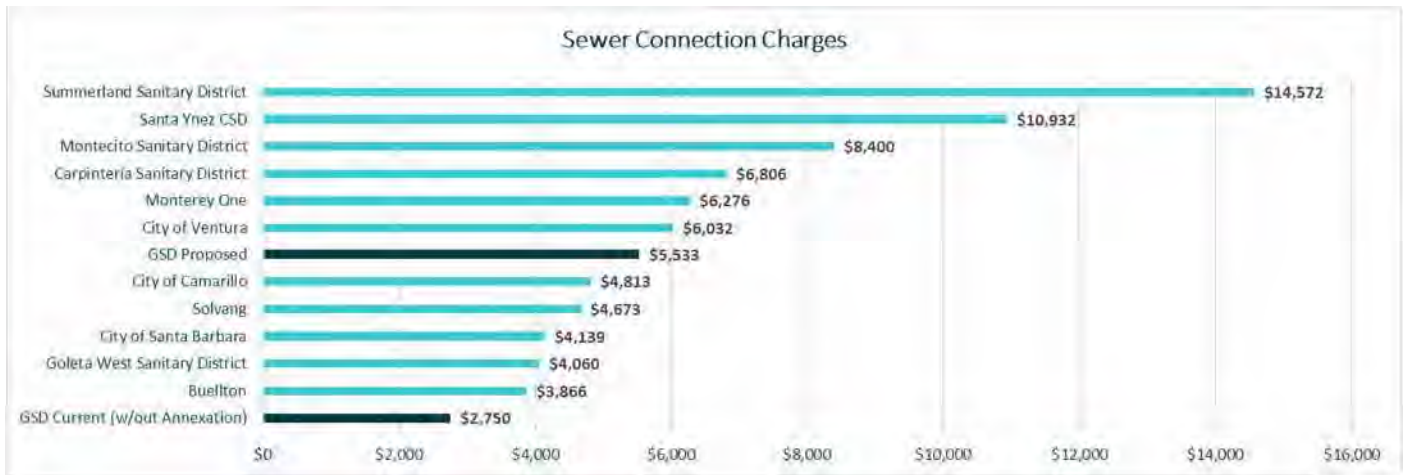


Figure 7-2: Single Family Residential Connection Fee Comparison (With GSD Annexation)



ORDINANCE NO. 87

**ORDER OF THE GOVERNING BOARD OF THE GOLETA SANITARY DISTRICT
ADOPTING AN ORDINANCE AND GENERAL REGULATION REPEALING
ORDINANCE NO. 58 AND APPROVING REVISED CAPACITY FEE PROVISIONS**

WHEREAS, on September 23, 2002, the Governing Board (the “Board”) of the Goleta Sanitary District (the “District”) adopted Ordinance No. 58 setting forth fees for the privilege of connecting to the District’s sewer facilities, which fees are referred to in Ordinance No. 58 as “Connection Fees”.

WHEREAS, Section 4 of Ordinance No. 58 provides that revenues derived from the collection of Connection Fees shall be for the purpose of financing the expansion of the sanitation and sewerage facilities of the District to accommodate the demand for additional capacity.

WHEREAS, under Government Code Section 65852.2, as amended by Senate Bill 229, effective as of January 1, 2018 capacity fees for certain auxiliary dwelling units (“ADUs”) must be calculated based on either the size of the ADU or the number of plumbing fixtures.

WHEREAS, under Section 3 of Ordinance No. 58 and Table 1 attached thereto, the Connection Fee for ADUs is calculated by multiplying the Connection Fee applicable to single-family residences by 0.70. Said method of calculation is not based on the size of the ADU or the number of plumbing fixtures and therefore does not comply with Government Code Section 65852.2, as amended by Senate Bill 229.

WHEREAS, the Connection Fees provided for under Ordinance No. 58 have not been adjusted since they were adopted in 2002 and have therefore not kept pace with inflation or other cost increases incurred by the District.

WHEREAS, the Board desires to repeal Ordinance No. 58 and replace it with this Ordinance in order to (i) substitute the term “Capacity Fee” for the term “Connection Fee”, (ii) include additional definitions, (iii) address the purposes and permitted uses of Connection Fees and Capacity Fees, (iv) approve a new Capacity Fee for ADUs which is calculated based on the number of plumbing fixtures, (v) provide for the annual adjustment to the Capacity Fees based on the Engineering News Record Construction Cost Index Los Angeles Average, and (vi) make other revisions to the provisions applicable to Connection Fees and Capacity Fees, as more particularly set forth herein.

NOW, THEREFORE, the Governing Board of the Goleta Sanitary District ordains as follows:

- 1. Repeal of Ordinance No. 58.** Ordinance No. 58 is hereby repealed in its entirety and is replaced and superseded by this Ordinance.

2. **Definitions.** Unless the context herein specifically indicates otherwise, the meaning of terms used in this Ordinance shall be as follows:

(a) **“ADU”** shall mean an auxiliary dwelling unit that is (i) added onto an existing single-family residence or onto an existing accessory structure located on the same lot as a single-family residence, or (ii) constructed as a detached structure on the same lot as a single-family residence, as described in Government Code Sections 65852.2(f)(2)(B) and 65852.2(i)(4), as said sections may be amended, replaced, or superseded in the future.

(b) **“Base Charge”** shall mean the Capacity Fee payable by a single-family residence, as said Base Charge may be adjusted annually as provided herein. As of the Effective Date of this Ordinance, the Base Charge is Two Thousand Fifty-eight Dollars (\$2,058.00).

(c) **“Capacity Fee”** shall mean a fee for District Facilities (as defined below) that are in existence at the time the fee is imposed or fees for new District 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 District involving capital expenses relating to the use of existing or new District Facilities.

(d) **“Capacity Project”** shall mean a Capital Project (as defined below) that will accommodate the demand for additional capacity by increasing the capacity of District Facilities to collect, convey, treat, and/or dispose of wastewater, including Capital Projects that address hydraulic flow (i.e., volume), strength, loadings, operational requirements, and applicable legal and regulatory requirements. A Capacity Project may relate to any component, facility, equipment, process, or constituent associated with the collection, conveyance, treatment, or disposal of wastewater.

(e) **“Capital Project”** shall mean a construction project or a purchase associated with new or existing District Facilities, but excluding construction projects and purchases that relate solely to the operation, maintenance, repair, and/or replacement of existing District Facilities. Capital Projects include, but are not limited to, Capacity Projects.

(f) **“District Facilities”** shall mean (i) wastewater collection, conveyance, treatment, and disposal facilities, (ii) facilities that improve efficiency, employ new technologies, facilitate conservation, resource recovery, reuse, recycling, and sustainability, and/or are required to comply with applicable legal and regulatory requirements, and (iii) administrative and other facilities used in connection with the provision by the District of services to its customers. District Facilities include buildings, structures, and other improvements, as well as capital equipment and assets that are incorporated into and/or used in conjunction with District Facilities.

(g) **“DFU”** shall mean the number of drainage fixture units for each type of appliance, appurtenance or fixture, as set forth in the then current California Plumbing Code.

(h) **“ Dwelling Unit ”** shall mean a building or portion thereof which provides complete independent living facilities for one or more persons and includes permanent provisions for living, sleeping, eating, cooking, and sanitation.

(i) **“ ERU ”** shall mean the equivalent of a single-family residential dwelling unit, assuming (i) a hydraulic flow rate of 203 gallons per day, and (ii) loadings and strength factors that are typical for a single-family residence within the District.

(j) **“ Person ”** shall mean (i) an individual or trust, (ii) a legal entity such as a corporation, partnership, or Limited Liability Company, (iii) an association, organization, group, or society, or (iv) the United States of America, the State of California, or a political subdivision, governmental agency or other public or municipal corporation.

3. **Capacity Fees.**

(a) Except as otherwise specifically provided herein, a Person desiring to connect to the District’s sewer system shall pay to the District a Capacity Fee for such connection determined by multiplying the applicable Capacity Unit of Benefit Factor, as set forth in Table 1 attached hereto and incorporated herein by this reference, by the then current Base Charge.

(b) Notwithstanding Section 3(a) above, the Capacity Fee for ADUs shall be calculated as set forth in Table 2 attached hereto and incorporated herein by this reference.

(c) Notwithstanding Section 3(a) above, in cases where a property is connected to the District’s sewer system pursuant to a written contract with the District, the Capacity Fee shall be calculated in accordance with the terms of such contract.

(d) Capacity Fees shall be in addition to (i) permit, inspection, and annexation fees, and (ii) any amount paid or to be paid for the costs of a specific sewer line or lines previously constructed or to be constructed for the purpose of connecting the property in question to the District’s sewer system. The applicable Capacity Fee shall be paid prior to the issuance by the District of a connection permit.

4. **Base Charge Adjustments.** The Base Charge shall be adjusted effective as of the first day of July of each year, commencing July 1, 2018, by the percentage change in the Engineering News Record Construction Cost Index for Los Angeles Average published for the immediately preceding April as compared to such index for April of the previous year.

5. **Use of Existing Connection Fee Revenues.** Revenues that were derived from the collection of Connection Fees pursuant to Ordinance No. 58 or other District ordinances that were in effect prior to the Effective Date (as defined below) and were placed in the District’s Capital Reserve Fund shall be only for the purpose of financing Capacity Projects.

6. **Use of Future Capacity Fee Revenues.** Revenues that are derived from the collection of Capacity Fees pursuant to this Ordinance on or after the Effective Date shall be

placed in the District's Capital Reserve Fund. Said Capacity Fee revenues shall be for the purpose of financing Capital Projects, including but not limited to Capacity Projects.

7. **Readily Convertible Units.** For the purpose of Table 1 attached hereto, the number of Dwelling Units shall be determined by the District and the District's decision in this regard shall be final and conclusive on all parties. If the District determines that expanded, remodeled or newly constructed premises or auxiliary structures are readily convertible into one or more separate Dwelling Units ("Readily Convertible Units"), the owner of the property shall pay to the District a Capacity Fee as calculated hereunder for each such Readily Convertible Unit. In lieu of paying said Capacity Fee, the Owner may execute a document setting forth the owner's acknowledgment that the Readily Convertible Unit may not be converted into or used as a separate Dwelling Unit without the prior approval of the District and the payment to the District of the then applicable Capacity Fees, permit fees and inspection fees. Said acknowledgement shall be in a form approved by the District, shall be binding on the owner's successors in interest and shall be recorded with the Santa Barbara County Recorder's Office. The acknowledgment shall be signed by all owners of record. The District's decision with regard to the number of Readily Convertible Units on the property shall be final and conclusive on all parties.

8. **General Findings.** The Board hereby finds that (i) in compliance with Article XIII A, Section 4 of the California Constitution and Section 50076 of the Government Code, the fees set forth in this Ordinance do not constitute a special tax requiring voter approval, (ii) based on the studies commissioned by the District, the approved budget, and revenue and cost projections of the District, the revenues forecast to be generated by the fees set forth in this Ordinance do not exceed the estimated reasonable cost of providing sewer service to the customers of the District and to the users within each of the categories established in Table 1, (iii) the revenues derived from the fees will not be used for any purpose other than that for which the fees are imposed, (iv) the amount of the fees will not exceed the proportional cost of the service provided to any parcel, and (v) the fees will be imposed only where service is actually used by, or immediately available to, the owner of the property in question.

9. **Partial Invalidity.** If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional, ineffective, or in any manner in conflict with the laws of the United States, or the State of California, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause, and phrase, hereof, irrespective of the fact that any one or more section, subsection, sentence, clause, or phrase be declared unconstitutional, ineffective, or in any manner in conflict with the laws of the United States or the State of California.

10. **Publication.** The District's Secretary is hereby directed to cause this Ordinance to be published once in a newspaper published in the District.

11. **Effective Date.** This Ordinance shall be effective upon the expiration of one (1) week following the date of publication (the "Effective Date").


PASSED AND ADOPTED this 15th day of January, 2018, by the following vote of the Governing Board of the Goleta Sanitary District:

AYES: Majoewsky, Emerson, Rose, Wageneck, Smith

NOES: None

ABSENT: None

ABSTAIN: None

By: 
Steven T. Majoewsky,
President of the Governing Board

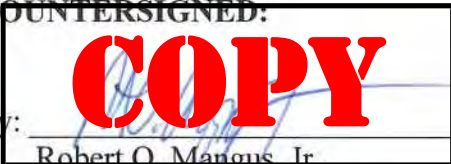
COUNTERSIGNED:
By: 
Robert O. Mangus, Jr.,
Secretary of the Governing Board

TABLE 1 Calculation of Capacity Fee Under Section 3(a)	
<u>TYPE OF CONNECTION BEING MADE</u>	<u>CAPACITY UNIT OF BENEFIT FACTOR</u>
Single-family residence	1.00
Multiple-family residence, condominium or apartment (excluding ADUs), per Dwelling Unit	0.70
Mobile home park, per unit	0.70
<p>Commercial, industrial and institutional uses, per ERU, with a minimum of 1.00 per connection</p> <p>Commercial and industrial facilities shall pay not less than their proportionate share of the cost of capacity in the District's trunk, interceptor and outfall sewers and treatment facilities, considering the amount of flow generated by the facility and the strength, composition and cost to treat the sewage generated by the facility based on available information. The District's decision in this regard shall be final and conclusive on all Persons.</p>	1.00

TABLE 2 Calculation of Capacity Fee for ADUs Under Section 3(b)	
<u>NUMBER OF DFUs</u>	<u>CAPACITY FEE CALCULATION</u>
ADUs with 15 or fewer DFUs	Base Charge x 0.70
ADUs with more than 15 DFUs	Base Charge x 0.70 PLUS Additional fixture charge calculated as follows: (DFUs in excess of 15 divided by 20) x Base Charge

ORDINANCE NO. 88

**ORDER OF THE GOVERNING BOARD OF THE GOLETA SANITARY DISTRICT
ADOPTING AN ORDINANCE AND GENERAL REGULATION REPEALING
ORDINANCE NO. 59 AND APPROVING REVISED ANNEXATION FEE PROVISIONS**

WHEREAS, in September of 2002, Reiter Lowry Consultants completed an Annexation Fee Analysis (the "Study") for the purpose of evaluating the need for a change to the annexation fees charged by the Goleta Sanitary District (the "District").

WHEREAS, following guidelines provided by California law, the Study recommended an annexation fee of One Thousand Nine Hundred Five Dollars (\$1,905.00) per acre.

WHEREAS, the Governing Board (the "Board") of the District determined that the annexation fee recommended by the Study was appropriate to establish equity between properties presently within the boundaries of the District, which have already financed the cost of sewer facilities, and properties within areas which may be annexed to the District in the future.

WHEREAS, on September 23, 2002, the Board adopted Ordinance No. 59 approving the annexation fee recommended by the Study.

WHEREAS, Section 5 of Ordinance No. 59 provides that revenues derived from the collection of annexation fees shall be for the purpose of financing the expansion of the sanitation and sewerage facilities of the District to accommodate the demand for additional capacity.

WHEREAS, the annexation fee provided for under Ordinance No. 59 has not been adjusted since it was adopted in 2002 and has therefore not kept pace with inflation or other cost increases incurred by the District.

WHEREAS, the Board desires to repeal Ordinance No. 59 and replace it with this Ordinance in order to (i) include additional definitions, (ii) address the purposes and permitted uses of the revenues derived from the collection of annexation fees, (iii) provide for the annual adjustment to the annexation fee based on the Engineering News Record Construction Cost Index Los Angeles Average, and (iv) make other revisions to the provisions applicable to the annexation fee, as more particularly set forth herein.

NOW, THEREFORE, the Governing Board of the Goleta Sanitary District ordains as follows:

1. **Repeal of Ordinance No. 59.** Ordinance No. 59 is hereby repealed in its entirety and is replaced and superseded by this Ordinance.

2. **Definitions.** Unless the context herein specifically indicates otherwise, the meaning of terms used in this Ordinance shall be as follows:

(a) **“Capacity Project”** shall mean a Capital Project (as defined below) that will accommodate the demand for additional capacity by increasing the capacity of District Facilities (as defined below) to collect, convey, treat, and/or dispose of wastewater, including Capital Projects that address hydraulic flow (i.e., volume), strength, loadings, operational requirements, and applicable legal and regulatory requirements. A Capacity Project may relate to any component, facility, equipment, process, or constituent associated with the collection, conveyance, treatment, or disposal of wastewater.

(b) **“Capital Project”** shall mean a construction project or a purchase associated with (i) new District Facilities, or (ii) modifications to existing District Facilities, but excluding construction projects and purchases that relate solely to the operation, maintenance, repair, and/or replacement of existing District Facilities. Capital Projects include, but are not limited to, Capacity Projects.

(c) **“District Facilities”** shall mean (i) wastewater collection, conveyance, treatment, and disposal facilities, (ii) facilities that improve efficiency, employ new technologies, facilitate conservation, resource recovery, reuse, recycling, and sustainability, and/or are required to comply with applicable legal and regulatory requirements, and (iii) administrative and other facilities used in connection with the provision by the District of services to its customers. District Facilities include buildings, structures, and other improvements, as well as capital equipment and assets that are incorporated into and/or used in conjunction with District Facilities.

3. **Processing Fee.** A fee of \$200.00 (the “Processing Fee”) shall be paid to the District at the time of filing an application for annexation to cover the District’s costs in processing the application.

4. **Annexation Fee.** In addition to the Processing Fee payable pursuant to Section 3, above, upon approval of the annexation by the Local Agency Formation Commission, an annexation fee (the “Annexation Fee”) shall be paid to the District as follows:

(a) For properties of one acre or less: One Thousand Nine Hundred Five Dollars (\$1,905.00).

(b) For properties over one acre: One Thousand Nine Hundred Five Dollars (\$1,905.00) multiplied by the total acreage of the property being annexed.

5. **Other Charges.** The Processing Fee and the Annexation Fee payable pursuant to Sections 3 and 4, above, shall be in addition to all other fees and charges of the District, including but not limited to sewer capacity fees, sewer service charges, inspection fees, permit fees and costs associated with any extension of main sewer lines which may be required to serve the annexed property.

6. **Annexation Fee Adjustments.** The Annexation Fee shall be adjusted effective as of the first day of July of each year, commencing July 1, 2018, by the percentage change in the Engineering News Record Construction Cost Index Los Angeles Average published for the immediately preceding April as compared to such index for April of the previous year.

7. **Use of Existing Annexation Fee Revenues.** Revenues that were derived from the collection of annexation fees pursuant to Ordinance No. 59 or other District ordinances that were in effect prior to the Effective Date (as defined below) and were placed in the District's Capital Reserve Fund shall be only for the purpose of financing Capacity Projects.

8. **Use of Future Annexation Fee Revenues.** Revenues that are derived from the collection of annexation fees pursuant to this Ordinance on or after the Effective Date shall be placed in the District's Capital Reserve Fund and shall be for the purpose of financing Capital Projects, including but not limited to Capacity Projects.

9. **General Findings.** The Board hereby finds that (i) in compliance with Article XIII A, Section 4 of the California Constitution and Section 50076 of the Government Code, the fees set forth in this Ordinance do not constitute a special tax requiring voter approval, (ii) based on the studies commissioned by the District, the approved budget, and revenue and cost projections of the District, the revenues forecast to be generated by the fees set forth in this Ordinance do not exceed the estimated reasonable cost of providing sewer service to the customers of the District, (iii) the revenues derived from the fees will not be used for any purpose other than that for which the fees are imposed, (iv) the amount of the fees will not exceed the proportional cost of the service provided to any parcel, and (v) the fees will be imposed only where service is actually used by, or immediately available to, the owner of the property in question.

10. **Partial Invalidity.** If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional, ineffective, or in any manner in conflict with the laws of the United States, or the State of California, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board hereby declares that it would

have passed this Ordinance and each section, subsection, sentence, clause, and phrase, hereof, irrespective of the fact that any one or more section, subsection, sentence, clause, or phrase be declared unconstitutional, ineffective, or in any manner in conflict with the laws of the United States or the State of California.

11. Publication. The District’s Secretary is hereby directed to cause this Ordinance to be published once in a newspaper published in the District.

12. Effective Date. This Ordinance shall be effective upon the expiration of one (1) week following the date of publication (the “Effective Date”).


PASSED AND ADOPTED this 5th day of March, 2018, by the following vote of the Governing Board of the Goleta Sanitary District:

AYES: Majoewsky, Emerson, Rose, Wageneck, Smith


NOES: None

ABSENT: None

ABSTAIN: None

By:  **COPY**
Steven T. Majoewsky
President of the Governing Board

COUNTERSIGNED:

By:  **COPY**
Robert O. Mangus, Jr.,
Secretary of the Governing Board

PRELIMINARY ENVIRONMENTAL REVIEW
GOLETA SANITARY DISTRICT

One William Moffett Place
Goleta, CA 93117
(805) 967-4519

Name of Project: Adoption of Ordinance No. 88 repealing Ordinance No. 59 and approving revised annexation fee provisions

Location: Within Goleta Sanitary District jurisdictional boundaries

Entity or Person Undertaking Project: (Check appropriate box)

- Goleta Sanitary District
- Other: Name: _____
Address: _____

Environmental Committee Determination:

The District's Environmental Committee, having undertaken and completed a preliminary review of this proposed activity in accordance with the California Quality Act Guidelines ("CEQA Guidelines") has concluded that:

- A. The activity does not require further environmental assessment because:
- 1. The proposed action does not constitute a project under CEQA Guidelines Section 15378 or is statutorily exempt. [The exemptions under Section 21080(b)(8) of the Public Resources Code and Section 15273 of the CEQA Guidelines apply.]
 - 2. The project constitutes a feasibility or planning study under CEQA Guidelines Section 15262.
 - 3. The project is an Emergency Project under CEQA Guidelines Section 15269.
 - 4. The project is a Ministerial Project under CEQA Guidelines Section 15268.
 - 5. The project is Categorically Exempt under CEQA Guidelines Section _____.
 - 6. The project involves another public agency which constitutes the lead agency.
Name of Lead Agency _____
- B. The District is the lead agency and the activity is a project which requires further evaluation of the possible significant effects on the environment.

Date: March 5, 2018

COPY
Steve Wagner,
General Manager/District Engineer

Notice of Exemption

TO: Office of Planning and Research
P.O. Box 3044
1400 Tenth Street, Room 222
Sacramento, CA 95812-3044

FROM: Goleta Sanitary District
One William Moffett Place
Goleta, CA 93117

or

County Clerk
County of Santa Barbara
105 E. Anapamu Street
Santa Barbara, CA, 93101

Project Title: Adoption of Ordinance No. 88 repealing Ordinance No. 59 and approving revised annexation fee provisions

Project Location – Specific: Within Goleta Sanitary District jurisdictional boundaries

Project Location – City: City of Goleta and unincorporated areas

Project Location – County: Santa Barbara

Description of Project: Repeal of Ordinance No. 59 and adoption of revised annexation fee provisions

Name of Public Agency approving project: Goleta Sanitary District

Name of Person or Agency carrying out project: Goleta Sanitary District

Exempt status: (check one)

- Ministerial project.
- Not a project.
- Emergency Project.
- Categorical Exemption.
State type and class number:
- Declared Emergency.
- Statutory Exemption.
State Code section number: Section 21080(b)(8) of Public Resources Code
- Other. Explanation:

Reason why project is exempt:

The exemptions contained in Section 21080(b)(8) of the Public Resources Code and Section 15273 of Title 14 of the California Code of Regulations apply and the required findings have been made. There is no substantial evidence that the ordinance or the new annexation fee provisions will have a significant effect on the environment.

Lead Agency Contact Person: Steve Wagner

Telephone: (805) 967-4519

Signature of Lead Agency Representative:


Steve Wagner, General Manager/District Engineer

Date Received for Filing:

Dated: March 5, 2018

AGENDA ITEM #2

AGENDA ITEM: 2

MEETING DATE: May 18, 2026

I. NATURE OF ITEM

Update on Nutrient Management Study Conducted by Hazen and Sawyer

II. BACKGROUND INFORMATION

In many places around the country, wastewater treatment plants are required to remove nutrients, such as nitrogen or phosphorus, to prevent eutrophication in the receiving water body. In California, effluent nutrient limits were established for dischargers to the Sacramento-San Joaquin River Delta over a decade ago. Most recently, effluent nitrogen limits were established for dischargers to the San Francisco Bay following two harmful algal blooms in 2022 and 2023. The State Water Resources Control Board (SWRCB) is now considering regulating nutrient discharges to the ocean from wastewater treatment plants along the central and southern coasts of California.

On December 16, 2024, in anticipation of these potential nutrient regulations, the Board approved a Professional Services Agreement with Hazen and Sawyer for the development of a Nutrient Management Study. The purpose of the evaluation was to identify alternatives for nutrient removal and how they could be implemented at the District's Water Resource Recovery Facility (WRRF). The study provides critical information for capital planning purposes and outlines the next steps the District could take if nutrient discharge limits are implemented.

III. COMMENTS AND RECOMMENDATIONS

The study used a digital process model of the District's WRRF to evaluate different nutrient removal configurations and predict process performance at current and future flows and loads. The modeling results were used to develop a list of alternatives that would reduce the Total Inorganic Nitrogen (TIN) in the plant's effluent to levels similar to those implemented in the San Francisco Bay Area (approximately 50% TIN reduction). Taking into account other considerations such as technology maturity, compatibility with the District's existing secondary process, and potential synergy with other potential improvements at the WRRF, the following short-list of alternatives was identified:

- Step Feed Biological Nitrogen Removal (BNR)
- Flexible BNR
- Membrane Bioreactor (MBR)

The Step Feed BNR and Flexible BNR would provide the District with the ability to increase nitrogen removal through modifications to the existing aeration basins. Both Step Feed BNR and Flexible BNR are conventional approaches that reduce the solids loading rate on the secondary clarifiers. The estimated construction costs for the Step Feed BNR and Flexible BNR alternatives are \$10 Million (M) and \$16M, respectively.

The third alternative for nutrient removal, an MBR process, would involve significant modifications to the existing treatment process but would provide a higher quality effluent that would eliminate the need for the existing secondary clarifiers and reclamation facility. MBR effluent is of high enough quality that it would be suitable to feed an advanced treatment process like reverse osmosis future potable reuse. The process utilizes a conventional process for nutrient removal, but it utilizes membrane separation of solids. This allows for treatment at higher solids content, allowing for a greater treatment capacity while also producing higher quality effluent. The MBR alternative is estimated to have a construction cost of \$72M.

Of the three alternatives analyzed, the Step Feed BNR and MBR process would be able to accommodate a 20% increase in flows and loads to meet the proposed development within the District’s service area utilizing existing basin volume. However, in order for the Flexible BNR to accommodate anticipated future flows and loads, an additional aeration basin would need to be constructed. This construction is estimated to cost an added \$10M. The conceptual construction costs of each proposed alternative are tabulated below.

Alternative	Conceptual Construction Cost
Step Feed BNR	\$ 10 M
Flexible BNR	\$ 16 M
Flexible BNR with Additional Aeration Basin	\$ 26 M
MBR	\$ 72 M

Effluent nitrogen limits have not been formally established by the SWRCB for ocean dischargers, but the expectation is that a limit similar to those in the Bay Area would be required if implemented. All three alternatives in this study have the capability to produce an effluent that can meet the anticipated requirement of 50% TIN reduction. However, if more stringent numerical limits (e.g. 10 mg/L) are implemented, the Step Feed BNR and Flexible BNR would be limited in their ability to provide sufficient nitrogen removal. The MBR configuration would provide the required nitrogen removal.

Construction of any of these alternatives could take several years to complete, but this report is the first step in the District’s goal of being prepared to respond to future nutrient regulations. In the interim, staff will continue to monitor regulatory actions and explore lower-cost operational and process modifications to reduce nutrient loads in the plant effluent.

This item is for informational purposes only, and no Board action is required at this time.

IV. REFERENCE MATERIAL

Goleta Sanitary District Nutrient Management Study

May 11, 2026

To: Reese Wilson, PE, Goleta Sanitary District
Steve Wagner, PE, Goleta Sanitary District

From: Kaitlin McGovern-Zhou, PE, Hazen

Reviewed by: Rion Merlo, PhD, PE, PMP, Hazen
Rob Sharp, Hazen

Goleta Sanitary District Nutrient Management Study

FINAL



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Appendix B: Plots of Historical Flows and Loads Data

Appendix C: Nutrient Removal Fact Sheets

Appendix D: Vendor Proposals (Omitted from packet due to proprietary information)

Executive Summary

The Goleta Sanitary District (District) initiated the Nutrient Management Study in anticipation of potential future regulations requiring nitrogen removal for ocean dischargers. Three short-listed alternatives to upgrade the existing process for biological nitrogen removal (BNR) were identified as part of this evaluation: step-feed BNR, flexible BNR, and membrane bioreactor (MBR).

Two of the three alternatives, step feed BNR and flexible BNR, provide the District with the ability to remove nitrogen and meet capacity requirements with modifications to the existing activated sludge system. It is also assumed that the existing biofilters would be decommissioned and the two smaller secondary clarifiers would be rehabilitated as planned. Depending on how future growth materializes, utilizing the step feed capabilities of the existing tanks could help the District delay or avoid construction of a fourth aeration tank while accommodating future flows and loads and removing nitrogen in the secondary treatment process. Conceptual construction costs for implementing the step feed BNR and flexible BNR alternatives in the existing aeration tanks are \$10M and \$16M, respectively. If the District were to construct a fourth aeration tank and retrofit the existing tanks for BNR operation (assuming the flexible BNR configuration), the estimated construction cost is approximately \$26M.

A third alternative for nutrient removal, utilizing an MBR process, was also evaluated. This option would involve more significant modifications to the existing treatment process compared to the step feed BNR and flexible BNR alternatives but could have synergy with other drivers at the WRRF. For example, the MBR system would produce a higher quality effluent that would be suitable for recycled water and/or reverse osmosis and other advanced treatment process required for potable reuse. The MBR system would satisfy filtration requirements, and therefore, the existing secondary clarifiers and tertiary filters for recycled water would no longer be required, eliminating future operating and rehabilitation costs. The MBR system also provides the most flexibility for meeting future, potentially more stringent nitrogen limits, however, operating costs (electricity and chemical) would be higher compared to the other alternatives. The MBR alternative is estimated to have a construction cost of approximately \$72M.

The results of this evaluation provide the District with an overview of the nutrient removal capacity of the existing treatment process, as well as options with estimated costs for infrastructure modifications needed to operate in a BNR mode. This evaluation will help the District with capital planning and provide an implementation roadmap should effluent nitrogen regulations be implemented as part of a future permit.

1. Introduction

The Goleta Sanitary District (GSD or the District) operates a wastewater resource recovery facility (WRRF) with a permitted capacity of 7.64 million gallons per day (mgd) that serves approximately 80,000 customers across the Goleta Valley. The existing treatment process includes preliminary and primary treatment with influent screens, aerated grit removal, and primary clarifiers. The secondary treatment system includes biofilters followed by aeration basins and secondary clarifiers. A portion of the secondary effluent is reclaimed for recycled water production (irrigation) while the remaining effluent is pumped to the chlorine contact tanks for disinfection and discharge via the District’s ocean outfall. Figure 1-1 below presents an overview of the existing WRRF treatment processes.

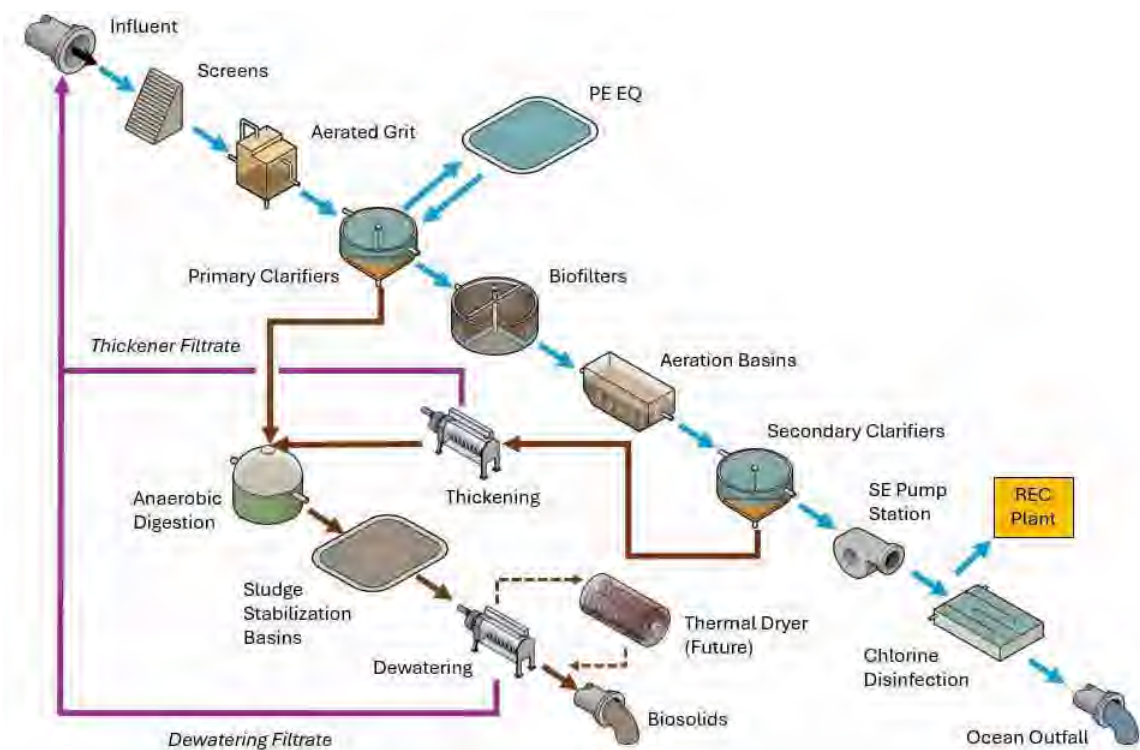


Figure 1-1: Process Flow Diagram of Current GSD WRRF

Upgrades to the treatment process were completed in 2012 to provide full secondary treatment (carbon removal only); nitrogen removal is not currently required as part of the facility’s National Pollutant Discharge Elimination System (NPDES) permit. However, the State Water Resources Control Board (SWRCB) is considering regulating nutrients (i.e., nitrogen) for ocean dischargers based on concerns that such discharges are exacerbating and accelerating ocean acidification and oxygen loss in coastal waters, which have a negative impact on marine life. As such, GSD initiated this nutrient management study. The purpose of this evaluation is to identify alternatives for nutrient removal and how they could be incorporated at the WRRF. The results of this analysis will provide information for capital planning purposes and next steps for GSD should effluent nutrient limits be implemented in a future NPDES permit.

2. Approach

A calibrated process model can be used to simulate treatment plant operations and forecast performance under different configurations and flow and loading conditions. For this study, a biological process model of the GSD WRRF was used to evaluate different nutrient removal configurations and predict performance at current and future flows and loads. The modeling results were used to assess alternative nutrient removal configurations. Based on feedback provided by the District, conceptual construction costs were developed for three short-listed alternatives.

2.1 Process Model Calibration

Hazen previously assisted District staff with a special sampling event and wastewater characterization at the WRRF in 2019. The collected data was used to develop a calibrated process model using the GPS-X Mantis3 software. The model was intended to support District staff to optimize treatment performance, increase staff knowledge, and enhance confidence in future planning and design decisions. The results of this study and the model development were described in a “Process Model Calibration Memo” which is included in Appendix A.

The calibrated GPS-X model was adapted for this evaluation and converted to BioWin software. A snip of the BioWin model of the existing plant is shown in Figure 2-1. The calibration process was repeated in BioWin using the special sampling data collected in 2019. A validation run was also completed using more recent data from the summer of 2022. Overall, a good match was achieved between the previously developed GPS-X model and the updated BioWin model.

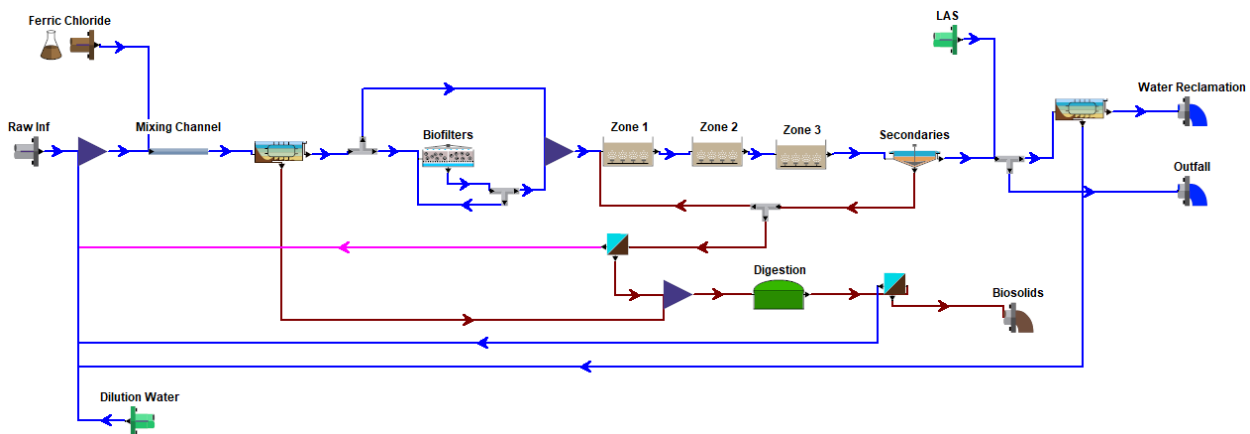


Figure 2-1: BioWin Model for GSD

2.2 Recommendations for Further Investigation from Previous Study

During the wastewater characterization and calibration study in 2019, there were certain data discrepancies and model observations that warranted further investigation. The following recommendations for additional investigation were identified in the 2019 study to better understand current performance and potential limitations of the secondary treatment process. Further investigation

was not completed as part of this study (i.e., the same model calibration from 2019 was used). However, this information would be recommended as part of pre-design activities to validate future process modeling results should the District move forward with a nutrient removal upgrade in the future.

- Perform an additional special sampling event and updated wastewater characterization to confirm influent fractions.
- Conduct nitrification rate study to determine maximum specific growth rate and better understand potential nitrification inhibition.
- Investigate discrepancy between readings from airflow meters and DO probes.

2.3 Process Modeling Assumptions

The following assumptions were established for the process modeling effort based on discussions with District staff and industry best practices for nutrient removal operation.

2.3.1 Redundancy

Table 2-1 outlines the redundancy assumptions for the secondary treatment process. It is assumed that either one aeration tank or one secondary clarifier would be out of service during dry weather but not concurrently. The WRRF has two sets of secondary clarifiers, two large and two small. The larger clarifiers are currently considered the “duty” clarifiers as the smaller clarifiers are older and less reliable. This evaluation assumes that the two larger clarifiers would remain the “duty” clarifiers but that the smaller clarifiers would be available as needed when one large clarifier is out of service or during a peak wet weather event. It is recommended that the District consider rehabilitation of the two smaller clarifiers to ensure reliability for future nutrient removal operation.

Table 2-1: Redundancy Assumptions

Process Area	Dry Weather	Wet Weather
Aeration Tanks	1 Tank OOS	All Tanks Online
Secondary Clarifiers	1 Large SC OOS ¹	All Large SC Online ¹
Mechanical Equipment	N+1	N+1

¹ Small clarifiers available as needed.

2.3.2 Secondary Clarifier Loading

Secondary clarifier loading is critical for estimating secondary treatment capacity. The mixed liquor concentrations required for BNR are typically higher than those required for carbon removal only, resulting in higher solids loading on the secondary clarifiers. Sludge volume index (SVI) is often used as an indicator of sludge settleability. The WRRF historically has observed good SVI (below 120 mL/g). This is likely due to the biofilters located upstream of the activated sludge basins which remove soluble

carbon that would otherwise be available for filamentous bacteria in the activated sludge process and could lead to poor settling in the secondary clarifiers. Without operation of the biofilters, an unaerated selector zone (anoxic or anaerobic) in the front of the modified aeration tanks would be utilized for soluble carbon uptake and control of filamentous bacteria. Nonetheless, it is anticipated that SVI values may change with the different upgrade alternatives.

For this evaluation, industry standards for solids loading rate (SLR) for BNR operation were used to determine secondary treatment capacity, as listed below:

- Conventional BNR with anoxic selector: target SLR <35 lb/d/ft²
- Conventional BNR with anaerobic selector: target SLR <40 lb/d/ft²
- Densified BNR: target SLR <45 lb/d/ft²

2.3.3 Aerobic Solids Retention Time

It is assumed that nitrogen removal would be performed year-round. The modeling effort targeted full nitrification (e.g., ammonia concentrations < 2 mg/L on average), when possible, to minimize adverse impacts on the facility's chlorine disinfection system. Based on a minimum week temperature from the historical data of 18 degrees C, a minimum aerobic SRT of 2.8 days was established to maintain nitrifiers within the system. Assuming a safety factor of 2, the modeling assumed an aerobic SRT of 6 days.

3. Flow and Loading Projections

This section summarizes the flow and loading analysis used to develop the basis of design for the modeling effort. Historical data was analyzed for influent and primary effluent from 2015 to 2024.

3.1 Historical Flows and Loads

Table 3-1 summarizes the average influent flows and loads and Table 3-2 summarizes the average primary effluent flows and loads for the GSD WRRF over the last 10 years. Detailed plots for each parameter are provided in Appendix B. Overall, the WRRF influent flows and loads have been variable over the last 10 years with some possible reduction in flows and loads due to the COVID-19 pandemic since the University of California at Santa Barabara (a major discharger in the GSD service area) had reduced attendance during this time. District staff also noted that the influent flow meter was bypassed between March 2023 and July 2024 due to construction at the Influent Pump Station; a temporary flow measurement was used during this time. For this evaluation, the average flow and influent concentrations for the last 10 years was used to represent current conditions.

Table 3-1: Summary of Influent Flows and Loads

Parameter	Flow	BOD		TSS		NH ₃ -N	
	mgd	Conc, mg/L	Load, lb/d	Conc, mg/L	Load, lb/d	Conc, mg/L	Load, lb/d
2015	4.48	339	12,700	342	12,900	67	2,600
2016	3.95	373	12,400	383	12,850	69	2,400
2017	4.07	353	12,000	354	12,050	51	1,700
2018	4.6	398	15,450	436	16,900	49	2,000
2019	4.9	431	17,250	542	21,650	--	--
2020	4.4	369	13,450	444	16,250	--	--
2021	4.3	357	12,800	411	14,750	--	--
2022	4.1	362	12,400	423	14,550	--	--
2023	5.3	410	17,900	444	19,650	--	--
2024	5.6	340	15,950	426	20,050	--	--
Average	4.6	373	14,200	421	16,150	59	2,150

Table 3-2: Summary of Primary Effluent Loads

Parameter	BOD		TSS		NH ₃ -N	
	Conc, mg/L	Load, lb/d	Conc, mg/L	Load, lb/d	Conc, mg/L	Load, lb/d
2015	--	--	--	--	--	--
2016	202	6,700	93	2,900	53	1,650
2017	214	7,300	96	3,300	46	1,550
2018	172	6,700	98	3,850	41	1,600
2019	180	7,250	113	4,600	40	1,500
2020	191	7,000	83	3,100	39	1,400
2021	206	7,350	115	4,100	44	1,550
2022	225	7,750	104	3,600	47	1,550
2023	189	8,300	85	3,800	43	1,800
2024	163	7,550	68	3,100	42	1,900
Average	194	7,300	95	3,600	44	1,600

Figure 3-1 presents the average primary clarifier removals for TSS and BOD between 2016 and 2024. As discussed with District staff, the removal rates are relatively high for typical primary clarifier operation. The District doses ferric chloride upstream of the primaries for hydrogen sulfide control in the anaerobic digesters, however, this dose is below that required for chemically enhanced primary treatment (CEPT). Therefore, it is not expected that the ferric chloride addition is contributing significantly to higher clarifier removals. The District's influent wastewater is concentrated due to water conservation in the service area and may contain a high particulate fraction, resulting in higher than typical removal rates. During the process model calibration, primary clarifier removal rates were reduced to better match the downstream solids production. For the purposes of this evaluation, a more typical primary clarifier TSS removal rate of 60% was assumed. This provides some conservatism for the assumed loading to the secondary system.

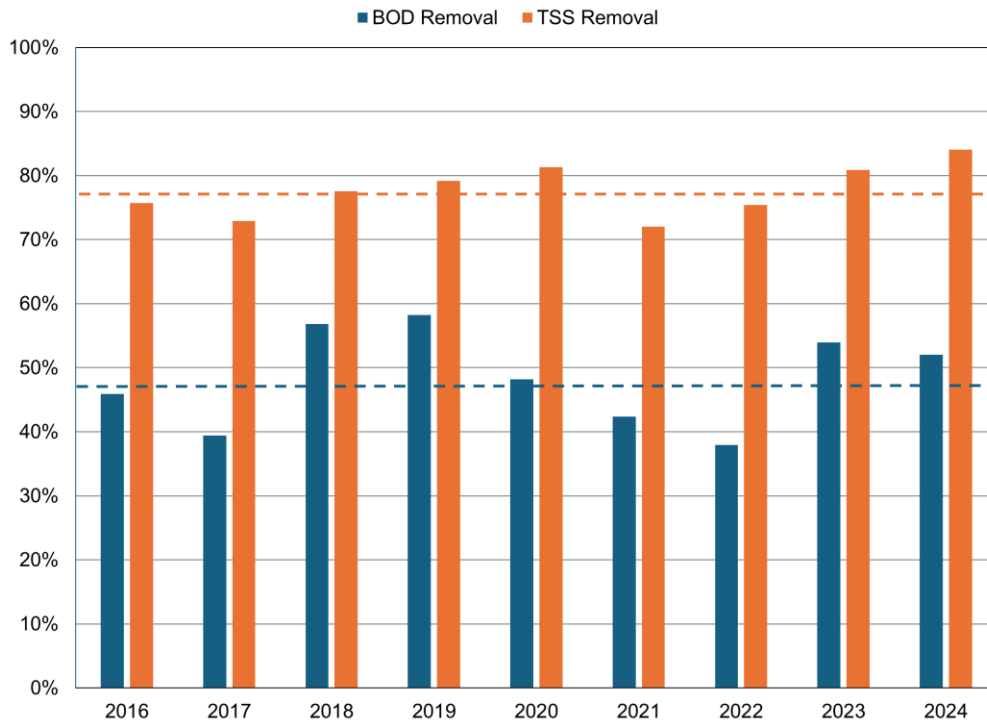


Figure 3-1: Historical Primary Clarifier Removal Rates

3.2 Peaking Factors

Historical data from 2015 to 2024 was used to calculate influent peaking factors. For the modeling effort, annual average and maximum 30-day loads were evaluated. To determine secondary clarifier capacity, a maximum day flow and a maximum 30-day load was assumed as the worst-case scenario. The peaking factors defined in Table 3-3 were assumed for this evaluation.

Table 3-3: Summary of Peaking Factors from Historical Data (2015-2024)

Parameter	Max 30-d	Max 7-d	Max Day
Flow	1.17	1.30	1.67
BOD Load	1.33	1.58	1.87
TSS Load	1.35	1.70	2.00

3.3 Projected Flows and Loads

The baseline flows and loads were established using historical data. Based on meeting minutes from a Board presentation dated May 5, 2025 (provided by the District), full buildout of the service area could include up to 7,826 additional units over the next 10 to 15 years. This would represent an approximately 20% increase in the service area if fully realized. There is inherent uncertainty as to whether all these

units will be constructed and the actual timing of buildout. For this evaluation, a growth scenario of 20% was assumed for the future buildout condition. It was assumed that the influent concentrations remain consistent and influent flows and loads increase by 20%. Assumptions for current and future flows and loads are outlined in Table 3-4.

Also included in Table 3-4 is a summary of the flow and loading design criteria for the WWTP Upgrading Project that was completed in 2012. Hazen notes that the WRRF is permitted for an average flow up to 7.64 mgd, however, the design flow for the 2012 project was higher at 9.8 mgd. The projected flow assuming a 20% increase in the service area is 5.5 mgd which is still below the permitted flow of 7.64 mgd. As shown, the flows and loads assumed for the 2012 project are much higher than the current loads as well as the future estimated loads assuming a 20% increase (with the exception of influent ammonia). Influent concentrations have become more concentrated since 2012, likely due to the impacts of water conservation efforts across California, however, influent flows have not increased as expected. The previous design assumed low-SRT operation (2 days) and carbon removal only. Given this, it is anticipated that the existing secondary treatment system has excess capacity that could be utilized to perform nitrogen removal.

Table 3-4: Summary of Influent Flow and Loading Projections (Average)

Parameter	Units	Current	Future (20% Increase)	2012 WWTP Upgrading Project
Flow	mgd	4.6	5.5	9.8
BOD	mg/L	375	375	251
	lb/d	14,200	17,100	20,500
TSS	mg/L	420	420	267
	lb/d	16,000	19,200	21,800
Ammonia	mg/L	45	45	30
	lb/d	2,200	2,700	2,450

4. Alternatives Analysis

Based on feedback from District staff, the following technologies were selected for analysis. The main drivers for selection of these technologies were maturity in the industry, emphasis on nitrogen removal, compatibility with the existing secondary process, and potential synergy with other potential initiatives at the WRRF such as recycled water production and reuse. Intensification technologies are discussed in Section 4.6 and could be further explored in the future if necessary to provide additional capacity. Fact sheets for the “world of options” for nutrient removal technologies are provided in Appendix C.

- Modified-Ludzack Ettinger (MLE) Process
- Step Feed BNR
- Anaerobic-Anoxic-Aerobic (A2O)
- “Flexible” BNR (combines elements of MLE and step feed BNR)
- Membrane Bioreactor (MBR)

For each alternative, a brief description, key modeling results, and a conceptual layout are provided in the sections below. Key modeling results were developed using the calibrated process model described in Section 2.

4.1 MLE

The MLE process is a conventional approach for nitrogen removal and is a mature technology. MLE is the most common activated sludge configuration that can achieve significant nitrogen removal. In the MLE process, denitrification is performed in the upfront anoxic selector and nitrification is performed in the aerated zones. Nitrate formed in the aerobic zone is returned to the anoxic zone via an internal mixed liquor return (IMLR) stream to optimize denitrification using carbon in the primary effluent, as illustrated in Figure 4-1.

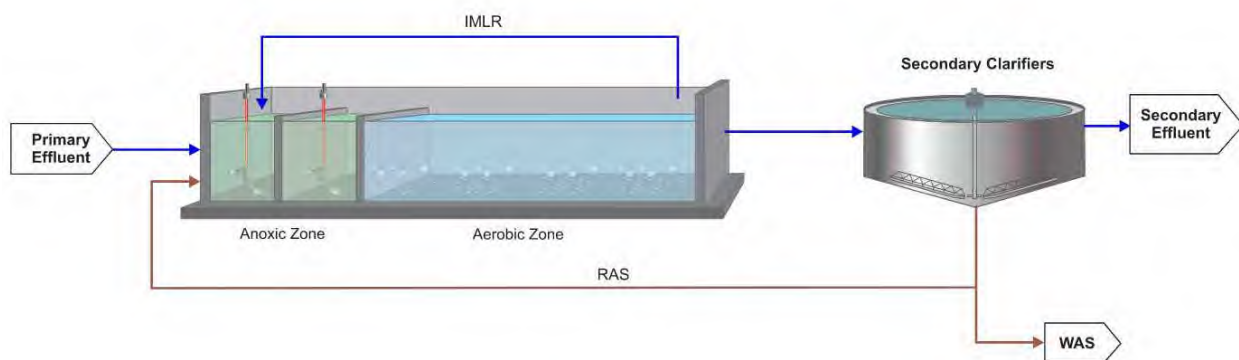


Figure 4-1: MLE Configuration

Table 4-1 summarizes the key model predictions for the MLE configuration. Capacity for the secondary system is driven by the secondary clarifier loading with a target of maintaining an SLR below 35 lb/d/ft² anoxic selector). For the MLE alternative, approximately 50% TIN removal can be achieved at the current flows and loads with the existing aeration tank volume (1.6 MG). However, to accommodate a future increase in flows and loads of 20%, an additional aeration tank (same volume as the existing tanks [0.53 MG] for a total tank volume of 2.1 MG) would be required to maintain acceptable SLRs for the secondary clarifiers. This is based on the assumption that the two large clarifiers are in operation under typical annual average and max month conditions, and that one of the smaller clarifiers would only be available when a large clarifier is out of service or for wet weather. Rehabilitation of the two smaller clarifiers for routine use could help to alleviate clarifiers loading limitations for the MLE alternative. Full nitrification (ammonia concentration <1 mg/L) is possible with the MLE configuration.

Table 4-1: Modeling Results for MLE

Parameter	Units	Current		Future (20% Increase)	
		AA	MM	AA	MM
Flow	mgd	4.6	5.4	5.5	6.4
Basin Volume	MG	1.6		2.1	
Aerobic SRT	days	6		6	
Total SRT	days	8		8	
MLSS	mg/L	3,200	3,900	2,900	3,600
SLR ¹	lb/d/ft ²	21	35	23	35
Eff TIN	mg/L	22		22	
Eff NH ₃	mg/L	<1		<1	

¹ SLR assumes only two large clarifiers in service.

Figure 4-2 presents a conceptual site layout for the MLE alternative. The existing aeration basins would be modified with baffle walls and mixers to create an anoxic selector, and the existing diffuser grid would be replaced to accommodate the air demand distribution for nitrogen removal. IMLR pumps would also be installed to return flow from the end of the aeration tanks to the upfront anoxic zone. The modeling results show that construction of a fourth aeration tank would be required to accommodate a 20% increase in flows and loads. The original design for the aeration tanks allocated the area west of the existing aeration tanks for construction of a fourth tank, however, the District has since installed other equipment in this area and would prefer to avoid adding a fourth tank if possible.



Figure 4-2: Conceptual Site Layout for MLE

4.2 Step Feed BNR

The step feed BNR configuration represents another conventional approach for nitrogen removal and is a mature technology. Step feed BNR is a secondary treatment process where primary effluent is fed at multiple locations in an aeration basin as a way to distribute oxygen demand while reducing the MLSS concentration and therefore reducing the solids loading rate on the secondary clarifiers. Denitrification occurs in the anoxic zones and nitrification occurs in the aerobic zones. Nitrate is returned to the first anoxic zone via the RAS; IMLR pumping is typically not required.

For this evaluation, two different step feed BNR configurations were modeled. The first, shown in Figure 4-3, includes two feed locations for primary effluent at the front of the aeration basin and halfway down the basin.

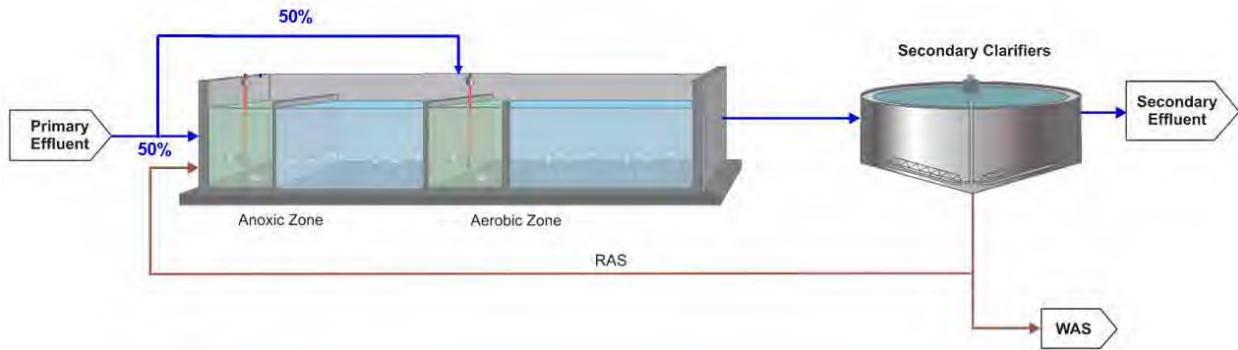


Figure 4-3: Step Feed BNR Configuration (2 Feed Locations)

Table 4-2 summarizes the key modeling results for the step feed BNR configuration with two feed locations. As shown, having two feed locations helps to reduce both the MLSS concentration and the SLR on the secondary clarifiers. The modeling results show that step feed BNR operation could accommodate the future 20% increase in flows and loads without construction of a fourth aeration tank. Routine use of at least one smaller secondary clarifiers would be required when a large clarifier is out of service or during a wet weather event to accommodate the future flows and loads.

Similar TIN removal is achieved compared to the MLE configuration, however, some ammonia bleed-through is possible. Variations in ammonia concentration in the secondary effluent are not ideal because this could cause the disinfection process to swing in and out of break-point chlorination. GSD already maintains a liquid ammonium sulfate (LAS) dosing system to help maintain chloramination for the existing treatment process. The LAS system could be utilized to help stabilize disinfection if ammonia bleed-through is observed.

Table 4-2: Modeling Results for Step Feed BNR (2 Feed Locations)

Parameter	Units	Current		Future (20% Increase)	
		AA	MM	AA	MM
Flow	mgd	4.6	5.4	5.5	6.4
Basin Volume	MG	1.6		1.6	
Aerobic SRT	days	6		6	
Total SRT	days	8		8	
MLSS	mg/L	2,800	3,400	3,300	4,000
SLR ¹	lb/d/ft ²	19	30	26	30 ²
Eff TIN	mg/L	22		22	
Eff NH ₃	mg/L	2		2	

¹ SLR assumes two large clarifiers in service.

² At future max month condition, two large clarifiers and one small clarifier are required to maintain SLR below the target of 35 lb/d/ft².

The second step feed BNR configuration modeled four feed locations along the aeration basin, as shown in Figure 4-4. The flow split between the feed locations was estimated to help distribute oxygen demand, reduce the MLSS concentration in the final zones, and reduce ammonia bleed-through in the final zones.

The primary advantage of the additional feed locations is to reduce the ammonia bleed-through in the secondary effluent, however, addition baffle walls and mixers would be required for the two additional feed locations. Additionally, the current aeration basins have step feed gates for each zone. To achieve a more complex flow split as shown in Figure 4-4, additional infrastructure may be required, increasing costs.

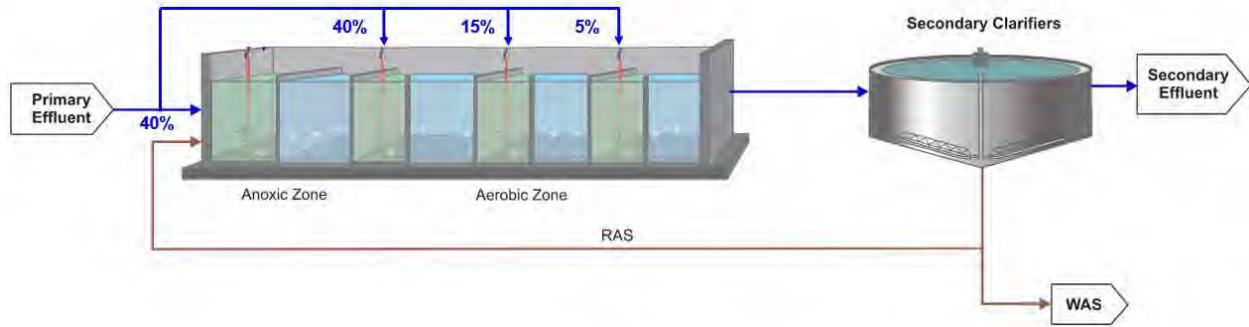


Figure 4-4: Step Feed BNR Configuration (4 Feed Locations)

Table 4-3 summarizes the modeling results for the step feed BNR configuration with four feed locations. As shown, the MLSS concentrations are slightly higher than the alternative with two feed locations but still lower compared to the MLE alternative. The modeling results show that this alternative could also eliminate the need for a fourth aeration tank, however, routine use of the both smaller secondary clarifiers would be required for the future flow and loading scenario. Similar TIN removal to the previous alternatives and full nitrification are achieved with this configuration.

Table 4-3: Modeling Results for Step Feed BNR (4 Feed Locations)

Parameter	Units	Current		Future (20% Increase)	
		AA	MM	AA	MM
Flow	mgd	4.6	5.4	5.5	6.4
Basin Volume	MG	1.6		1.6	
Aerobic SRT	days	6		6	
Total SRT	days	8		8	
MLSS	mg/L	2,850	3,550	3,350	4,150
SLR ¹	lb/d/ft ²	19	32	27	32 ²
Eff TIN	mg/L	22		22	
Eff NH ₃	mg/L	<1		<1	

¹ SLR assumes two large clarifiers in service.

² At future max month condition, two large clarifiers and one small clarifier are required to maintain SLR below the target of 35 lb/d/ft².

Figure 4-5 presents a conceptual site layout for the step feed BNR alternatives. The existing aeration basins would be modified with baffle walls and mixers to create anoxic selector zones, and the existing diffuser grid would be replaced to accommodate the air demand distribution for nitrogen removal. The modeling results suggest that step feed BNR operation would reduce the MLSS concentration such that construction of a fourth aeration tank could be delayed or avoided to accommodate a 20% increase in

flows and loads. The step feed BNR alternative represents a major advantage since the District would prefer to avoid construction of the fourth aeration tank if possible.



Figure 4-5: Conceptual Site Layout for Step Feed BNR

4.3 A2O

The A2O configuration is a conventional approach for nitrogen and phosphorus removal and is a mature technology. As shown in Figure 4-6, an anaerobic selector is provided upstream of the anoxic zone which promotes selection and growth of phosphorus accumulating organisms (PAOs) which are responsible for biological phosphorus removal. While phosphorus removal is not a driver for the District, the presence of these organisms tends to improve sludge settleability. The A2O configuration is also a common set up for implementing densified activated sludge (DAS), which is an intensification process to achieve additional capacity from existing tanks. Like the MLE configuration, denitrification for the A2O process is performed in the anoxic zone and nitrification is performed in the aerated zones. Nitrate is returned to the anoxic zone via the IMLR stream to optimize denitrification using carbon present in the primary effluent.

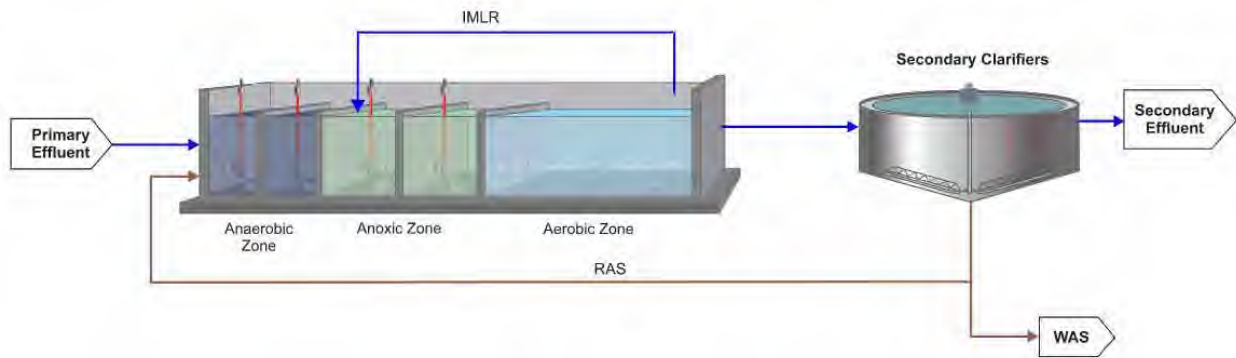


Figure 4-6: A2O Configuration

Table 4-4 presents the key modeling results for the A2O configuration. Similar to the MLE alternative, a fourth aeration tank would be required to accommodate the future 20% increase in flows and loads, even with the additional settling benefits (SLR up to 40 lb/d/ft² [anaerobic selector]). Rehabilitation of the two smaller clarifiers for routine use could help to alleviate clarifiers loading limitations for the A2O alternative. The model predicts slightly worse TIN removal (48%) compared to the MLE and step feed BNR configurations due to soluble carbon uptake in the anaerobic selector that is needed for denitrification. Full nitrification is achieved.

Table 4-4: Modeling Results for A2O

Parameter	Units	Current		Future (20% Increase)	
		AA	MM	AA	MM
Flow	mgd	4.6	5.4	5.5	6.4
Basin Volume	MG	1.6		2.1	
Aerobic SRT	days	6		6	
Total SRT	days	8		8	
MLSS	mg/L	3,200	3,900	2,900	3,600
SLR ¹	lb/d/ft ²	21	35	23	35
Eff TIN	mg/L	23		23	
Eff NH ₃	mg/L	<1		<1	

¹ SLR assumes two large clarifiers in service.

Figure 4-7 presents the conceptual site layout for the A2O configuration. Similar to the MLE and step feed BNR configurations, the existing aeration basins would be modified with baffle walls and mixers to create an anaerobic and anoxic selector, and the existing diffuser grid would be replaced to accommodate the air demand distribution for nitrogen removal. IMLR pumps would also be installed to return flow from the end of the aeration tanks to the anoxic zones. The modeling results show that construction of a fourth aeration tank would be required to accommodate a 20% increase in flows and loads. A fourth aeration tank is shown west of the existing aeration tanks.



Figure 4-7: Conceptual Site Layout for A2O

4.4 Flexible BNR

Based on discussions with District staff, a flexible BNR alternative that combines the elements of the MLE and step feed BNR alternatives by providing additional swing zones to allow for operation in different modes may be preferred (Figure 4-8). The MLE mode would involve operating the first swing zone as anoxic and the second swing zone as aerobic with IMLR, which would prioritize nitrogen removal. The Step feed BNR mode would involve operating the first swing zone as aerobic and the second swing zone as anoxic. IMLR pumping would not be required for step feed mode. Step feed BNR mode would prioritize capacity and could be implemented during wet weather or year-round to allow the District to delay or avoid construction of a fourth aeration basin depending on how growth in the service area materializes. The aeration system diffuser grid would be designed to accommodate both modes of operation.

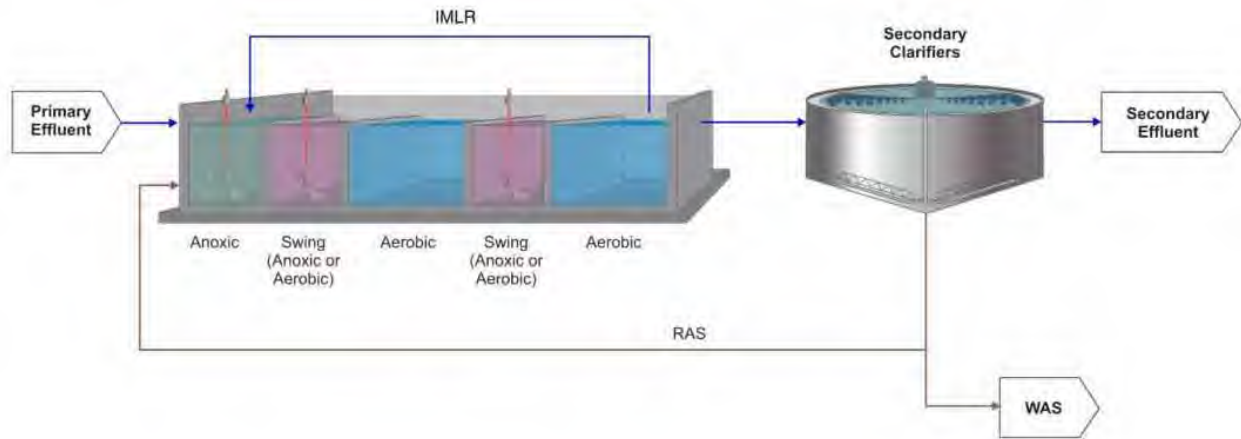


Figure 4-8: Potential Flexible BNR Configuration

Table 4-5 outlines the model-predictions for the flexible BNR alternative. Under current flows and loads, the system could be operated in either MLE or step feed BNR mode, and the range of MLSS concentration, SLR, and effluent quality is provided for both modes. Under the future 20% growth scenario, the system would need to be operated in the step feed BNR mode to accommodate the increase in flows and loads without construction of a fourth aeration tank.

Table 4-5: Modeling Results for Flexible BNR

Parameter	Units	Current (MLE or Step Feed BNR)		Future (20% Increase) (Step Feed BNR)	
		AA	MM	AA	MM
Flow	mgd	4.6	5.4	5.5	6.4
Basin Volume	MG	1.6		1.6	
Aerobic SRT	days	6		6	
Total SRT	days	8		8	
MLSS	mg/L	2,800 - 3,200	3,400 - 3,900	3,300	4,000
SLR ¹	lb/d/ft ²	19 - 21	30 - 35	26	30 ²
Eff TIN	mg/L	22		22	
Eff NH ₃	mg/L	<1 - 2		2	

¹ SLR assumes only two large clarifiers in service.

² At future max month condition, two large clarifiers and one small clarifier are required to maintain SLR below the target of 35 lb/d/ft².

This alternative would be very similar to the step feed BNR alternative from a site layout perspective, as shown in Figure 4-9, and would involve the addition two swing zones and IMLR pumping.



Figure 4-9: Conceptual Site Layout for Flexible BNR

4.5 MBR

The MBR technology is different from the previous configurations in that it utilizes membranes for solids separation instead of secondary clarifiers (Figure 4-10). The biological processes for nitrogen removal are the same for an MBR system except that the membrane filtration step allows for operation at much higher mixed liquor concentrations, and thus smaller tank volumes or greater treatment capacity within the same volume. The MBR system produces a higher quality effluent compared to the other activated sludge alternatives and is suitable to be fed directly to a reverse osmosis (RO) system for advanced treatment if needed. The MBR effluent would also be suitable for recycled water production and would eliminate the need for the tertiary filters the District operates for the REC Plant. The disadvantages to the MBR system are that it would require construction of new membrane tanks and other ancillary facilities (e.g., fine screens to protect the membranes, new blowers and electrical equipment, permeate pumps, upsized RAS pumps, chemical storage facilities).

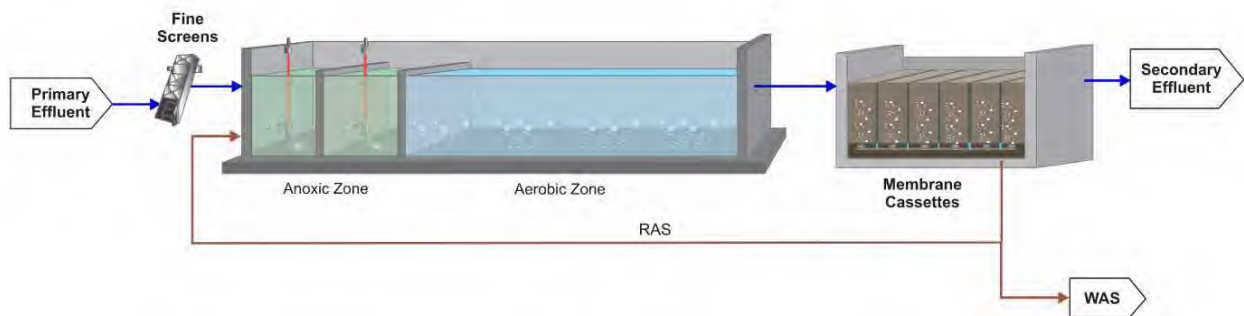


Figure 4-10: MBR Configuration

Table 4-6 presents the modeling results for the MBR alternative. A similar aerobic SRT and anoxic zone sizing is shown for comparison purposes to the other alternatives, however, design of the MBR system could be optimized to achieve higher TIN removal if needed. Since the MBR system does not require secondary clarifiers, SLR is not a limiting factor. The MLSS concentration in the aeration tanks for an MBR system can be much higher (6,000 – 8,000 mg/L) compared to the other activated sludge alternatives. However, if the District chooses to utilize all three existing aeration tanks, this would be more volume than required and allow for operation at lower MLSS concentrations (~3,800 mg/L). The membrane tanks would be designed to operate at an MLSS concentration between 10,000 – 12,000 mg/L. For these reasons, the MBR alternative would be sufficient to accommodate current and future flows and loads.

Table 4-6: Modeling Results for MBR

Parameter	Units	Current and Future
Average Flow	mgd	4.6 - 5.5
Basin Volume ¹	MG	1.6
Aerobic SRT	days	6
Total SRT	days	8
MLSS (Aeration Basins)	mg/L	3,800 (existing tanks) 6,000 - 8,000 (max allowable)
MLSS (Membrane Tanks)	mg/L	10,000 - 12,000
SLR ²	lb/d/ft ²	N/A
Eff TIN	mg/L	22
Eff NH ₃	mg/L	<1

¹ Does not include the volume of the new membrane tanks.

² The secondary clarifiers would not be in operation for the MBR alternative, therefore, SLR is not relevant. The membrane tanks would be limited to a certain flux rate.

Figure 4-11 presents the conceptual site layout for the MBR alternative. The existing basins would be modified with baffle walls and mixers to create an anoxic selector and the diffuser grid would be replaced to accommodate the air demand required for nitrogen removal. The existing secondary clarifiers would be decommissioned, and new larger RAS pumps would be installed to accommodate the larger pumping

capacity required for the MBR system. Construction of a fourth aeration tank would not be required, however, construction of new membrane tanks and facilities for other support equipment would be needed. It is proposed that the new fine screens, membrane tanks, permeate pumps and chemical storage could be constructed in the footprint of the two smaller secondary clarifiers since the plant could operate using the larger clarifiers during construction. New blowers and associated electrical equipment for the membrane tanks would be required. There is extra room in the existing blower building, however, a more detailed evaluation would need to be completed to determine if there is sufficient space and electrical power. Of all the alternatives, the MBR system would require the most new infrastructure but other treatment processes (i.e., secondary clarifiers and tertiary filters) would no longer need to be operated or maintained, freeing up additional space on the site for future upgrades or other processes.



Figure 4-11: Conceptual Site Layout for MBR

4.6 Other Considerations

The following sections discuss additional considerations for nutrient removal at the GSD WRRF.

4.6.1 Opportunities to Avoid Construction of Additional Aeration Basin

Based on discussions with District staff, the secondary treatment design from 2012 allocated additional space west of the existing aeration tanks for construction of a future fourth aeration tank. Since this project was completed and flows and loads have remained well below the 2012 design criteria, the District has located other equipment in this area. While construction of a fourth aeration tank is still

possible, this would require relocation of the existing equipment and additional construction costs compared to modifying the existing tanks. As such, the District would prefer to avoid constructing a fourth aeration tank if possible.

It is unclear to what extent the projected growth in the service area will be achieved or at what timescale. The modeling results predict that if full buildout is achieved (assuming a 20% increase in the service area), the MLE and A2O configurations would require construction of a fourth tank to accommodate the future flows and loads, while the step feed BNR configuration would allow the District to delay or avoid construction of a fourth tank.

In the future, if full buildout is achieved and additional nitrogen removal (beyond what is possible with the step feed BNR configuration) is required, the District could consider other intensification alternatives to achieve additional capacity or greater nitrogen removal using the existing tanks, including:

- **Densified Activated Sludge (DAS)**
 - DAS is an intensification process that can achieve nitrogen and phosphorus removal. The DAS process involves biological and physical selection of dense floc/granules to improve settling characteristics. DAS typically has a significantly lower SVI. This allows for the aeration tanks to operate at a higher MLSS concentration without overloading the secondary clarifiers (SLR up to 45 lb/d/ft²). The A2O configuration is the most common for achieving DAS. The addition of hydrocyclones on the WAS line is also commonly included to help retain dense floc within the secondary system.
- **Membrane Aerated Biofilm Reactor (MABR)**
 - This process involves addition of MABR cassettes to the anoxic zone of the existing aeration tanks which promote growth of a nitrifying biomass. Oxygen is supplied directly to the biofilm via the membranes to promote nitrification within the anoxic zones (typically only denitrification occurs in the anoxic zones). This allows for a reduction in aerobic SRT in the aeration tanks which provides additional capacity to the secondary system.
- **Other emerging intensification technologies**
 - DAS and MABR are referenced above since these intensification technologies are currently considered innovative (more mature than emerging).
 - In the future, other emerging technologies may become more viable and the District could evaluate their applicability at the WRRF at that time.

4.6.2 Potential to Meet for Stringent Nitrogen Limits

Effluent nitrogen limits have not been formally established by the regulatory body for GSD or other ocean dischargers. For the purposes of this evaluation, a TIN mass reduction similar to what was implemented in the Bay Area (50% TIN mass reduction) was assumed. If a higher mass reduction were to be implemented for GSD, additional nitrogen removal could be achieved with the MBR configuration or the

MLE and A2O configurations (potential need for supplemental carbon). Additional nitrogen removal may be limited with the step feed BNR configuration.

However, if ultra-low nitrogen limits (e.g., TIN < 8 mg/L) were implemented, which is considered unlikely for ocean dischargers, a post-anoxic zone would likely be required. This would reduce the capacity of the existing tanks and likely trigger evaluation of the intensification alternatives described in Section 4.6.1.

4.6.3 Overview of Existing Aeration System

As part of the 2012 WWTP Upgrading Project, three equally sized blowers were installed with a rated capacity of 3,000 scfm each (total capacity of 9,000 scfm). Based on discussions with District staff, one blower has since been replaced with a smaller blower due to issues providing sufficient turn-down. The blower building was originally designed with space for five blowers, as shown in Figure 4-12. Replacement of the smaller blower with a larger blower and/or addition of a fourth blower may be required in the future assuming a 20% increase in flows and loads and approximately 50% nitrogen removal estimated based on the modeling results discussed above.

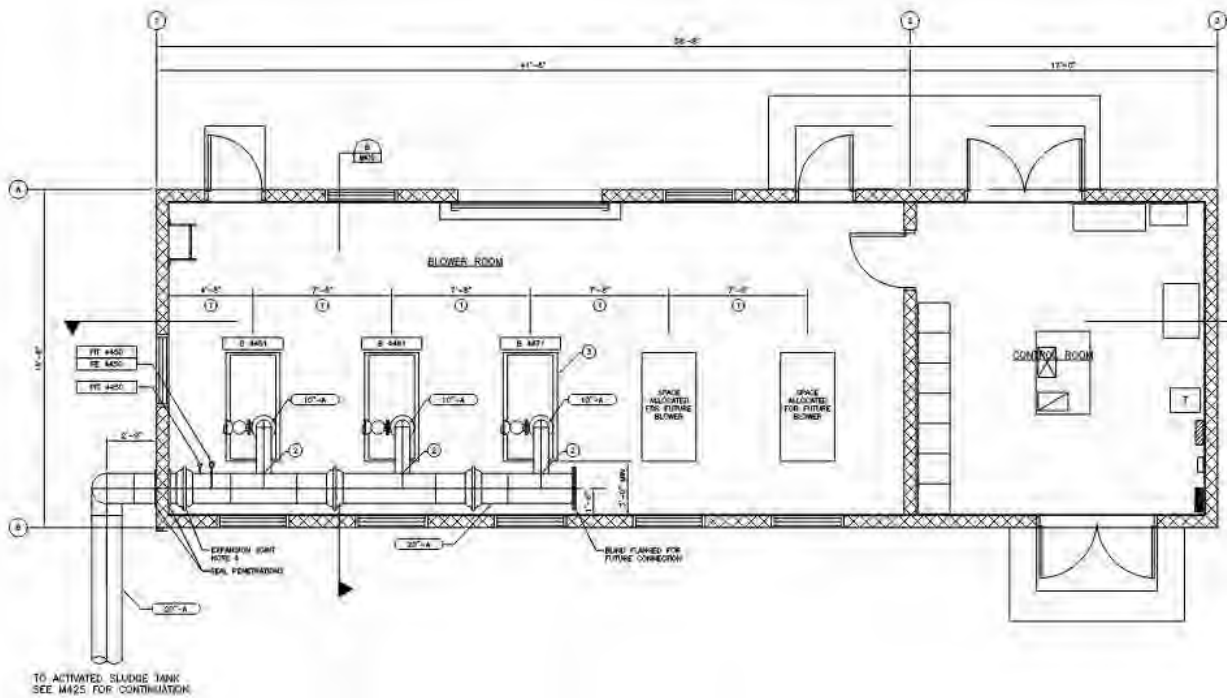


Figure 4-12: Plan View of Existing Blower Building from 2012 WWTP Upgrading Project

4.7 Summary of Alternatives

Table 4-7 presents a summary of the nitrogen removal alternatives evaluated as part of this TM. Based on feedback from District staff following a review meeting on December 11, 2026, the following alternatives were carried forward for cost analysis, as summarized in Section 1 below:

- Step Feed BNR
- Flexible BNR
- Flexible BNR
- MBR

Table 4-7: Summary of Alternatives

Consideration	MLE	Step Feed BNR	A2O	“Flex” BNR	MBR
Meets Expected Nitrogen Limits	Yes	Yes	Yes	Yes	Yes
Flexibility to Meet Lower Nitrogen Limits	Yes – with external carbon addition	May be limited	Yes – with external carbon addition	Yes – with external carbon addition	Yes
Ability to Accommodate 20% Increase in Flows and Loads	No	Yes	Depends on clarifier	No	Yes
Added Infrastructure	Modifications to existing basins and construction of fourth basin.	Modifications to existing basins.	Modifications to existing basins and construction of fourth basin.	Modifications to existing basins.	Modifications to existing basins, new MBR tanks, fine screens, support equipment.
Advantages	Maximize nitrogen removal.	Added capacity to avoid construction of fourth basin.	Better settling properties and set up for future intensification with DAS.	Flexibility to maximize nitrogen removal with MLE and operate in step feed mode to help with capacity.	Synergy with reuse and IPR.
Disadvantages	Need fourth basin to accommodate 20% growth.	May be limited to achieve lower nitrogen limits.	Need fourth basin to accommodate 20% growth unless implement DAS.	Some added costs to provide swing zones for MLE and step feed operation.	Most additional infrastructure and higher operating costs; some stranded assets.

5. Conceptual Cost Estimate

A Class 5 cost estimate was developed for each of the short-listed alternatives identified above. Per the Association for the Advancement of Cost Engineering (AACE), Class 5 estimates typically have a accuracy range of -50% on the low side and +100% on the high side. Additionally, a 40% design contingency has been included to account for the current level of design development and due to the estimate classification. All costs are presented in 2026 dollars and assume a construction duration of 18 months. The conceptual construction costs presented in the TM are preliminary and subject to refinement if design advances.

The construction cost estimates for the step feed BNR and flexible BNR alternatives involve modifications to the existing aeration basins and blower building, including:

- **Step Feed BNR in Existing Aeration Tanks**
 - Baffle walls to create two anoxic zones (3 per tank)
 - Submersible mixers for anoxic zones (4 per tank)
 - Replacement of existing diffuser grid and dropleg piping
 - Replacement of smaller blower with one large blower to match existing large blower (150 hp high-speed turbo blower)
 - Electrical and controls equipment
- **Flexible BNR in Existing Aeration Tanks**
 - Baffle walls to create one dedicated anoxic zone and two swing zones (4 per tank)
 - Submersible mixers for anoxic/swing zones (4 per tank)
 - Replacement of existing diffuser grid and dropleg piping
 - 60-hp IMLR pump with VFD (1 per tank)
 - Replacement of smaller blower with one large blower to match existing large blower (150 hp high-speed turbo blower)
 - Electrical and controls equipment

For comparison purposes, the cost to construct a fourth aeration tank and convert to BNR operation (assuming the flexible BNR configuration) is also provided, including:

- **Flexible BNR with Construction of a Fourth Aeration Tank**
 - New aeration tank (same size and volume as existing tanks)
 - Baffle walls to create one dedicated anoxic zone and two swing zones (4 per tank)
 - Submersible mixers for anoxic/swing zones (4 per tank)
 - Replacement of existing diffuser grid and dropleg piping in existing aeration tanks; new diffuser grid in new aeration tank
 - 60-hp IMLR pump with VFD (1 per tank)
 - Replacement of smaller blower with one large blower to match existing large blower (150 hp high-speed turbo blower)
 - Electrical and controls equipment

The MBR alternative requires more extensive plant modifications compared to the step feed BNR and flexible BNR alternatives. Vendor quotes were obtained for the fine screening and membrane equipment (included in Appendix D. The costs for the MBR alternative includes the following elements:

- **MBR**
 - Modifications to the existing aeration basins
 - Baffle walls to create anoxic zone (2 per tank)
 - Submersible mixers for anoxic/swing zones (2 per tank)
 - Replacement of existing diffuser grid and dropleg piping
 - Replacement of smaller blower with one large blower to match existing large blower (150 hp high-speed turbo blower)
 - Electrical and controls equipment
 - Fine screening facility
 - Construction of new membrane tanks
 - Construction of an MBR support building adjacent to the new membrane tanks housing permeate pumps, new RAS pumps, MBR process blowers and air compressors, chemical storage, and electrical/ controls equipment.

Table 5-1 summarizes the estimated construction cost for each of the short-listed alternatives. As shown, the modifications to the existing secondary process required to implement the step feed BNR or flexible BNR alternatives are estimated to cost between \$10-\$16 M. The flexible BNR alternative is slightly more expensive since it involves added flexibility to operate in either step feed BNR or MLE mode. The MBR alternative is significantly more expensive compared to the other alternatives since it involves construction of a number of new facilities, including new membrane tanks, an MBR support building, and a fine screening structure. However, the MBR system would eliminate the need to rehabilitate the existing secondary clarifiers and tertiary filters and would produce a high-quality effluent suitable for RO (no additional microfiltration required) and other advanced treatment processes if needed in the future.

Table 5-1: Summary of Conceptual Construction Costs (2026 Dollars)

Alternative	Conceptual Construction Cost
Step Feed BNR in Existing Tanks	\$10 M
Flexible BNR in Existing Tanks	\$16 M
Flexible BNR with Construction of a Fourth Aeration Tank	\$26 M
MBR	\$72 M

Appendix A: 2019 Process Calibration Memo

December 20, 2019

To: Steve Wagner, Goleta Sanitary District
John Crisman, Goleta Sanitary District
Lena Cox, Goleta Sanitary District

From: Alyssa Mayer, Hazen and Sawyer
Nandita Ahuja, Hazen and Sawyer
Bryce Danker, Hazen and Sawyer
Hersy Enriquez, Hazen and Sawyer
Derya Dursun, Hazen and Sawyer
Paul Pitt, Hazen and Sawyer
Ron Latimer, Hazen and Sawyer
Dawn Guendert, Hazen and Sawyer

Process Model Calibration Memo

DRAFT

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1. Background and Methodology

Goleta Sanitary District's (GSD) water resource recovery plant (WRRP) treats residential and domestic wastewater with primary treatment and secondary treatment and tertiary treatment for recycled water use. GSD is now considering improvements to the WRRP that would enhance the environmental and economic sustainability of the WRRP such as:

- Potable reuse in partnership with Goleta Water District
- Receipt of high strength waste
- Beneficial use of digester gas
- Class A biosolids

In order for GSD staff to better assess current plant performance and potential options for enhancing performance, a process model of the WRRP would be beneficial. The process model will support staff's efforts to optimize wastewater treatment process operations, increase staff knowledge and enhance confidence in future planning and design decisions.

GSD contracted with Hazen and Sawyer (Hazen) to develop a GPS-X Mantis3 calibrated process model for the WRRP. Hazen performed the following tasks as a part of this project:

- **Historical Data Review.** Hazen reviewed three (3) years of historical operating data to understand influent loading and plant performance. Data quality was evaluated to identify areas for additional investigation. Three notable areas of data concerns were identified:
 - High influent concentrations. Very high spikes in the influent BOD and TSS concentrations were observed in 2019. The solids production and overall solids mass balance data does not support the very high measured spikes in influent concentration. The influent sampler is impacted by internal recycles, but it was also suspected to be impacted by significant slug loads coming into the influent and/or some sort of sampling bias impacting the composite sampler resulting in very high particulate concentrations, beyond what would be imparted by the sidestream loads.
 - Low TSS and BOD sample data from Primary Effluent and Biofilter Effluent Samplers. It is suspected some straining of solids is occurring, perhaps due to high velocities in the channels. Therefore, it is anticipated that the historical TSS and BOD data from these samplers are biased low.
 - High digester gas / lb TS removed. The digester gas measurement indicates a higher than typical gas production (scfm) per pound of volatile solids destroyed. The measured data indicates roughly 25 scfm/lb VS, while a more typical value is in the 12-18 scfm/lbVS range. The gas meters are considered reliable, so additional investigation was done of the digester loading through supplemental sampling.
- **Special Sampling.** A special sampling plan was developed to collect the necessary information for developing influent characteristics and other model inputs. Seven days of sampling data collection were performed in July 2019 by GSD and Hazen staff.

- **Model Calibration and Validation.** The model was set up to reflect the plant conditions during the special sampling week for calibration. An iterative approach to adjusting parameters to match measured data was used on a steady state and hourly dynamic basis. A validation with separate time period of data were used to confirm calibration assumptions.

2. Model Assumptions

The model calibration was performed around the sampling week in July 2019. The GPS-X model layout is presented in **Figure 1**.

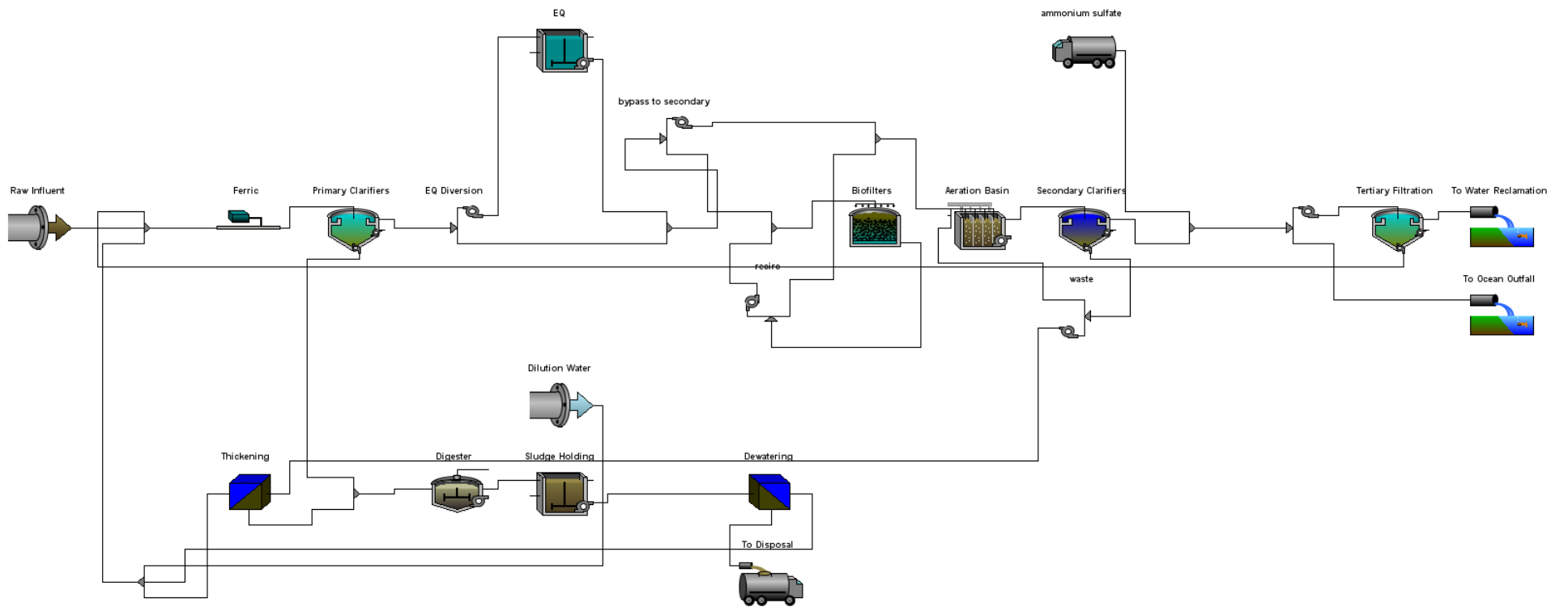


Figure 1. GPS-X Model Layout of GSD WRRP model

Influent. Due to the issues with the influent sample (which occurred through the special sampling period in July 2019), adjustments had to be made to the measured influent concentrations. The soluble parameters were used directly, but the particulate fraction was determined based on a holistic solids balance around the plant (considering the MLSS, WAS, primary sludge, digester gas production). A higher fraction of organic solids was assigned to the influent to help match the measured gas production. Ultimately, a 25% reduction in the total measured combined influent BOD and TSS was required to match the overall plant mass balance.

Operational Parameters. Measured flows were used where available. The aeration basin DO was set to match the airflows and the capture (% TSS removal) for the thickening and dewatering processes were set to match sampling data. Primary clarifier removals were set to match MLSS and gas production.

Kinetic Parameter Adjustments. Adjustments were made to the biofilm diffusion in the biofilters to match the Biofilter effluent ammonia and soluble BOD. Aeration tank kinetic parameters were adjusted to reflect some inhibition of nitrifiers and sensitivity to low DO and pH.

A full summary of the model assumptions is included in the Appendix.

3. Calibration and Validation Results

The model was simulated on both a steady state and dynamic hourly basis. An abbreviated summary of the results is included below, and the full summary of the calibration / validation results, can be found in the Appendix.

As shown in Table 1, a good match on the overall plant mass balance was observed. The primary sludge concentration is suspected to be low during the sampling month. Typical primary sludge concentrations are around 4.5%.

Table 1. Steady State Calibration Results for Solids Production

Parameter	units	Sampling Week		
		Measured	Modeled	% Difference
Aeration Basin				
AB MLSS	mg/L	4,790	4,570	-4%
RAS TSS	mg/L	11,300	10,300	-9%
Primary Sludge				
PS Flow	mgd	0.024	0.024	1%
PS TSS	mg/L	3.87%	4.36%	13%
PS TSS Load	ppd	7,080	8,730	23%
WAS				
WAS Flow	mgd	0.047	0.047	1%
WAS TSS	mg/L	11,300	10,300	-9%
WAS TSS Load	ppd	4,400	4,030	-8%

Digester				
Average Digester % Solids	%	2.00%	2.01%	1%
Gas Pad Biogas Produced	scfd	116,000	116,000	0%
Dewatering				
Screw Press Feed TSS Load	ppd	6,560	6,010	-8%

Based on the sampling data, we have confidence in the soluble BOD and TKN loading into the aeration basin. When matching both the aeration basin influent loading and the treatment performance (BOD removal and nitrification) the predicted air demand is similar to the measured air demand (~20% higher). However, the predicted DO concentration is lower than measured (~0.1 mg/L compared to the measured 0.5 mg/L). There are some potential reasons for this discrepancy, but more confidence was given to airflow measurements based on input from GSD. Nitrification and Denitrification are very sensitive to the DO concentrations in the basin, so additional investigation to confirm this assumption is recommended. Table 2 summarizes the average treatment occurring in the basin.

Table 2. Steady State Calibration Results for Treatment Performance

Parameter	units	Measured	Modeled	% Var.
Aeration Basin Influent				
Flow	mgd	4.6	4.7	1%
AB Influent sCOD (XG)	mg/L	122	116	-4%
AB Influent sBOD (XG)	mg/L	45	46	4%
AB Influent TKN	mg/L	44	46	5%
AB Influent sTKN (XG)	mg/L	36	36	-1%
AB Influent NH3-N	mg/L	35	32	-8%
Aeration Basin				
Airflow	Mscfd	1.9	2.3	20%
AB Effluent DO	mg/L	0.5	0.1	-78%
Effluent				
Effluent NH3-N	mg/L	6.1	6.3	4%
Effluent NO3-N	mg/L	19	22	13%
Effluent NO2-N	mg/L	0.4	0.0	--
Effluent TP	Mg/L	3.1	3.4	10%

The model was validated by simulating the sampling month (July 2019) to verify the nitrification and denitrification performance for a larger period than the sampling week. The daily measured and modeled effluent NH₃-N and NO₃-N concentration are shown in Figure 2.

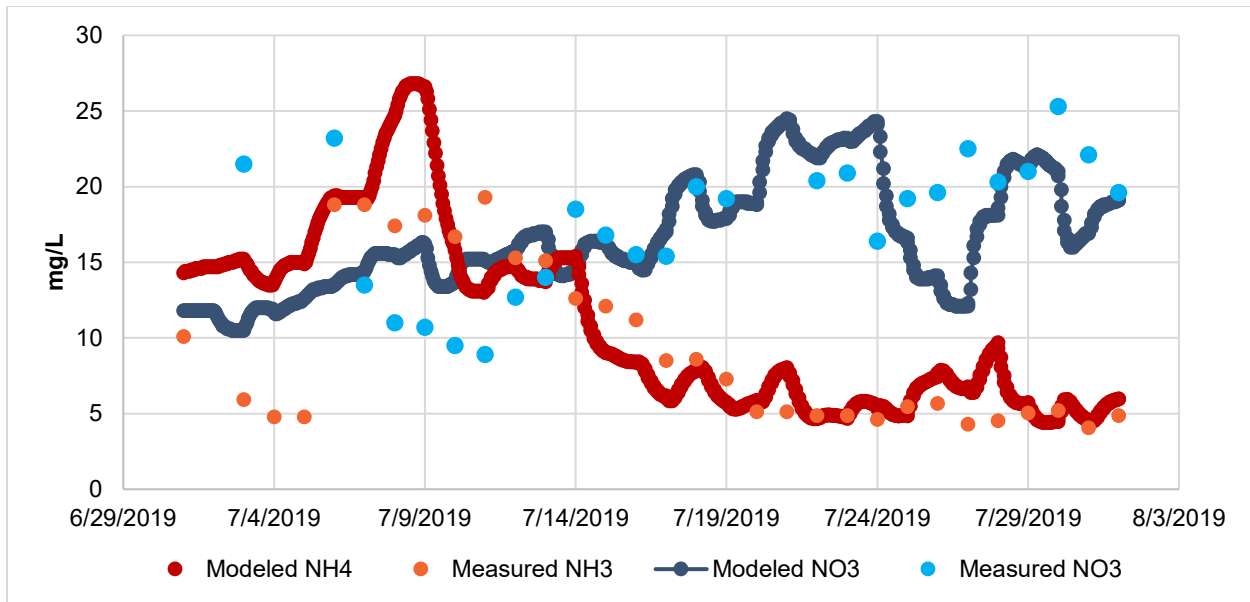


Figure 2. Model Validation – Daily Dynamic Effluent Ammonia and Nitrate Predictions for July 2019

In addition, a completely time period was selected to verify the calibration assumptions. Due to issues with RAS pumps, hauling and suspicious influent concentrations in late 2018 – 2019, a period in early 2018 (Jan-Mar) was selected. Effluent ammonia and nitrate data was not collected during this period of time, so only solids production and gas production could be verified. A summary of the steady state validation is presented in Table 2.

Table 2. Model Validation – Steady State Solids Production for Jan – Mar 2018

Parameter		Measured	Modeled	% Difference
Combined Influent				
Combined Influent BOD (XX)	mg/L	381	378	-1%
Combined Influent TSS (XX)	mg/L	390	376	-4%
Aeration Basin				
AB MLSS	mg/L	5,550	5,840	5%
RAS TSS	mg/L	13,000	13,000	0%
PS				
PS TSS Load	ppd	8,410	8,960	7%
WAS				
WAS TSS Load	ppd	4,600	4,570	-1%
Digester				
Gas Pad Biogas Produced	scfd	124,000	118,000	-5%
Dewatering				
Screw Press Feed TSS Load	ppd	4,950	6,140	24%

The influent sampler issues were not suspected to be occurring this period of time, therefore the measured influent BOD was used without adjustment. Applying the same calibration assumptions (influent fractions, operational data) results in a good match on overall solids production, although the dewatering operation was down for several weeks during this time period, so the screw press feed TSS load is not anticipated to match the modeled data.

4. Summary and Recommendations

Based on the available data, the GSD WRRP model is well calibrated and producing the following results.

- Accurately predicts the solids production (MLSS, Primary Sludge, WAS and Digested Sludge).
- Matches digester gas production well.
- Matches effluent nitrogen species well for the July 2019 period, though limited data was available to verify this aspect of the model.
- Effluent phosphorus predictions were not a focus of the calibration, but the modeled effluent phosphorus concentrations match reasonably well on a steady-state basis.

There is some uncertainty in the model predictions due to unreliable data, as described earlier. It is recommended that additional investigations be performed into the sampling bias suspected in the combined plant influent, primary effluent and biofilter effluent. Continuing to collect data on the effluent $\text{NH}_3\text{-N}$ and $\text{NO}_3\text{-N}$ will be helpful for verifying the treatment performance predictions of the model over a longer period of time. In addition, measuring biofilter effluent ammonia routinely is recommended to gather data on the nitrification occurring in the biofilters and therefore nitrogen loading to the aeration basins. Nitrification and denitrification predictions in the model are extremely sensitive to the DO concentration in the aeration basins, so gathering additional data on aeration basin loading and verifying the airflow vs. DO discrepancy will increase confidence in the model's nitrification and denitrification predictions.

The calibrated model will be used moving forward as a part of three additional projects:

- Biosolids and Energy Phase 1 Preliminary Design. The model will be used to estimate the capacity of the existing system, future biosolids generation, recommend sizing for a new digester and estimate future performance and gas production.
- Operations Tool. The calibrated model will be used as the basis for the development of an operations tool to allow staff to use the model through a more intuitive user interface.
- Greenhouse Gas Emission Baseline Inventory. The model will be used to predict the direct fugitive emissions from the processes based on current operation.

Appendix B: Plots of Historical Flows and Loads Data

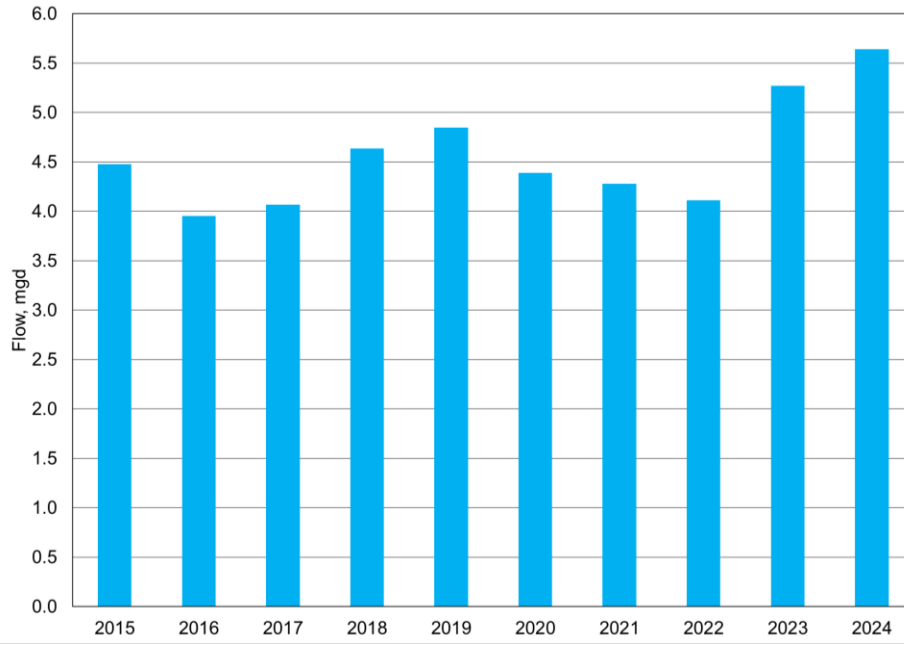


Figure 1: Influent Flow

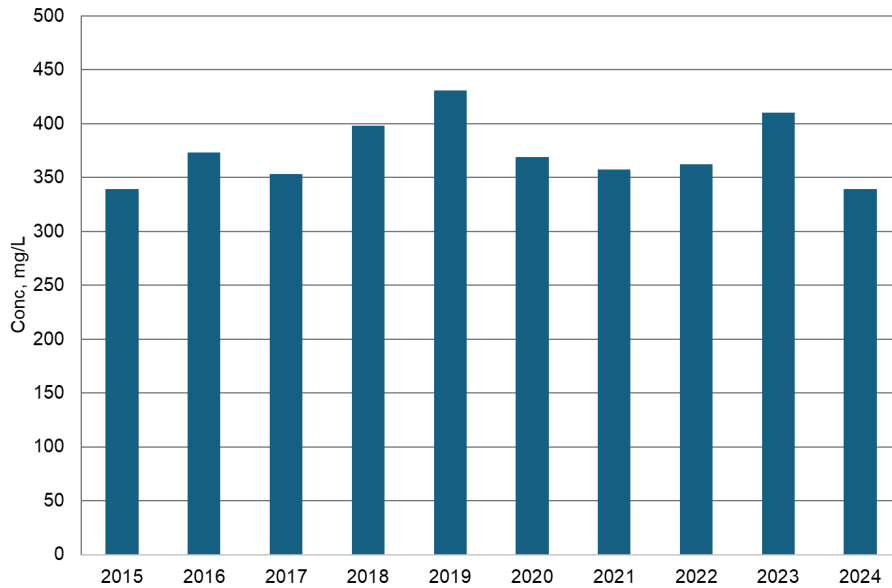


Figure 2: Influent BOD Concentrations

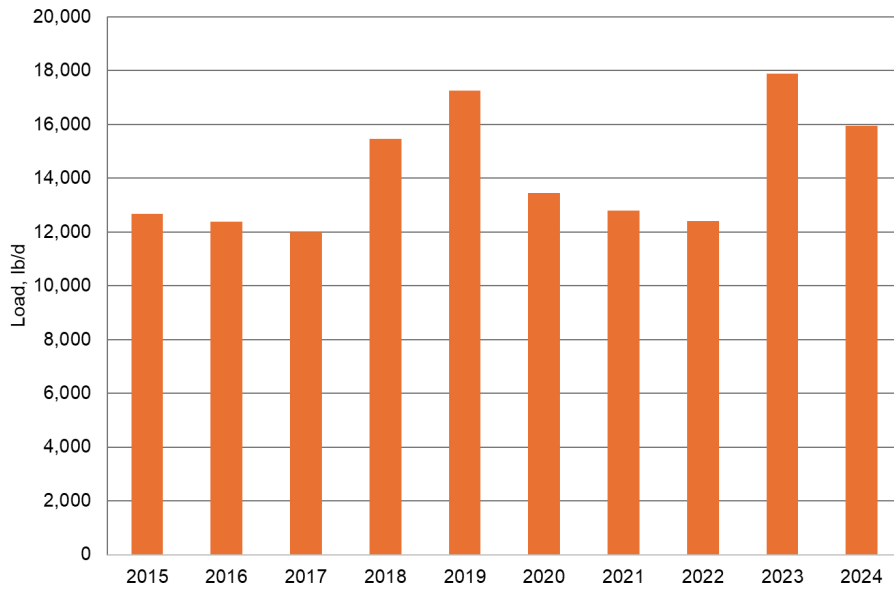


Figure 3: Influent BOD Loads

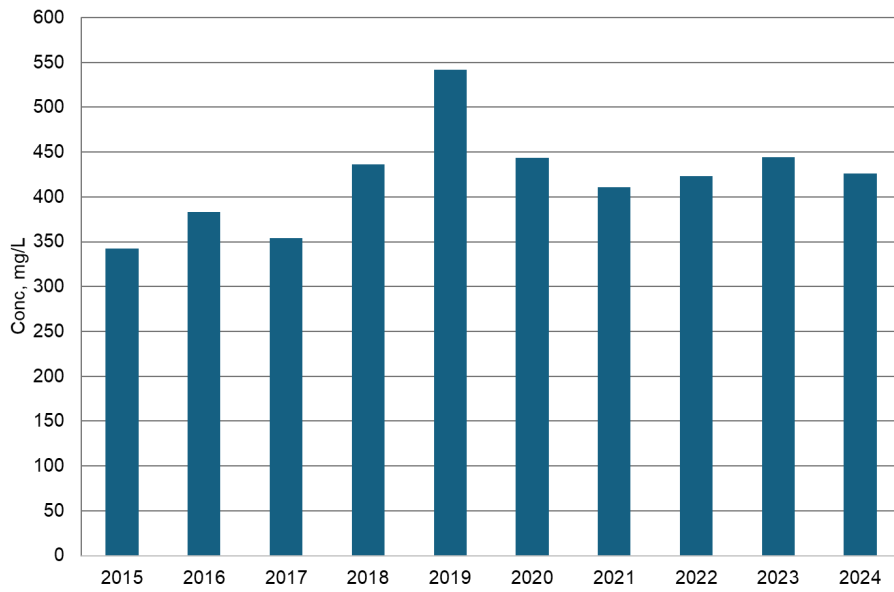


Figure 4: Influent TSS Concentrations

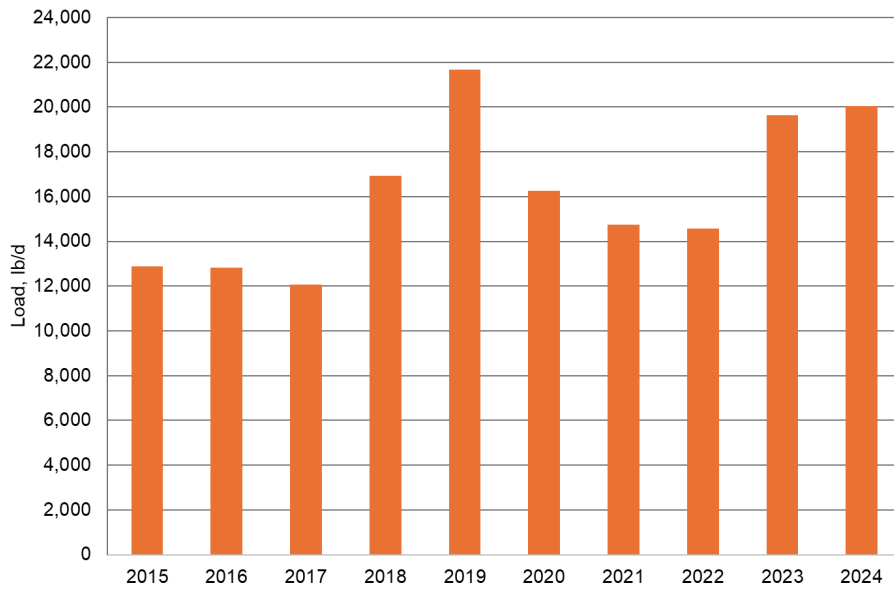


Figure 5: Influent TSS Loads

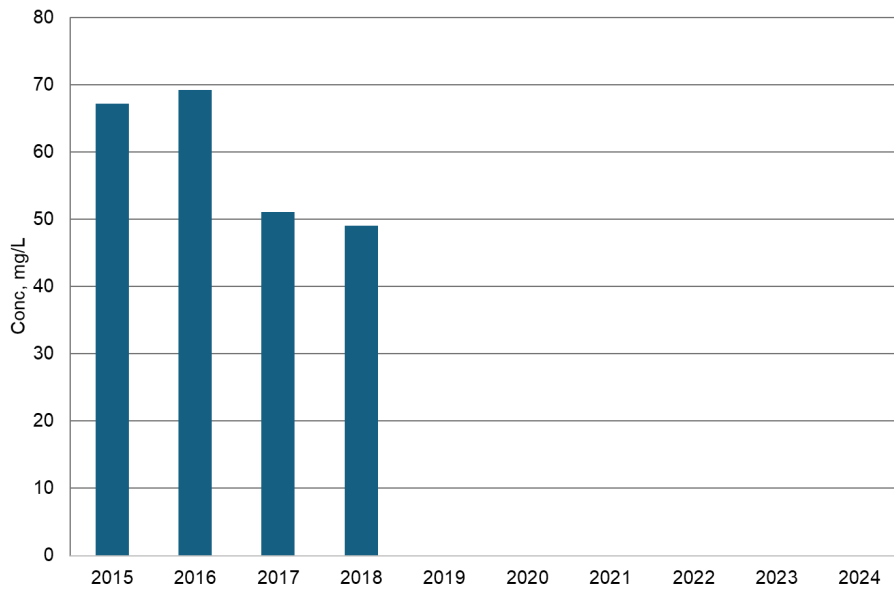


Figure 6: Influent Ammonia Concentrations

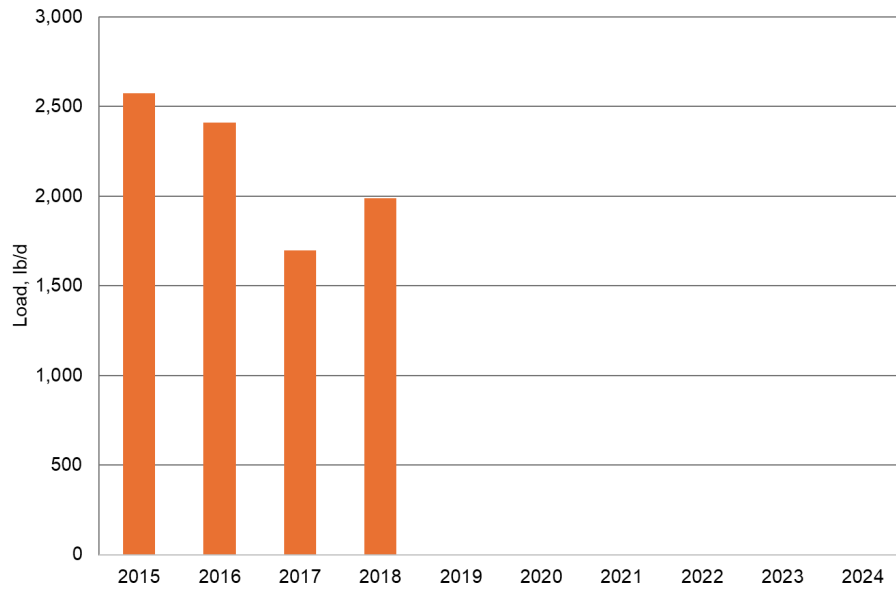


Figure 7: Influent Ammonia Loads

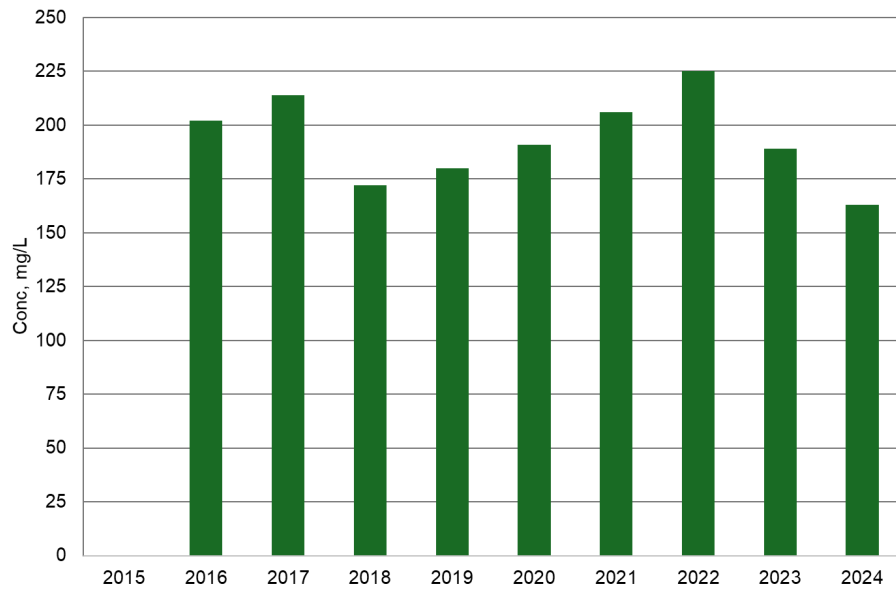


Figure 8: Primary Effluent BOD Concentrations

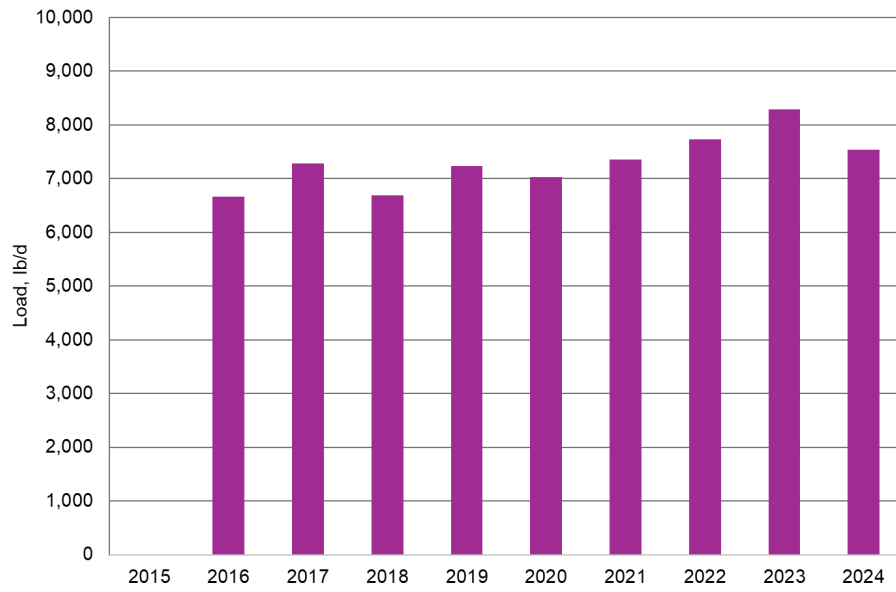


Figure 9: Primary Effluent BOD Loads

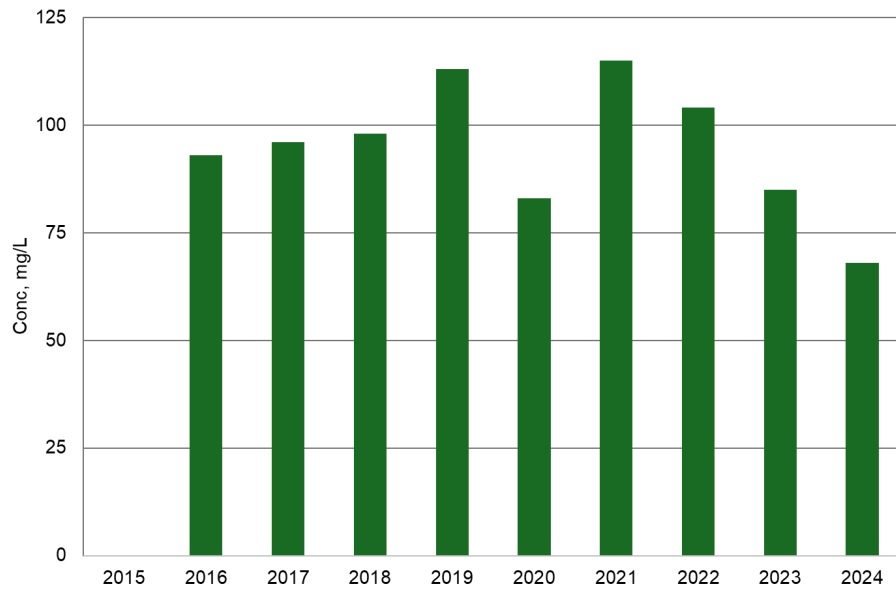


Figure 10: Primary Effluent TSS Concentrations



Figure 11: Primary Effluent TSS Loads

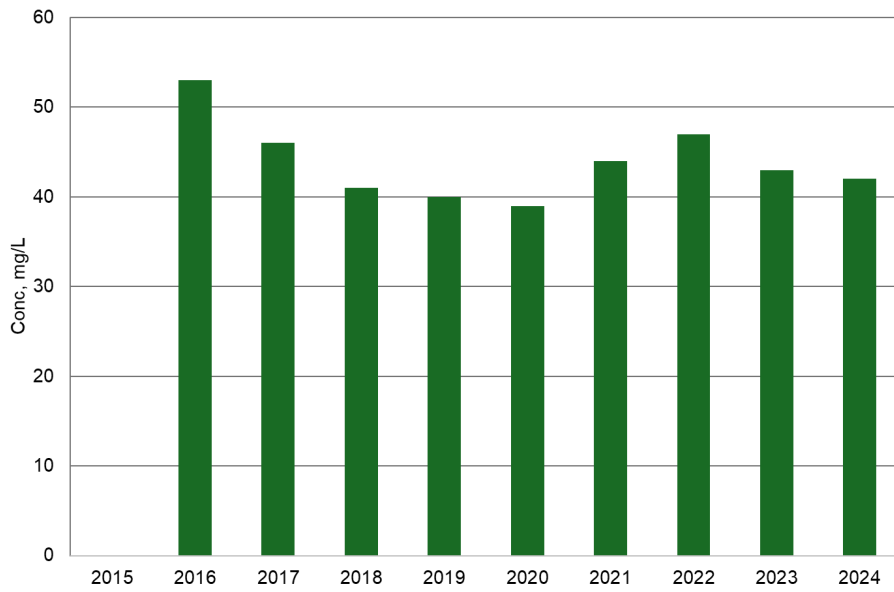


Figure 12: Primary Effluent Ammonia Concentrations

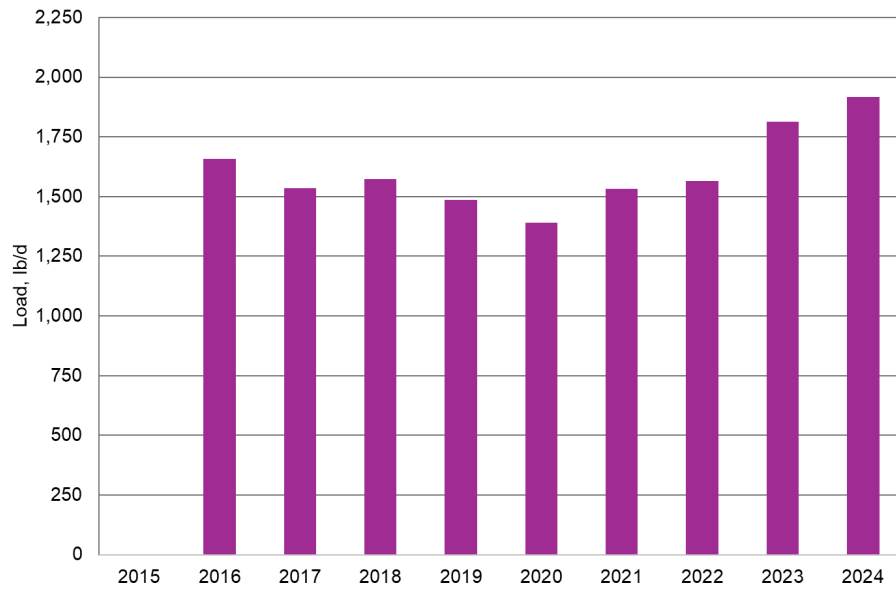


Figure 13: Primary Effluent Ammonia Loads

Appendix C: Nutrient Removal Fact Sheets

Hazen

Nutrient Management Study

Nutrient Removal Technology Fact Sheets

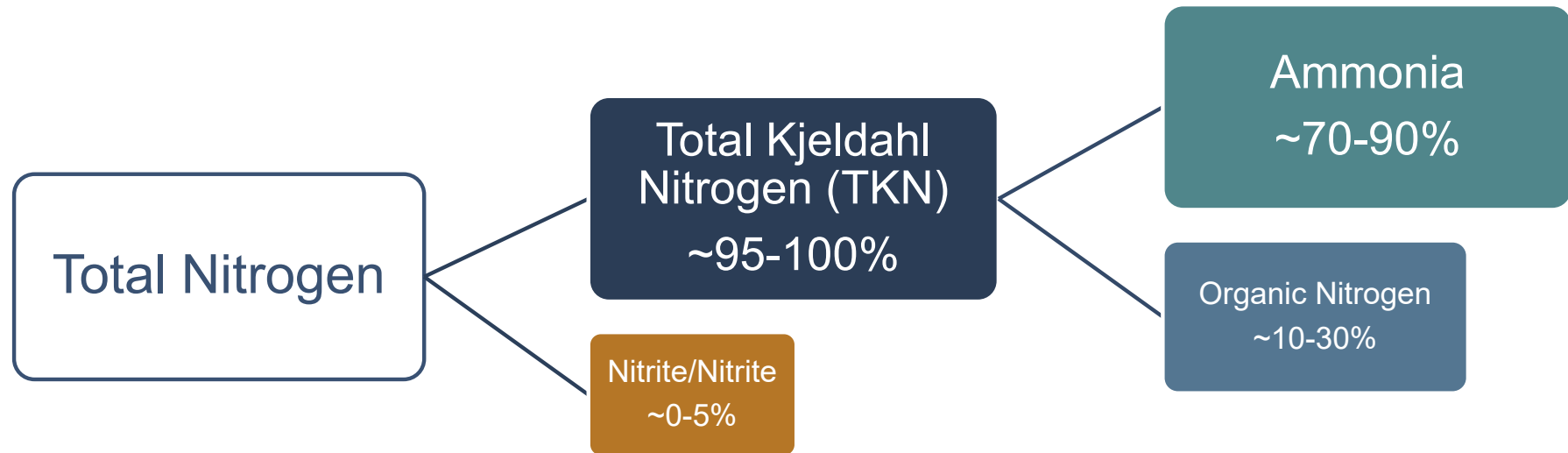


GOLETA SANITARY
Water Resource Recovery District

Protecting Public Health and the Environment

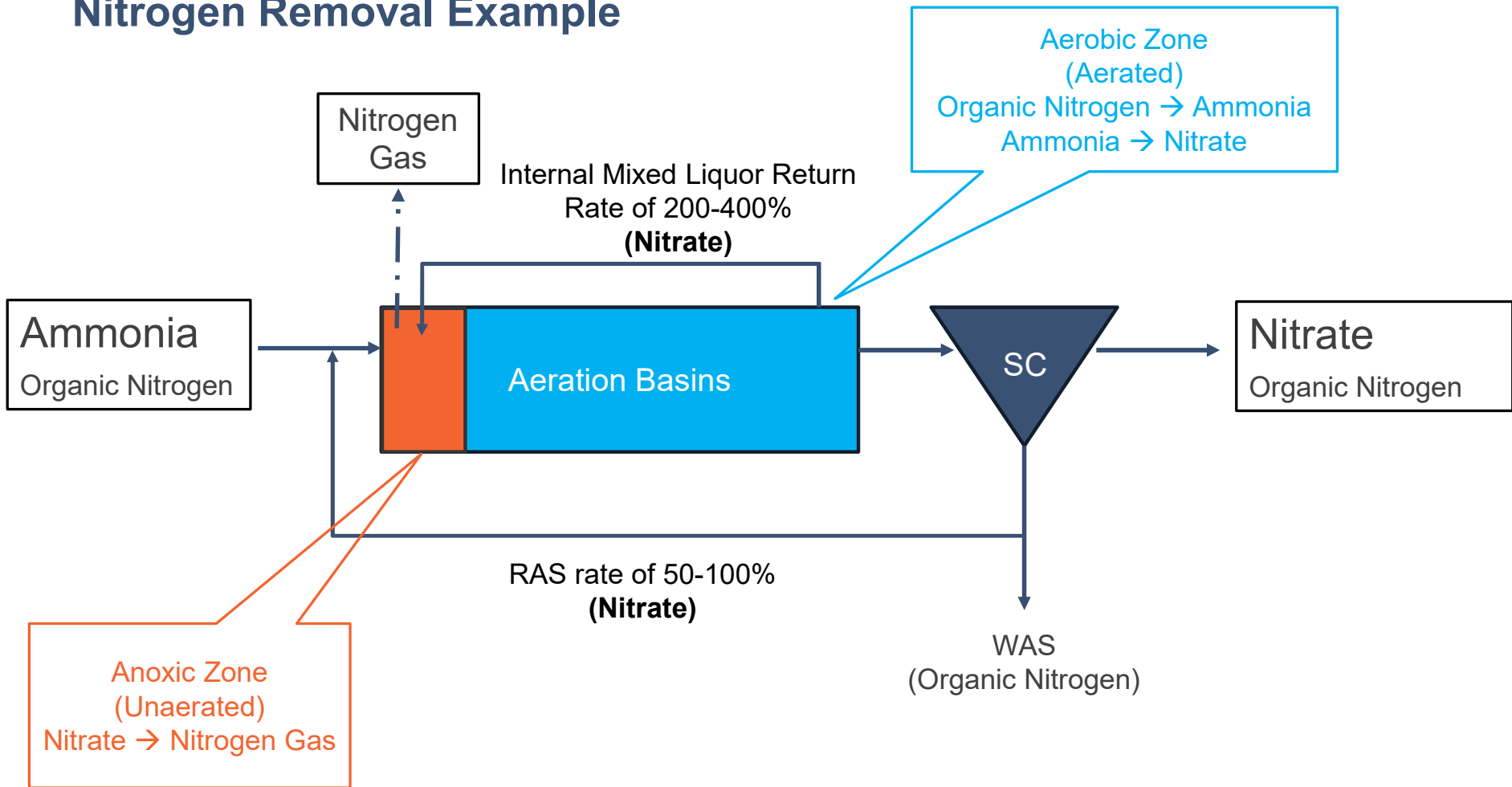
Nutrient Removal Background

Influent Nitrogen Composition

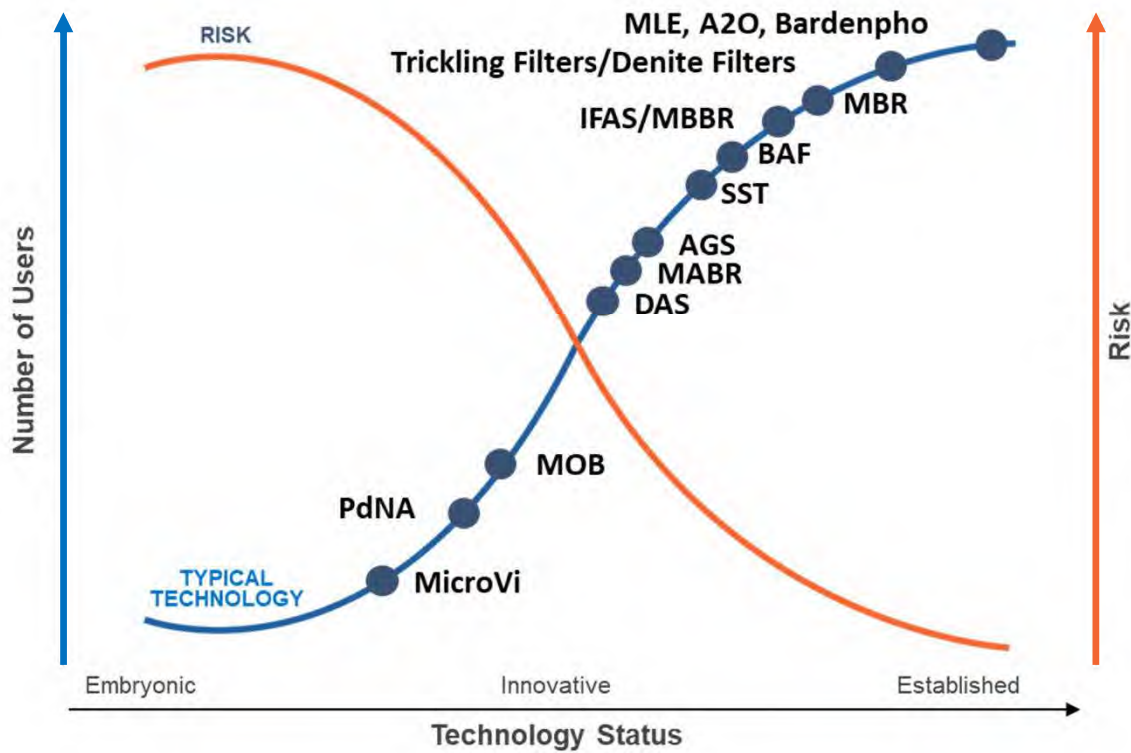


Process	Description	Microorganisms	Considerations
Nitrification			
Nitritation	$NH_3 \rightarrow NO_2^-$ Ammonia to nitrite	Autotrophs Ammonia oxidizing bacteria (AOBs)	DO, pH, Alkalinity, Temperature, SRT
Nitratation	$NO_2^- \rightarrow NO_3^-$ Nitrite to nitrate	Autotrophs Nitrite oxidizing bacteria (NOBs)	
Denitrification			
Denitratation	$NO_3^- \rightarrow NO_2^-$ Nitrate to nitrite	Heterotrophs	Absence of DO, Carbon source
Denitritation	$NO_2^- \rightarrow N_2$ Nitrite to nitrogen gas	Heterotrophs	
Anaerobic Ammonia Oxidation (Anammox)			
$NH_3 \rightarrow NO_2^-$ $NH_3 + NO_2^- \rightarrow N_2$	Convert some ammonia to nitrite (nitritation), followed by anammox reaction (ammonia to nitrogen gas)	Autotrophs (AOBs and Anammox)	DO, pH, Alkalinity, Temperature, SRT
Ammonification			
<i>Organic Nitrogen</i> $\rightarrow NH_3$	Organic nitrogen to ammonia	Heterotrophs	
Cellular Uptake			
$NH_3 \rightarrow \text{Cellular Matter}$	Ammonia to cellular matter	All	
Partial Nitrification-Denitratation-Anammox (PdNA / PANDA)			
$NH_3 \rightarrow NO_2^- \rightarrow NO_3^-$ $NO_3^- \rightarrow NO_2^-$ $NH_3 + NO_2^- \rightarrow N_2$	Partial nitrification (ammonia to nitrate) Partial denitrification (nitrate to nitrite) Anammox (nitrite and ammonia to nitrogen gas)	Autotrophs (AOBs, NOBs, Anammox) Heterotrophs	DO, pH, Alkalinity, Temperature, SRT, Carbon addition

Nitrogen Removal Example



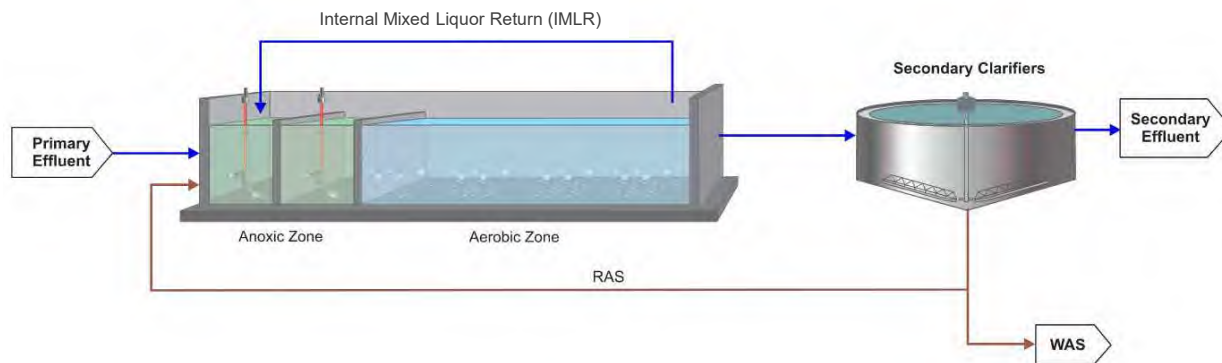
World of Options for Nutrient Removal



Mainstream Nutrient Removal Options

Nitrogen Removal Performed in the Main Secondary Treatment Process

Modified Ludzack-Ettinger (MLE)



- Conventional BNR approach for nitrogen removal
- Supplemental carbon can be added to anoxic zone to improve nitrogen removal performance (if carbon limited)



Technology Description

- Nitrogen removal process



Technology Maturity

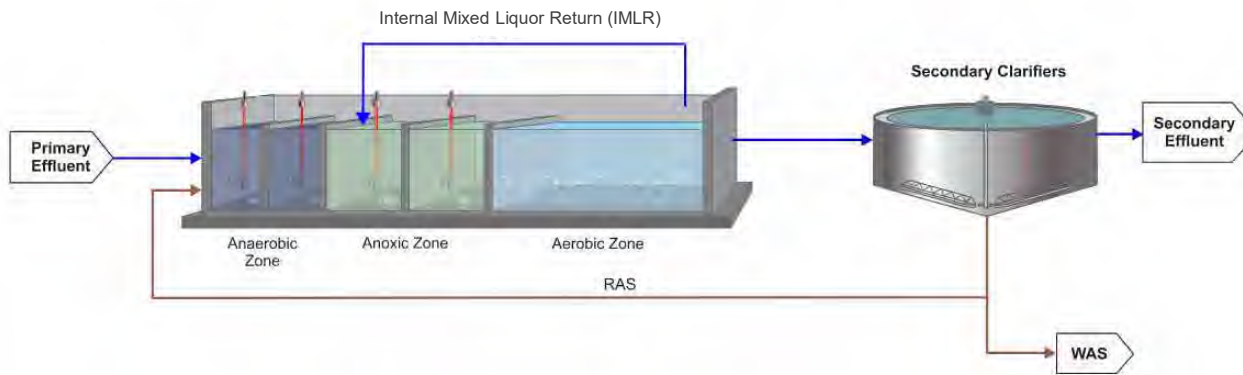
- Mature



Operational Considerations

- IMLR typically operated at return rate of 200-400%
- Complete denitrification not possible; limit to nitrogen removal that can be achieved

Anaerobic, Anoxic, Aerobic (A2O)



- Conventional BNR approach for nitrogen and phosphorus removal

Technology Description

- Nitrogen and phosphorus removal
- Phosphorus accumulating organisms (PAOs) selected for in anaerobic zone to provide phosphorus removal

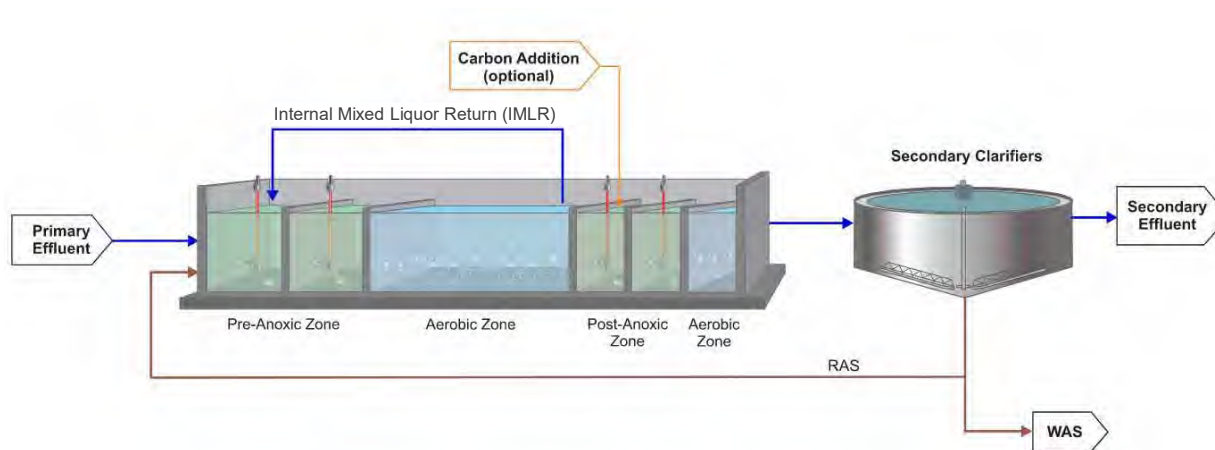
Technology Maturity

- Mature

Operational Considerations

- IMLR typically operated at return rate of 200-400%
- Promotes biological phosphorus removal (increased struvite formation potential)
- Anaerobic selector can improve sludge settleability

Four-Stage BNR



- Conventional BNR approach to achieve low nitrogen levels
- Supplemental carbon can be added to post-anoxic zone to improve nitrogen removal performance



Technology Description

- Nitrogen removal process
- Post-anoxic zone added for additional denitrification



Technology Maturity

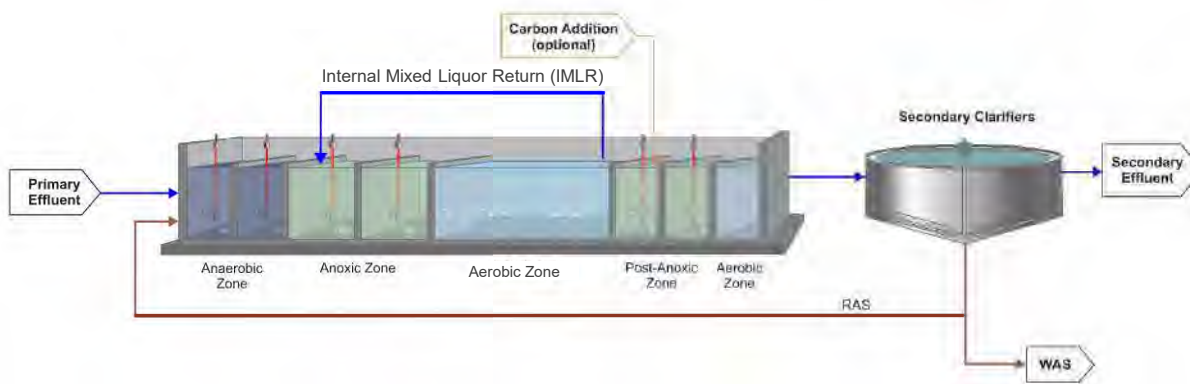
- Mature




Operational Considerations

- IMLR typically operated at return rate of 200-400%
- Additional nitrogen removal can be achieved compared to MLE
- Small aerobic zone added after post-anoxic zone to re-aerate and strip N_2 prior to secondary clarifiers.

Five-Stage BNR

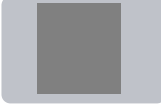


- Conventional BNR approach to achieve low nitrogen levels and phosphorus removal
- Supplemental carbon can be added to post-anoxic zone to improve nitrogen removal performance




Technology Description

- Nitrogen and phosphorus removal process
- Post-anoxic zone added for additional denitrification
- Phosphorus accumulating organisms (PAOs) selected for in anaerobic zone to provide phosphorus removal



Technology Maturity

- Mature



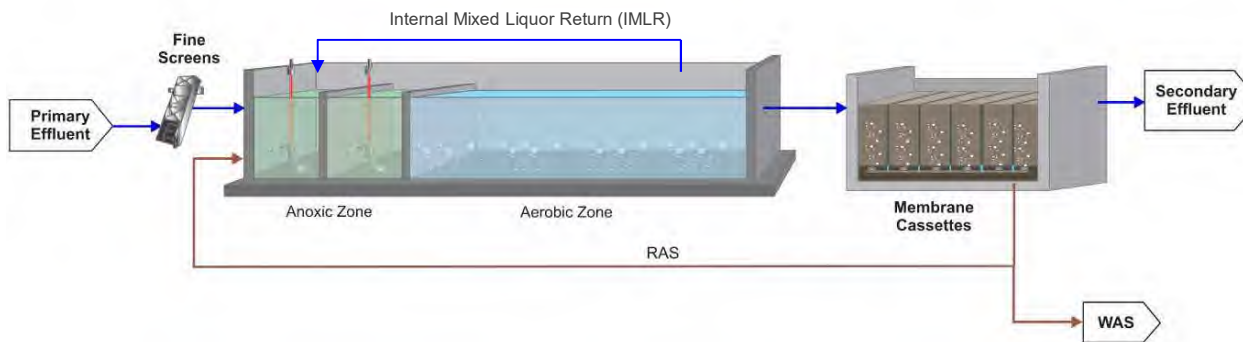
Operational Considerations

- IMLR typically operated at return rate of 200-400%
- Additional nitrogen removal can be achieved compared to MLE
- Small aerobic zone added after post-anoxic zone to re-aerate and strip N_2 prior to secondary clarifiers.
- Promotes biological phosphorus removal (increased struvite formation potential)
- Anaerobic selector can improve sludge settleability

Membrane Bioreactor (MBR)



Membrane cassette (Veolia)



- Intensified BNR process
- Implemented to maximize capacity in a smaller footprint compared to conventional BNR technologies
- Membrane provide physical separation of solids (eliminates the need for secondary clarifiers)
- Higher quality effluent (solids) compared to clarification processes



Technology Description

- Activated sludge process followed by membranes for solids separation
- Can be configured as MLE, A2O, Four-Stage BNR, Five-Stage BNR



Technology Maturity

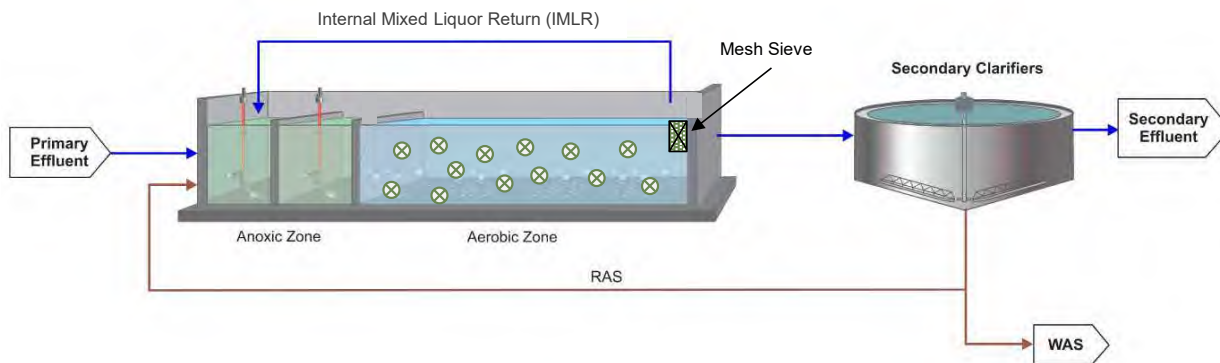
- Mature



Operational Considerations

- RAS return rate around 400%
- Higher MLSS concentrations in the activated sludge tanks (6,000-8,000 mg/L)
- Higher O&M costs (energy and chemicals)
- Fine screening required to protect membranes (~2 mm)

Integrated Fixed Film Activated Sludge (IFAS)



Plastic carrier media

- Intensification process for nitrogen removal
- Can be added to activated sludge system to increase capacity within existing infrastructure or construct new tankage with smaller footprint



Technology Description

- Media used to sustain growth of biofilm for biological treatment



Technology Maturity

- Mature

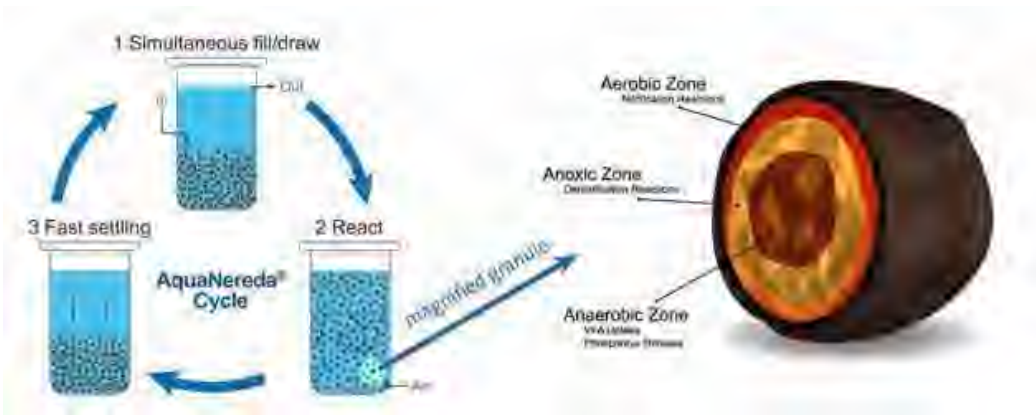


Operational Considerations

- Mesh sieve commonly used to retain media within system
- Mixing or aeration system required to ensure uniform distribution
- Potential to operate at a lower aerobic SRT

Aerobic Granular Sludge

Conventional floc vs AGS granules



- Intensified BNR process
- Proprietary process (AquaNereda®)
- Smaller footprint compared to conventional BNR processes

Technology Description

- Sequencing batch reactor (SBR) process
- Promotes growth of granular mass that sustains aerobic, anoxic, and anaerobic biological processes simultaneously
- Can provide both nitrogen and phosphorus removal

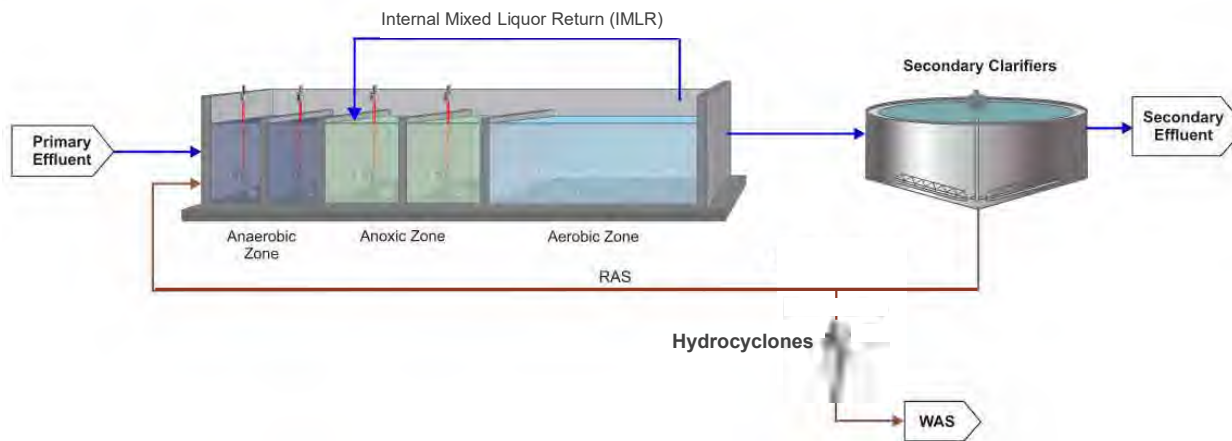
Technology Maturity

- Mature
- Limited installations in the US (majority of installation are outside of US)

Operational Considerations

- Proprietary technology
- SBR process different from flow-through activated sludge process
- Granular mass results in low SVIs and increased settling performance

Densified Activated Sludge (DAS)



- Intensified BNR process for nitrogen and phosphorus removal
- Can be implemented within activated sludge system to increase capacity within existing infrastructure
- Biological and physical selection of dense flocs/granules improves settling characteristics and allows for higher mixed liquor concentrations (increased capacity or smaller footprint)

Hydrocyclone skid
(World Water Works)



Technology Description

- Intensification process for nitrogen and phosphorus removal
- Hydrocyclones (proprietary technology) recommended on the WAS for physical selection

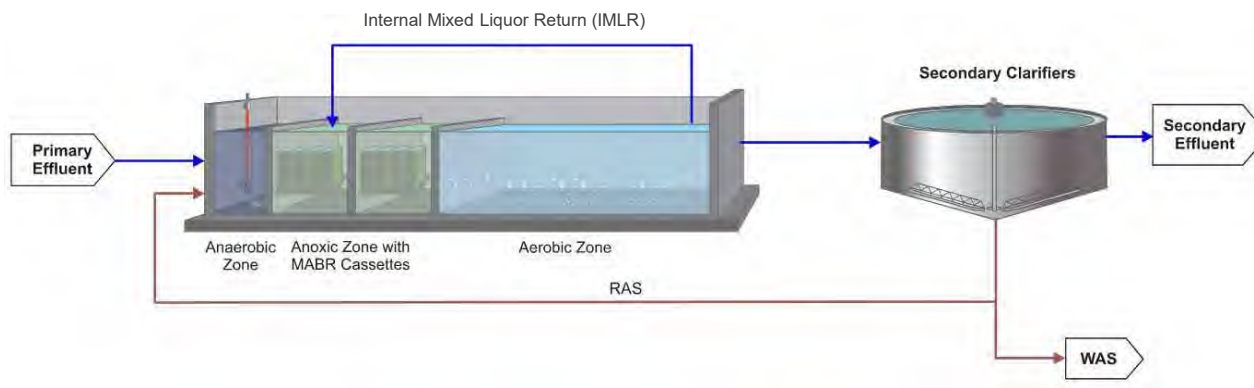
Technology Maturity

- Innovative

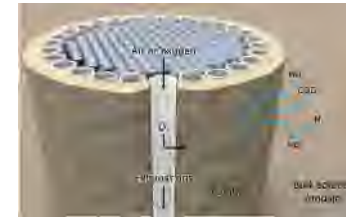
Operational Considerations

- IMLR typically operated at return rate of 200-400%
- Promotes biological phosphorus removal (increased struvite formation potential)

Membrane-Aerated Bioreactor (MABR)



- Intensified BNR process
- Can be retrofit within activated sludge system (addition of cassettes) to increase capacity within existing infrastructure or construct new tankage with a smaller footprint



*Biofilm on Veolia MABR chords (top)
Veolia MABR cassette installation (right)*

Technology Description



- MABR cassettes allow nitrifying biomass to grow in the anoxic zones
- Gas transfer membrane delivers oxygen directly to the biofilm for nitrification
- Denitrification occurs in the bulk suspension of the anoxic zones

Technology Maturity



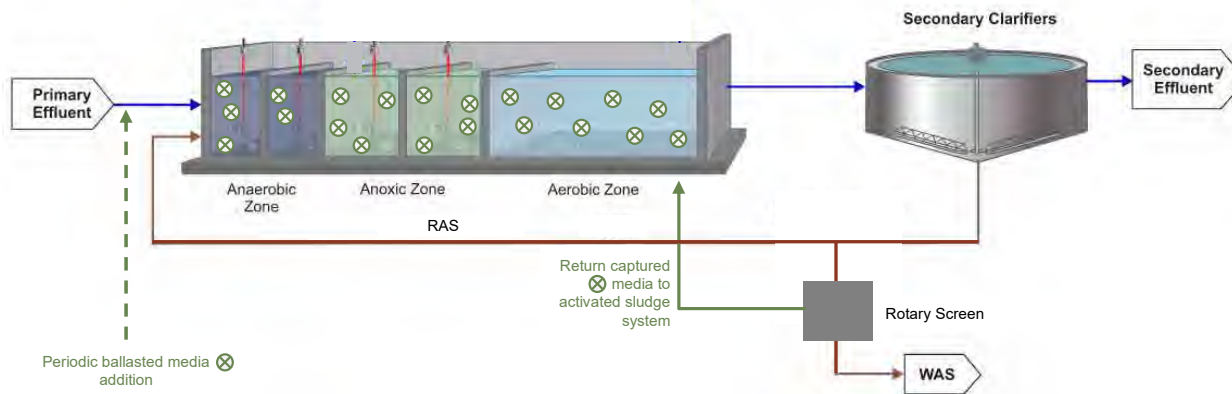
- Innovative

Operational Considerations



- Nitrifying biofilm process allows for a reduction in aerobic SRT
- Oxygen transfer to biofilm is more efficient than fine-bubble diffusers which typically results in aeration energy savings

Mobile Organic Biofilm (MOB™)



- Intensified BNR process (hybrid of granular sludge and fixed biofilm processes)
- Proprietary technology (Nuvoda)
- Can be added to activated sludge system to maximize capacity within existing infrastructure



Nuvoda organic media and biofilm illustration



Technology Description

- Employs both suspended biomass and biofilm grown on organic media
- Ballasted media added to aeration tanks to promote granulation and intensification

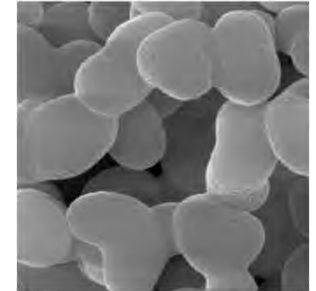
Technology Maturity

- Emerging

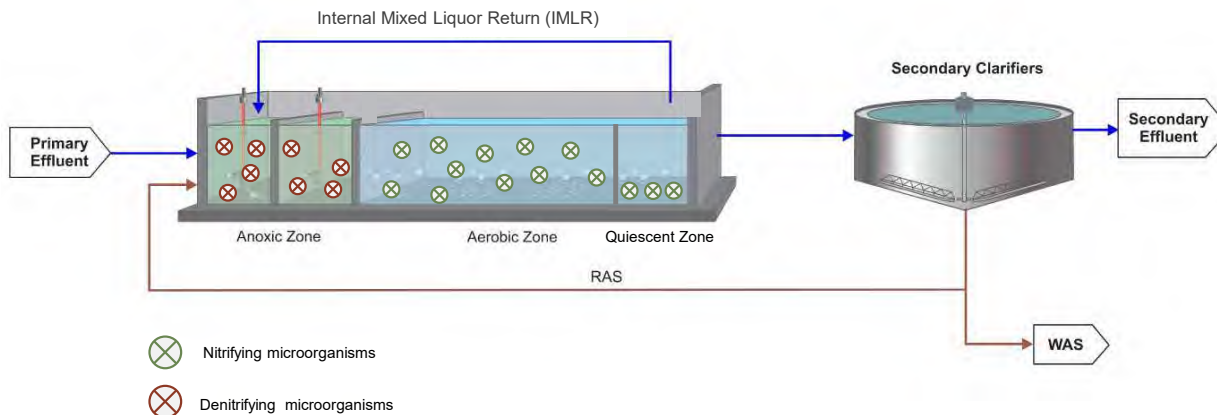
Operational Considerations

- Proprietary technology
- Screening on WAS line to maintain media in closed loop system
- Some media loss (routine replacement required)

Microvi™



Example of a biocatalyst composite (Microvi)



- Intensified BNR process
- Proprietary Microvi MNE™ technology provides a “microniche” for specific microorganisms that perform nitrogen removal
- Can be added to activated sludge system to maximize capacity within existing infrastructure



Technology Description

- Employs single-species microorganisms in specially designed biocatalyst composite to perform nitrification and denitrification



Technology Maturity

- Emerging



Operational Considerations

- Process relies on providing highly specific microorganisms which may impact long-term cost effectiveness and scalability of technology

Post-Secondary Nutrient Removal Options

Nitrogen Removal Achieved Downstream of the Main Secondary Treatment System

Nitrifying Trickling Filters (Must be Followed by Denitrification Step)



Biofilters at GSD (BOD removal)



Nitrifying trickling filters at Truckee Meadows Water Reclamation Facility

- Trickling filters designed to perform for nitrification.
- Typically located after carbon removal process to optimize nitrification.
 - Need to manage organic loading to promote growth of nitrifiers.
 - Filter media for nitrification typically has higher surface area compared to BOD removal.



Technology Description

- Nitrifiers grown on biomass within trickling filters for nitrification.
- Must be followed by downstream denitrification step for nitrogen removal



Technology Maturity

- Mature



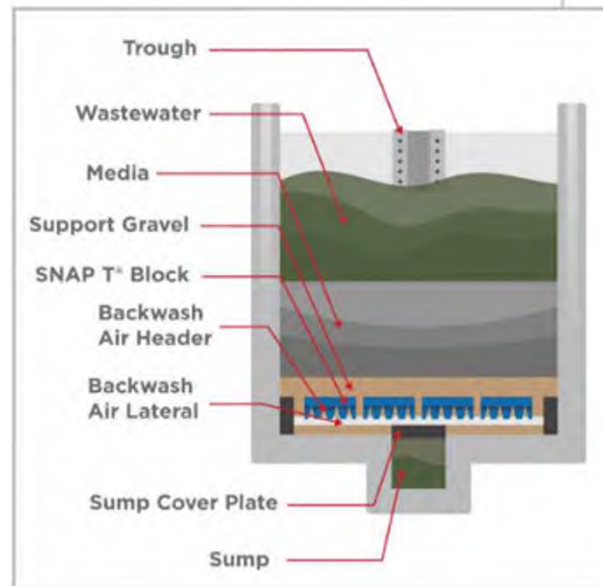
Operational Considerations

- More limited flexibility and control compared to activated sludge process.
- Risk of predation for nitrifier population (mitigation strategies required)

Denitrification Filter



Example from De Nora



- Biological filter (typically sand) that achieves denitrification of fully nitrified secondary effluent.
- Can achieve low nitrogen levels but requires constant external carbon addition (e.g., methanol).
- Best used as a polishing step rather than main nitrogen removal pathway.



Technology Description

- Provides biological treatment and physical filtration for removal of nutrients and organics
- Receives nitrified effluent



Technology Maturity

- Mature



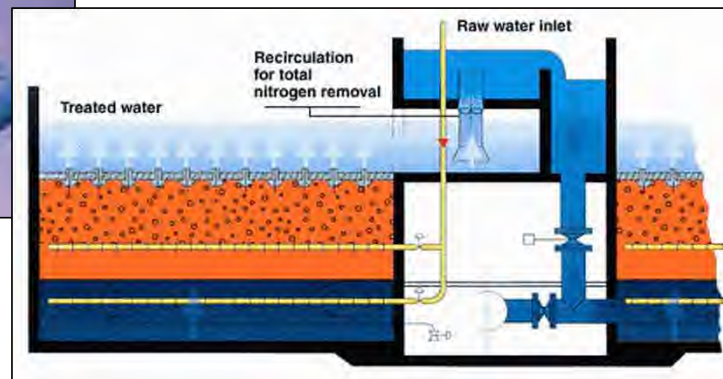
Operational Considerations

- Can be designed in downflow or upflow configurations.
- Require constant carbon addition

Biologically Active Filter (BAF)



Example from Biostyr



- Post-secondary process for nitrogen removal
- Provides biological treatment and solids separation
- Can meet low nitrogen limits with carbon addition



Technology Description

- Provides biological treatment and solids separation
- Can be configured for nitrification or denitrification



Technology Maturity

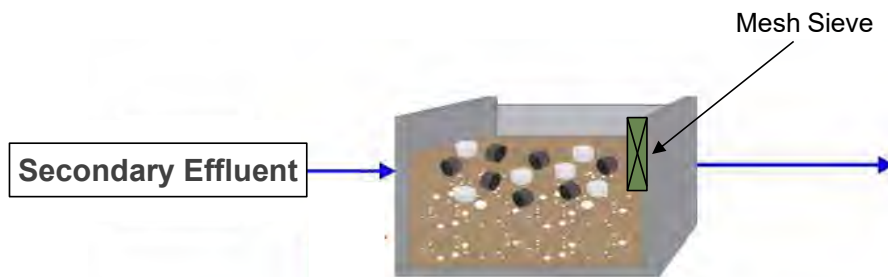
- Mature



Operational Considerations

- Can be configured in a number of ways to perform different biological treatment
- Denitrification requires constant carbon addition

Moving Bed Biofilm Reactor (MBBR)



Plastic carrier media

- Post-secondary process for nitrogen removal process
- Microorganisms for nitrification or denitrification grow



Technology Description

- Media used to sustain growth of biofilm for biological treatment
- Can perform nitrification and denitrification (separate tanks)



Technology Maturity

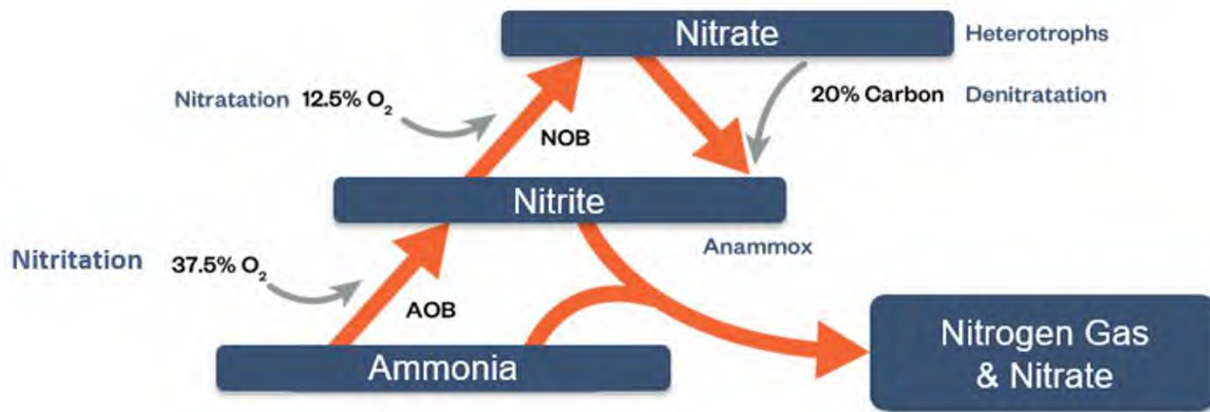
- Mature




Operational Considerations

- Mesh sieve commonly used to retain media within system
- Mixing and/or aeration system required to ensure uniform distribution

Partial Nitrification-Denitrification-Anammox (PANDA / PdNA)



- BNR process that utilizes partial nitrification and partial denitrification paired with anammox bacteria to remove nitrogen
- Potential to reduce aeration demand and chemical costs to achieve low nitrogen levels compared to conventional nitrification-denitrification pathway




Technology Description

- Partial nitrification
- Partial denitrification
- Utilize anammox microorganisms to perform “short-cut” nitrogen removal with remaining ammonia and nitrite



Technology Maturity

- Emerging



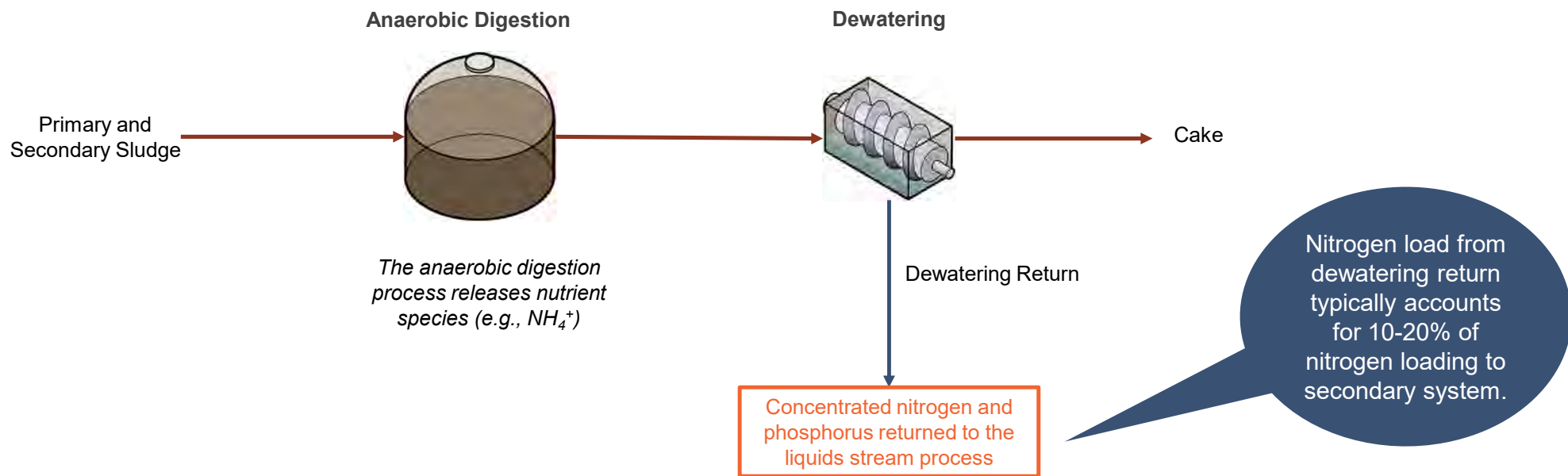
Operational Considerations

- Potential energy savings due to reduced nitrification requirement
- Chemical savings on external carbon with anammox process

Sidestream Treatment

Treatment of the Ammonia-Rich Dewatering Return Stream (Nitrogen Released during Anaerobic Digestion Process) to Mitigate Nutrient Removal Requirements in the Mainstream Secondary Process

Impact of Solids Processing Return Streams on Nitrogen Removal



- Sidestream treatment provides an opportunity to reduce nutrient loading and/or augment the nitrogen removal process in the main secondary treatment process.

AGENDA ITEM #3
(Closed Session)

GENERAL MANAGER'S REPORT

GOLETA SANITARY DISTRICT GENERAL MANAGER'S REPORT

The following summary report describes the District's activities from May 5, 2026, through May 18, 2026. It provides updated information on significant activities under three major categories: Collection System, Treatment/Reclamation and Disposal Facilities, and General and Administration Items.

1. COLLECTION SYSTEM REPORT

LINES CLEANING

Staff has been conducting routine lines cleaning in various locations throughout the District to complete open work orders, and in the area of Foothill and La Vista Roads. Staff has also been conducting priority lines cleaning throughout the District.

CCTV INSPECTION

Staff has been conducting routine CCTV inspections in the area of North Fairview Avenue and Cuesta Verde. Staff has also been conducting priority CCTV inspections throughout the District.

GREASE AND OIL INSPECTIONS

Staff continues with annual Grease and Oil inspections at food service establishments within the District.

PROFESSIONAL DEVELOPMENT

Three staff members attended the California Water Environment Association's Collection Systems Fundamentals workshop in Thousand Oaks on Wednesday, May 13, 2026.

2. TREATMENT, RECLAMATION AND DISPOSAL FACILITIES REPORT

The Plant flow for the month of May 2026 averaged 5.12 MGD (million gallons per day). The Reclamation Plant is online, producing 1.5 MGD of reclaimed water.

Construction on the BESP Phase 1 project continues with civil and site work and termination of the power and control wires for the 24-inch Primary Effluent line to Biofilter #1. Gateway has been installing the handrail on Digester #4. The digester has been filled with water in preparation for seeding. The Digester 4 PLC Cabinet is being installed and wired.

The Reclamation Plant was put back online on April 24, 2026. The cleaning was successful and the new gate shaft was installed for the north drain gate. The cleaning and maintenance were finished in Grit Chamber #3 and #4, and it was put online. Grit Chamber #1 and #2 was taken offline for cleaning and maintenance.

3. GENERAL AND ADMINISTRATIVE ITEMS

Financial Report

The District account balances as of May 18, 2026, shown below, are approximations to the nearest dollar and indicate the overall funds available to the District at this time.

Operating Checking Accounts:	\$ 436,192
Investment Accounts (including interest earned):	<u>\$ 48,091,511</u>
Total District Funds:	\$ 48,527,703

The following transactions are reported herein for the period 05/05/2026 – 05/18/2026

Regular, Overtime, Cash-outs, and Net Payroll:	\$ 180,987
Claims:	\$ 721,089
Total Expenditures:	\$ 902,077
Total Deposits:	\$ 116,578

Transfers of funds:

LAIF to Community West Bank Operational (CWB):	\$ - 0 -
CWB Operational to CWB Money Market:	\$ - 0 -
CWB Money Market to CWB Operational:	\$ - 0 -
CWB Operational to CA-Class Investment Account	\$ - 0 -
CA-Class Investment Account to CWB Operational	\$ - 0 -

The District's investments comply with the District's Investment Policy adopted per Resolution No. 16-606. The District has adequate funds to meet the next six months of normal operating expenses.

Local Agency Investment Fund (LAIF)

- LAIF Monthly Statement – Previously reported
- LAIF Quarterly Report – Previously reported
- PMIA/LAIF Performance – April, 2026
- PMIA Effective Yield – April, 2026

Community West Bank (CWB)

CWB Money Market and ICS Accounts – Previously reported

CA-Class Investment Account

CA-Class Investment Account – April, 2026

Deferred Compensation Accounts

- CalPERS 457 Deferred Compensation Plan – Previously reported
- Lincoln 457 Deferred Compensation Plan – Previously reported

Personnel

A verbal personnel update will be provided at the meeting.

Future Agenda Items

- Energy Storage Project – GC 4217 Public Hearing and Selection of Construction/Installation Contractor
- Consideration of ordinances for revised Connection and Annexation Fees Pursuant to Raftelis Rate and Fee Study
- Review of updates to Lincoln 457 deferred Compensation Program and website
- Review of Draft FY27 Budget

- Summary of recommended changes to the Admin Code and Human Resources Policy Manual

Upcoming Calendar of Events:

- Public Works Week Thursday, May 20, 2026 Calle Real Marketplace, Goleta
- CASA Annual Conference August 4-7, 2026 Napa
- CSDA Annual Conference August 24-27, 2026 Palm Desert
- Lemon Festival Outreach Event- September 26-27, 2026



PMIA/LAIF Performance Report as of 05/06/26



Quarterly Performance Quarter Ended 03/31/26

LAIF Apportionment Rate ⁽²⁾ :	3.98
LAIF Earnings Ratio ⁽²⁾ :	0.00010906180047888
LAIF Administrative Cost ^{(1)*} :	0.24
LAIF Fair Value Factor ⁽¹⁾ :	0.999980831
PMIA Daily ⁽¹⁾ :	3.82
PMIA Quarter to Date ⁽¹⁾ :	3.92
PMIA Average Life ⁽¹⁾ :	261

PMIA Average Monthly Effective Yields⁽¹⁾

April	3.811
March	3.826
February	3.871
January	3.931
December	4.025
November	4.096

Pooled Money Investment Account Monthly Portfolio Composition ⁽¹⁾ 03/31/26 \$165.3 billion

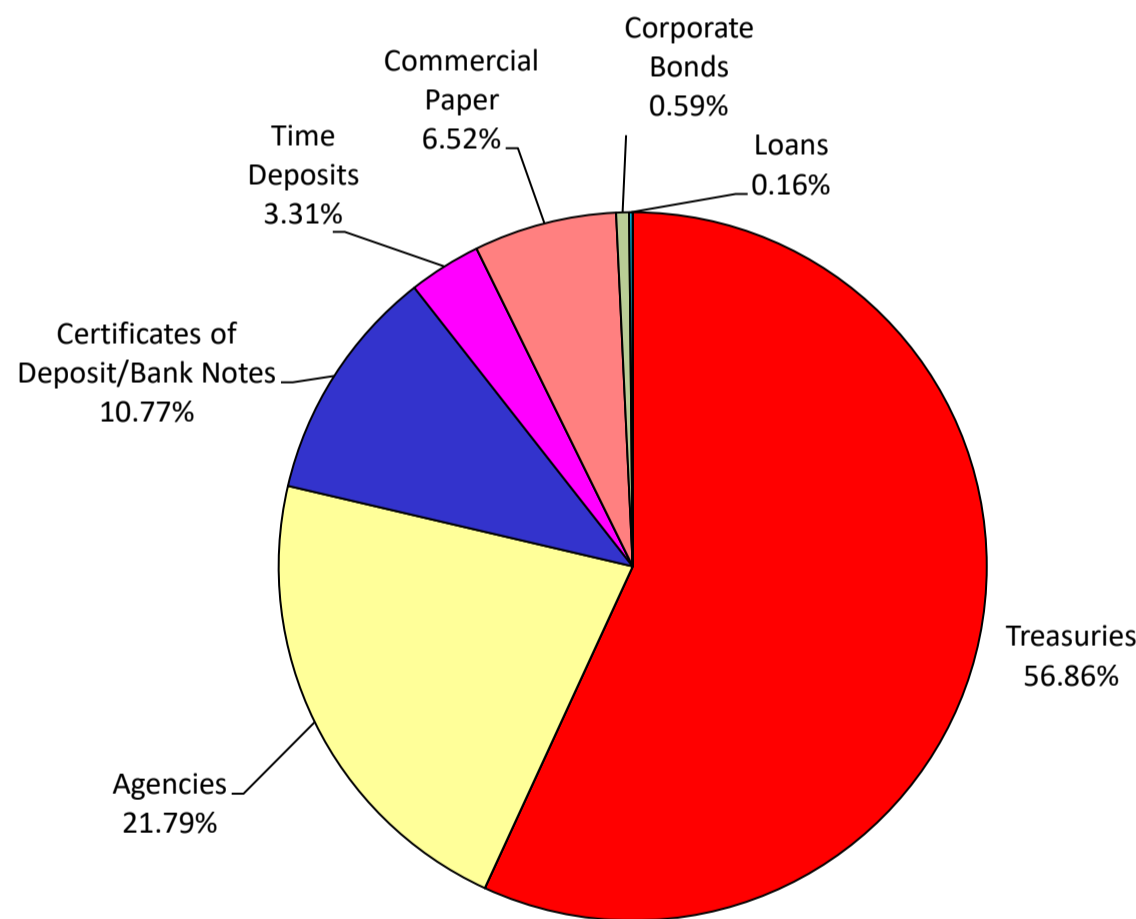


Chart does not include \$829,000.00 in mortgages, which equates to 0.001%. Percentages may not total 100% due to rounding.

Daily rates are now available here. [View PMIA Daily Rates](#)

Notes: The apportionment rate includes interest earned on the CalPERS Supplemental Pension Payment pursuant to Government Code 20825 (c)(1).

*The percentage of administrative cost equals the total administrative cost divided by the quarterly interest earnings. The law provides that administrative costs are not to exceed 5% of quarterly EARNINGS of the fund. However, if the 13-week Daily Treasury Bill Rate on the last day of the fiscal year is below 1%, then administrative costs shall not exceed 8% of quarterly EARNINGS of the fund for the subsequent fiscal year.

Source:

⁽¹⁾ State of California, Office of the Treasurer

⁽²⁾ State of California, Office of the Controller



POOLED MONEY INVESTMENT ACCOUNT

05/14/26

Max: 12.844

Min: 0.203

PMIA Average Monthly Effective Yields

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	8.571	8.538	8.506	8.497	8.531	8.538	8.517	8.382	8.333	8.321	8.269	8.279
1991	8.164	8.002	7.775	7.666	7.374	7.169	7.098	7.072	6.859	6.719	6.591	6.318
1992	6.122	5.863	5.680	5.692	5.379	5.323	5.235	4.958	4.760	4.730	4.659	4.647
1993	4.678	4.649	4.624	4.605	4.427	4.554	4.438	4.472	4.430	4.380	4.365	4.384
1994	4.359	4.176	4.248	4.333	4.434	4.623	4.823	4.989	5.106	5.243	5.380	5.528
1995	5.612	5.779	5.934	5.960	6.008	5.997	5.972	5.910	5.832	5.784	5.805	5.748
1996	5.698	5.643	5.557	5.538	5.502	5.548	5.587	5.566	5.601	5.601	5.599	5.574
1997	5.583	5.575	5.580	5.612	5.634	5.667	5.679	5.690	5.707	5.705	5.715	5.744
1998	5.742	5.720	5.680	5.672	5.673	5.671	5.652	5.652	5.639	5.557	5.492	5.374
1999	5.265	5.210	5.136	5.119	5.086	5.095	5.178	5.225	5.274	5.391	5.484	5.639
2000	5.760	5.824	5.851	6.014	6.190	6.349	6.443	6.505	6.502	6.517	6.538	6.535
2001	6.372	6.169	5.976	5.760	5.328	4.958	4.635	4.502	4.288	3.785	3.526	3.261
2002	3.068	2.967	2.861	2.845	2.740	2.687	2.714	2.594	2.604	2.487	2.301	2.201
2003	2.103	1.945	1.904	1.858	1.769	1.697	1.653	1.632	1.635	1.596	1.572	1.545
2004	1.528	1.440	1.474	1.445	1.426	1.469	1.604	1.672	1.771	1.890	2.003	2.134
2005	2.264	2.368	2.542	2.724	2.856	2.967	3.083	3.179	3.324	3.458	3.636	3.808
2006	3.955	4.043	4.142	4.305	4.563	4.700	4.849	4.946	5.023	5.098	5.125	5.129
2007	5.156	5.181	5.214	5.222	5.248	5.250	5.255	5.253	5.231	5.137	4.962	4.801
2008	4.620	4.161	3.777	3.400	3.072	2.894	2.787	2.779	2.774	2.709	2.568	2.353
2009	2.046	1.869	1.822	1.607	1.530	1.377	1.035	0.925	0.750	0.646	0.611	0.569
2010	0.558	0.577	0.547	0.588	0.560	0.528	0.531	0.513	0.500	0.480	0.454	0.462
2011	0.538	0.512	0.500	0.588	0.413	0.448	0.381	0.408	0.378	0.385	0.401	0.382
2012	0.385	0.389	0.383	0.367	0.363	0.358	0.363	0.377	0.348	0.340	0.324	0.326
2013	0.300	0.286	0.285	0.264	0.245	0.244	0.267	0.271	0.257	0.266	0.263	0.264
2014	0.244	0.236	0.236	0.233	0.228	0.228	0.244	0.260	0.246	0.261	0.261	0.267
2015	0.262	0.266	0.278	0.283	0.290	0.299	0.320	0.330	0.337	0.357	0.374	0.400
2016	0.446	0.467	0.506	0.525	0.552	0.576	0.588	0.614	0.634	0.654	0.678	0.719
2017	0.751	0.777	0.821	0.884	0.925	0.978	1.051	1.084	1.111	1.143	1.172	1.239
2018	1.350	1.412	1.524	1.661	1.755	1.854	1.944	1.998	2.063	2.144	2.208	2.291
2019	2.355	2.392	2.436	2.445	2.449	2.428	2.379	2.341	2.280	2.190	2.103	2.043
2020	1.967	1.912	1.787	1.648	1.363	1.217	0.920	0.784	0.685	0.620	0.576	0.540
2021	0.458	0.407	0.357	0.339	0.315	0.262	0.221	0.221	0.206	0.203	0.203	0.212
2022	0.234	0.278	0.365	0.523	0.684	0.861	1.090	1.276	1.513	1.772	2.007	2.173
2023	2.425	2.624	2.831	2.870	2.993	3.167	3.305	3.434	3.534	3.670	3.843	3.929
2024	4.012	4.122	4.232	4.272	4.332	4.480	4.516	4.579	4.575	4.518	4.477	4.443
2025	4.336	4.333	4.313	4.281	4.272	4.269	4.258	4.251	4.212	4.150	4.096	4.025
2026	3.931	3.871	3.826	3.811								



Summary Statement

April 30, 2026

Page 1 of 3

Investor ID: CA-01-0030

0000029-0000138 PDF 944625

Goleta Sanitary District
1 William Moffett Place
Goleta, CA 93117

California CLASS

California CLASS

Average Monthly Yield: 3.6918%

		Beginning Balance	Contributions	Withdrawals	Income Earned	Income Earned YTD	Average Daily Balance	Month End Balance
CA-01-0030-0001	Goleta Sanitary District	5,923,006.13	0.00	0.00	17,972.92	72,260.65	5,923,605.23	5,940,979.05
TOTAL		5,923,006.13	0.00	0.00	17,972.92	72,260.65	5,923,605.23	5,940,979.05



Account Statement

April 30, 2026

Page 2 of 3

Account Number: CA-01-0030-0001

Goleta Sanitary District

Account Summary

Average Monthly Yield: 3.6918%

	Beginning Balance	Contributions	Withdrawals	Income Earned	Income Earned YTD	Average Daily Balance	Month End Balance
California CLASS	5,923,006.13	0.00	0.00	17,972.92	72,260.65	5,923,605.23	5,940,979.05

Transaction Activity

Transaction Date	Transaction Description	Contributions	Withdrawals	Balance	Transaction Number
04/01/2026	Beginning Balance			5,923,006.13	
04/30/2026	Income Dividend Reinvestment	17,972.92			
04/30/2026	Ending Balance			5,940,979.05	



California CLASS

California CLASS

Date	Dividend Rate	Daily Yield
04/01/2026	0.000101363	3.6987%
04/02/2026	0.000404136	3.6878%
04/03/2026	0.000000000	3.6878%
04/04/2026	0.000000000	3.6878%
04/05/2026	0.000000000	3.6878%
04/06/2026	0.000101144	3.6918%
04/07/2026	0.000100968	3.6853%
04/08/2026	0.000100593	3.6717%
04/09/2026	0.000100089	3.6533%
04/10/2026	0.000300831	3.6601%
04/11/2026	0.000000000	3.6601%
04/12/2026	0.000000000	3.6601%
04/13/2026	0.000100847	3.6809%
04/14/2026	0.000101276	3.6966%
04/15/2026	0.000101894	3.7191%
04/16/2026	0.000102498	3.7412%
04/17/2026	0.000305820	3.7208%
04/18/2026	0.000000000	3.7208%
04/19/2026	0.000000000	3.7208%
04/20/2026	0.000101174	3.6929%
04/21/2026	0.000101092	3.6899%
04/22/2026	0.000101103	3.6903%
04/23/2026	0.000101099	3.6901%
04/24/2026	0.000304035	3.6991%
04/25/2026	0.000000000	3.6991%
04/26/2026	0.000000000	3.6991%
04/27/2026	0.000101378	3.7003%
04/28/2026	0.000100579	3.6711%
04/29/2026	0.000101056	3.6885%
04/30/2026	0.000101450	3.7029%

Performance results are shown net of all fees and expenses and reflect the reinvestment of dividends and other earnings. Many factors affect performance including changes in market conditions and interest rates and in response to other economic, political, or financial developments. Investment involves risk including the possible loss of principal. No assurance can be given that the performance objectives of a given strategy will be achieved. **Past performance is no guarantee of future results. Any financial and/or investment decision may incur losses.**

**DISTRICT
CORRESPONDENCE**
Board Meeting of May 18, 2026



Date: **Correspondence Sent To:**

None

Date: **Correspondence Received From:**

1. 05/12/2026 Preston Beauregard Moore
 Santa Barbara County Elections

Subject: Re: Special District Consolidation for November 3, 2026 General Election

Hard Copies of the Correspondence are available at the District's Office for review