



# TOWN OF DISCOVERY BAY

A COMMUNITY SERVICES DISTRICT

**SDLF Platinum-Level of Governance**



President – Kevin Graves • Vice-President – Ashley Porter • Director – Bryon Gutow • Director – Michael Callahan • Director – Carolyn Graham

**NOTICE OF THE MEETING  
OF THE WATER AND WASTEWATER COMMITTEE  
OF THE TOWN OF DISCOVERY BAY  
Wednesday February 2, 2022, 5:30 P.M.**

**NOTICE  
Coronavirus COVID-19**

In response to the current proclaimed State of Emergency, indoor masking requirements, and recommended measures to promote social distancing imposed by State and local officials, the Town of Discovery Bay Community Services District Board of Directors will take all actions necessary to carry out the intent and purpose of AB 361, including, ensuring that the Directors and meeting attendees may continue to have the option to access and participate in this public meeting by teleconference to avoid imminent risks to the health or safety of the Directors and meeting attendees.

To accommodate the public during this period of time that the Board's Chambers are closed to the public, the Town of Discovery Bay Community Services District Board of Directors has arranged for members of the public to observe and address the meeting telephonically.

**TO ATTEND BY WEBINAR:**

Please register for the **Water & Wastewater Committee Meeting** by: *(Copy and pasting into your browser the registration URL. You will then be directed to download the webinar to your device and register with LogMeIn, Inc.)*

Registration URL: <https://attendee.gotowebinar.com/register/1506763458765812491>

Webinar ID# 381-129-851

After registering, you will receive a confirmation email containing information about joining the webinar by computer or by phone.

For listen only mode dial: (562) 247-8321 ID# 371-403-046

Download Agenda Packet and Materials at <http://www.todb.ca.gov/>

**Water & Wastewater Committee Board Members**

*Chair Kevin Graves*

*Vice-Chair Ashley Porter*

**A. ROLL CALL**

1. Call business meeting to order 5:30 p.m.
2. Roll Call.

**B. PUBLIC COMMENTS (Individual Public Comments will be limited to a 3-minute time limit)**

During Public Comments, the public may address the Committee on any issue within the District's jurisdiction which is not on the Agenda. The public may comment on any item on the Agenda at the time the item is before the Committee for consideration. Any person wishing to speak will have 3 minutes to make their comment. There will be no dialog between the Committee and the commenter as the law strictly limits the ability of Committee members to discuss matters not on the agenda. We ask that you refrain from personal attacks during comment, and that you address all comments to the Committee only. Any clarifying questions from the Committee must go through the Chair. Comments from the public do not necessarily reflect the viewpoint of the Committee members.

**C. DRAFT MINUTES TO BE APPROVED**

1. None.

**D. PRESENTATIONS**

1. Presentation Regarding the Capacity and Connection Fee Study.

**E. DISCUSSION ITEMS**

1. Discussion Regarding the Preliminary Traffic Control Plan for Waterline Replacement in Discovery Bay Boulevard.
2. Discussion Regarding the Denitrification Update.
3. Discussion Regarding an Update on Digest Pond Repairs and Cattail Removal.

**F. FUTURE DISCUSSION/AGENDA ITEMS****G. ADJOURNMENT**

1. Adjourn to the next Standing Water & Wastewater Committee meeting at the Community Center located at 1601 Discovery Bay Boulevard.

"This agenda shall be made available upon request in alternative formats to persons with a disability, as required by the American with Disabilities Act of 1990 (42 U.S.C. § 12132) and the Ralph M. Brown Act (California Government Code § 54954.2). Persons requesting a disability related modification or accommodation in order to participate in the meeting should contact the Town of Discovery Bay, at (925) 634-1131, during regular business hours, at least forty-eight hours prior to the time of the meeting."

"Materials related to an item on the Agenda submitted to the Town of Discovery Bay after distribution of the agenda packet are available for public inspection in the District Office located at 1800 Willow Lake Road during normal business hours."

# TOWN OF DISCOVERY BAY COMMUNITY SERVICES DISTRICT

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## Water and Sewer Capacity Fee Study Update



Committee Meeting  
February 2, 2022



LECHOWICZ + TSENG  
MUNICIPAL CONSULTANTS



# Background

- **What are Capacity Fees?**

- One-time fees paid by new development when building permits are issued
- Intended to recover the capital cost of facilities to accommodate growth
- Does not fund routine maintenance or annual operation costs

- **Why is an update needed?**

- Last study was in 2014
  - The Town has since updated its 20-year CIP, completed a Wastewater Master Plan (2019), and has received contractor bids for the denitrification project
- Reduced water demand and sewer flow patterns
  - Attributed to water conservation practices implemented during the 2013-2016 drought
- Developer agreements
  - Previous fees accounted for developer agreements to construct in-lieu facilities in exchange for committed capacity in the utility systems



# Capacity Fee Methodologies

## 1) Buy-In Method

- For existing facilities that have excess capacity to serve new customers
- Development should pay an equal amount to the investment already made by current users
- Calculated based on value of water and sewer fixed asset list

## 2) Average Cost Method

- For planned facilities that benefit both new and current users
- Calculated based on value of both existing & planned facilities divided by existing + new demand
- Majority of the Town's capital projects are allocated using this method

## 3) Expansion Method

- For planned facilities that only benefit new development
- Calculated based the cost of new projects divided by the demand from new users
- Example: Clarifier No. 6 (sewer)



# Reduced Water Demand & Sewer Flow

	2014	2021	Difference
Water	533 gpd	403 gpd	130 gpd
Wastewater	335 gpd	235 gpd	100 gpd

GPD: gallons per day



# System Capacity - EDUs

	Existing Customers	New Customers	Total Buildout 2041
<b><u>WATER</u></b>			
EDUs	7,390	1,278	8,668
% of Total	85.2%	14.8%	100.0%
<b><u>WASTEWATER</u></b>			
EDUs	5,497	1,312	6,809
% of Total	80.7%	19.3%	100.0%

EDU (equivalent dwelling unit) = amount of water/sewer flow used by typical single family residential customer



# Buy-In Capacity Fee

- For Town's existing water and sewer assets
- Existing infrastructure value using RCNLD (replacement cost of new assets, less depreciation)

System	Total Valuation	Total 2041 Buildout Customers	Cost per EDU
Water	\$7,836,909	8,668	\$904
Wastewater	\$43,952,387	6,809	\$6,455





# New Facility Capacity Fee

- Based on the Town’s water and sewer 20-year capital improvement plans
- Town engineers allocated project costs between existing and new customers based on project benefit

System	Cost of Facilities Expansion	Number of New Customers	Cost per EDU
Water	\$5,532,600	1,278	\$4,329
Wastewater	\$3,531,800	1,312	\$2,692



# Sewer Denitrification Project Cost

Project Cost	\$19,924,300
Allocation to Growth	19.3%
Amount to be Financed	\$13,000,000
Annual Debt Service Estimate [1]	\$830,000
Total Debt Service Over Life of the Debt (30 years) [1]	\$24,900,000
Total Debt Service Allocated to Growth	\$4,797,383
Expected Growth FY2021 to FY2041 (EDUs)	1,312
<b>Denitrification Fee (\$/EDU)</b>	<b>\$3,657</b>

1 - Debt service estimate determined by TODBCSD



# Proposed Water Capacity Fee

Proposed	Fee per EDU
Buy-In Fee	\$904
<u>New Facility Fee</u>	<u>\$4,329</u>
<b>Total Water Capacity Fee</b>	<b>\$5,233</b>



# Proposed Wastewater Capacity Fee<sup>12</sup>

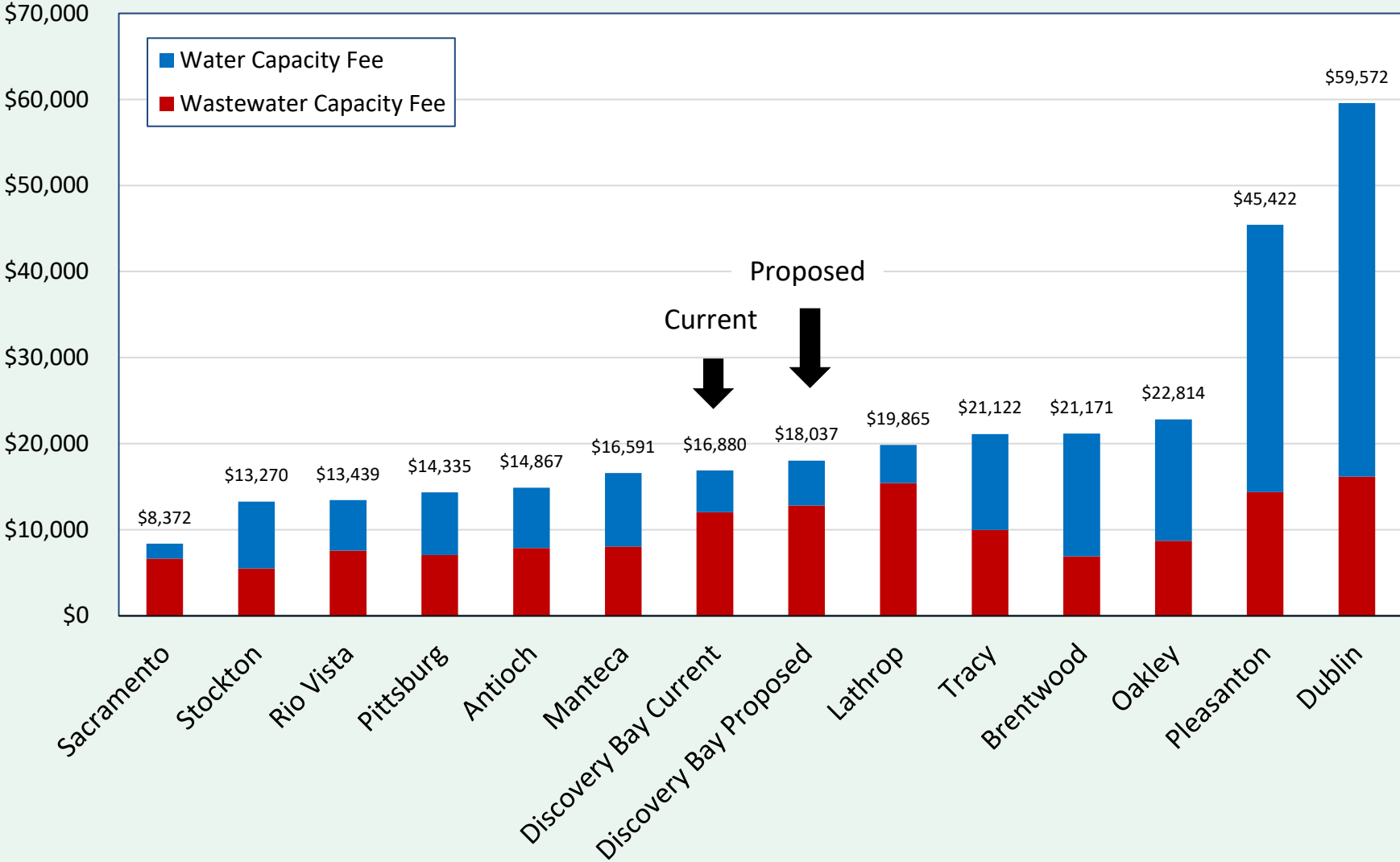
Proposed	Fee per EDU
Buy-In Fee	\$6,455
New Facility Fee	\$2,692
<u>Denitrification Fee</u>	<u>\$3,657</u>
<b>Total Wastewater Capacity Fee</b>	<b>\$12,804</b>



# Current & Proposed Capacity Fees

	Current Fee	Proposed Fee	Difference (\$)	Difference (%)
Water Capacity Fee per EDU	\$4,850	\$5,233	\$383	7.9%
<u>Wastewater Capacity Fee per EDU</u>	<u>\$12,030</u>	<u>\$12,804</u>	<u>\$774</u>	<u>6.4%</u>
<b>Total per EDU</b>	<b>\$16,880</b>	<b>\$18,037</b>	<b>\$1,157</b>	<b>6.9%</b>

# Water and Wastewater Capacity Fee Survey (Single Family Residential Customer - November 2021)



# Questions and Comments





# Town of Discovery Bay Community Services District Water and Sewer Capacity Fee Study

**Draft Report  
January 20, 2022**



**LECHOWICZ + TSENG**  
MUNICIPAL CONSULTANTS

909 Marina Village Parkway #135  
Alameda, CA 94501  
(510) 545-3182  
[www.LTmuniconsultants.com](http://www.LTmuniconsultants.com)





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## SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY

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### 1.1 Background

The purpose of this report is to update the Town of Discovery Bay Community Services District's (TODBCSD, Town, or District) water and sewer capacity fees. Capacity fees are one-time fees paid by new development when building permits are issued by the Town. The fees are intended to recover the capital cost of facilities needed to accommodate growth. They do not collect revenues to fund routine maintenance or operations that are typically budgeted on an annual basis.

The Town last conducted a capacity fee study in 2014. Since 2014, the Town has updated its 20-year capital improvement plan, completed a Wastewater Master Plan (2019), and received contractor bids for its denitrification project. The Town received guidance from the Regional Water Quality Control Board that the Town's wastewater treatment plant must add denitrifying facilities by 2024 in order to meet regulatory requirements. Additionally, the 2014 fees accounted for agreements through which developers constructed in-lieu facilities in exchange for committed capacity in the utility systems. The committed capacity has since been assigned as appropriate and the agreements are no longer applicable.

This update is also necessary due to changes in water demand and sewer flow patterns. The typical water demand per new single family home has decreased from 533 gallons per day (2014) to 403 gallons per day (current) and estimated sewer flow per new home has decreased from 335 gallons per day (2014) to 235 gallons per day (current). This reduction is primarily attributed to water conservation practices implemented during the 2013-2016 drought to meet the regulated reduction levels imposed by the Department of Water Resources. While these regulations have been lifted, some of the conservation practices will be permanent. For example, many outdoor lawns were converted during the drought. Installation of meters has also reduced usage since the prior study. Customers typically reduce their usage when converted from flat rate to volumetric billing. Meters also help to identify and fix water leaks.

For this update, it is also recommended that the Town consider pollutant loading when assessing wastewater fees for non-residential connections. Due to water conservation and drought conditions, sewer flows may vary. Biological oxygen demand (BOD) and total kjeldahl nitrogen (TKN) expressed as pounds generated per day do not vary with flows and can be used to proportionally calculate non-residential fees.

### 1.2 Legal Requirements

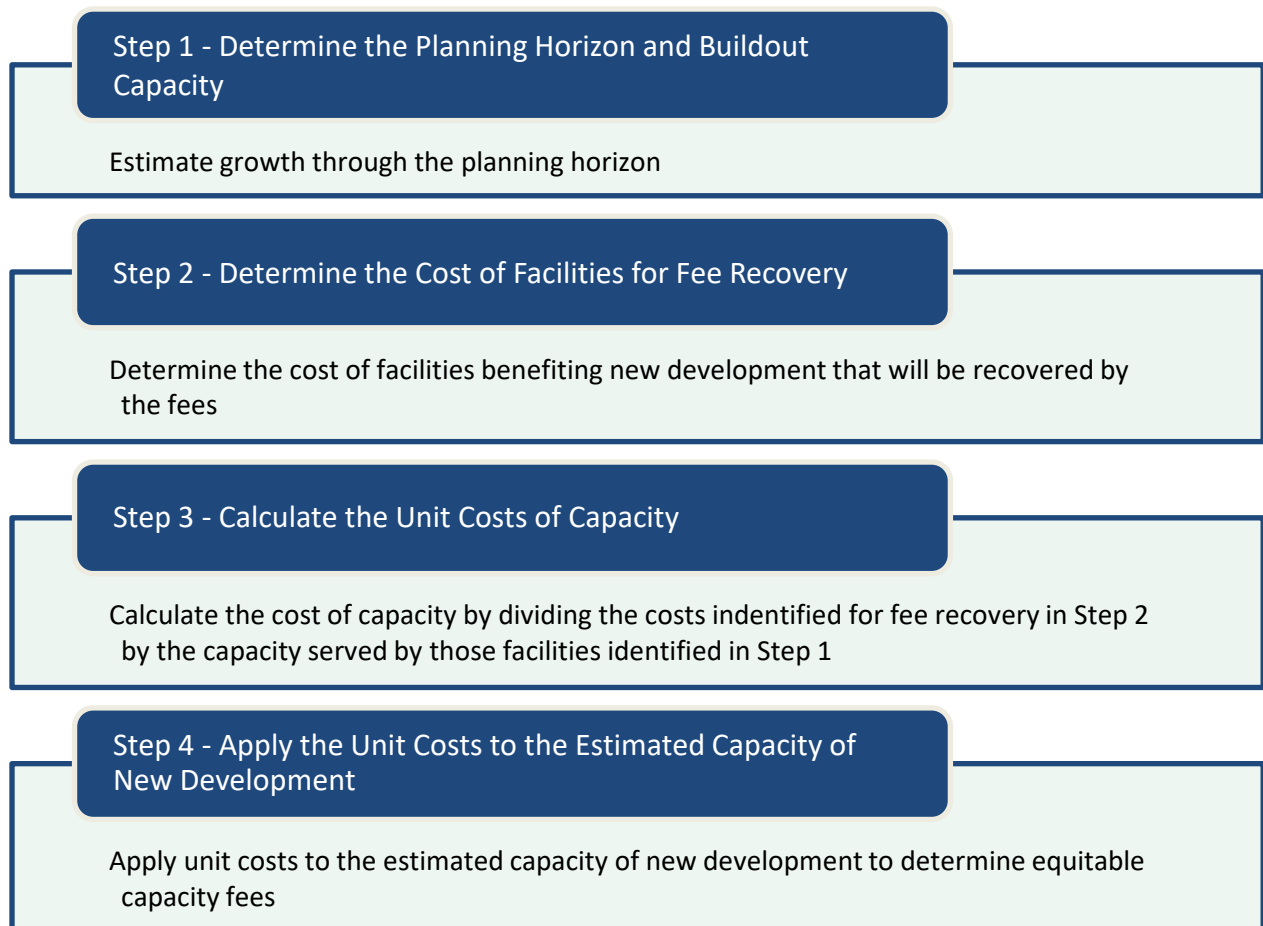
The Mitigation Fee Act (California Government Code Sections 66000 through 66025) describes the legal requirements pertaining to establishing capacity fees (also called development impact fees or connection fees). The Act requires that for any fee to be adopted, the Town must identify facilities that benefit new growth and development and determine a fair value or cost of those facilities. The cost of

facilities attributable to new development must be proportional to the share of facilities the development uses. This report provides an administrative record to identify and document the facilities benefitting growth, the cost and capacity of these facilities, and the calculation of proposed capacity fees based on new development's proportionate share of the costs described.

### 1.3 Capacity Fee Study Process

The fee study process is summarized in the figure below.

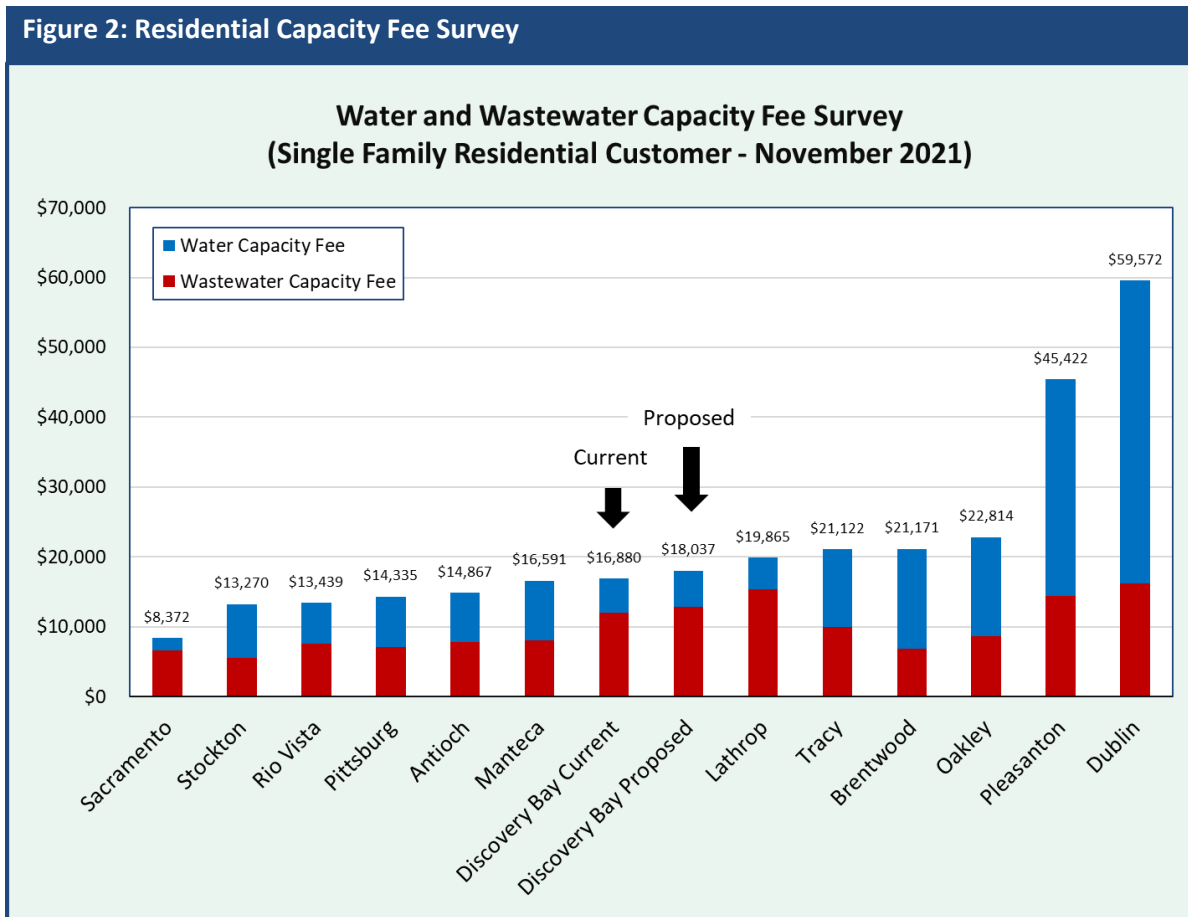
**Figure 1: Capacity Fee Study Process**



### 1.4 Proposed Fees

The current and proposed water and wastewater capacity fees are shown in Table 1. The combined water and wastewater fee per equivalent dwelling unit (EDU; i.e. typical single family home) is proposed to increase from \$16,880 (current) to \$18,037 (proposed). A survey comparing The District’s current and proposed residential fees to other local agencies is provided in Figure 2 and Table 2. The District’s combined water and wastewater capacity fee currently falls in the mid-range of surveyed fees and will remain in the mid-range if the proposed fees are adopted.

Table 1: Current and Proposed Water and Wastewater Capacity Fees Water and Sewer Capacity Fee Study 2022 Town of Discovery Bay Community Services District		
Fees	Current	Proposed
Water Capacity Fee per EDU	\$4,850	\$5,233
Wastewater Capacity Fee per EDU	<u>\$12,030</u>	<u>\$12,804</u>
Total per EDU	\$16,880	\$18,037



**Table 2: Residential Capacity Fee Survey  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

<b>Community</b>	<b>Water</b>	<b>Wastewater</b>	<b>Total</b>
Sacramento [1]	\$1,742	\$6,630	\$8,372
Stockton [2]	\$7,785	\$5,486	\$13,270
Rio Vista [3]	\$5,861	\$7,578	\$13,439
Pittsburg (Delta Diablo SD) [4]	\$7,272	\$7,063	\$14,335
Antioch (Delta Diablo SD) [5]	\$7,008	\$7,859	\$14,867
Manteca [6]	\$8,552	\$8,039	\$16,591
<b>Discovery Bay Current</b>	<b>\$4,850</b>	<b>\$12,030</b>	<b>\$16,880</b>
<b>Discovery Bay Proposed</b>	<b>\$5,233</b>	<b>\$12,804</b>	<b>\$18,037</b>
Lathrop (Manteca WQCF) [7]	\$4,442	\$15,422	\$19,865
City of Tracy [8]	\$11,163	\$9,959	\$21,122
Brentwood [9]	\$14,263	\$6,908	\$21,171
Oakley (Ironhouse SD, Diablo WD) [10]	\$14,106	\$8,708	\$22,814
Pleasanton [11]	\$31,060	\$14,362	\$45,422
DSRSD (Dublin) [12]	\$43,403	\$16,169	\$59,572

[1] Wastewater fee includes a combined sewer development fee effective 7/1/2021 and the Sacramento Regional County Sanitation District (Regional San) treatment fee effective 7/1/2019.

[2] Fees effective FY2021-22. Water fees include a water connection fee plus a 3.5% administration fee and a Delta Water Supply Project Surface Water Supply fee. Wastewater fee is for the Westside Project C service area plus a 3.5% administrative fee.

[3] Fees last updated in 2009. Water fee includes supply wells, storage, and transmission system fees. Wastewater fee includes a collection system fee and a connection fee.

[4] Water fee effective 11/01/21. Fee varies based on development area. Fee shown is for San Marco A&M (Zone 2). Sewer fee effective 11/01/21. Wastewater treatment is provided by Delta Diablo Sanitation District, which updated fees 7/28/21.

[5] City of Antioch water and sewer connection fees effective 07/01/21. Water fees include a treated water capacity fee and a water capacity fee. Wastewater capacity fee includes a City sewer connection fee and a wastewater treatment fee from the Delta Diablo Sanitation District updated 7/28/21.

[6] Water fees effective 1/1/20. Water fee includes a Well Water PFIP for wells and distribution lines and a debt service fee. Sewer fee includes a connection charge effective 12/3/03, a Manteca Water Quality Control Facility (Manteca WQCF) Phase 3 completion charge effective 7/20/09, and a sewer public facilities implementation program fee effective 1/1/20. Wastewater fees based on low density residential in Zone 22. The Manteca WQCF added denitrification May 2006 and tertiary filters September 2007.

[7] Fees effective 07/01/21. Fees shown for the East Lathrop service area. Fees vary for other development areas. The water connection fee includes a surface water supply fee and a water system buy-in fee. The wastewater connection fee includes a sewer collection fee and a fee for the Manteca-Lathrop Water Quality Control Facility. Fees include a 3% administrative fee.

[8] The water connection fee includes a distribution, supply, and treatment fee. The wastewater fee includes a conveyance fee (west service area) and a treatment plant fee. Fees shown are effective 07/01/20 for low density residential use.

[9] Fees effective 07/01/21.

[10] City of Oakley is served by the Ironhouse Sanitary District and the Diablo Water District. The Ironhouse Sanitary District fee is effective 01/01/22. The Diablo Water District fee is effective 9/1/20 and includes facility reserve charges for the West of Jersey Island Road service area, a Main Extension Reimbursement Assessment, and a Contra Costa Water District facilities reserve charge effective April 1, 2021.

[11] Fees effective 09/2/21. The water capacity fee includes a City water connection fee and a Alameda County Flood Control and Water Conservation District, Zone 7, water connection fee. The wastewater capacity fee includes a DSRSD sewer connection fee and a City sewer capacity fee.

[12] Dublin San Ramon Services District - Dublin service area. Fees effective July 1, 2021. The water capacity fee includes a DSRSD water capacity fee and an Alameda County Flood Control and Water Conservation District, Zone 7, water connection fee.

## SECTION 2: LEGAL REQUIREMENTS AND METHODOLOGY

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This section provides a review of the economic and legal foundations for capacity fees. The basic economic philosophy behind the imposition of capacity fees is that the costs of providing infrastructure should be paid by new development receiving the benefits of the infrastructure so that no one group subsidizes any other group (such as existing residents subsidizing improvements that only benefit new development). In establishing any fee or charge, achieving equity is one of the primary goals. In the case of development impact fees, this goal has been expressed in the form of “growth should pay for growth.”

### 2.1 Legal Requirements

Capacity fees (also called connection fees or development impact fees) must be assessed according to the requirements laid out in the Mitigation Fee Act (California Government Code Sections 66000 through 66025). This Act lays out five major requirements for imposing capacity fees. When determining fees, the Town must identify and document:

1. The purpose of the fee.
2. The use of the fee (including the facilities to be financed).
3. A reasonable relationship between the fee’s use and the type of development project on which it is imposed.
4. A reasonable relationship between the need for public facilities and the type of development projects on which fees are imposed.
5. A reasonable relationship between the amount of the fee and the cost or portion of the public facilities funded through fee revenue.

This report is intended to document and calculate the maximum justified water and wastewater capacity fees according to these provisions of the Mitigation Fee Act.

### 2.2 Fee Methodologies

There are several industry standard methodologies for calculating capacity fees and allocating appropriate costs to new development. The three most common methods are the buy-in method, the average cost method, and the expansion method. All three methods are used in this report when appropriate to allocate individual facility costs between existing connections and growth.

#### 2.2.1 Buy-in Method

The buy-in concept is most appropriate for existing infrastructure that has excess capacity to serve new connections through buildout. This method is based on the premise that new development should pay an amount equal to the investment already made by existing ratepayers in the facilities. Once a new connection has paid its fee, the new connection becomes equivalent to existing ratepayers and shares the responsibility for existing facilities via the payment of rates, usage fees, or taxes, as appropriate.

Existing facilities and their value were determined from the District's water and sewer fixed asset list. The list was reviewed, and facilities that are not fully depreciated and have capacity to serve growth through buildout are included in the buy-in portion of the capacity fee. The value of existing facilities is calculated using the replacement cost new less depreciation (RCNLD) method (described further in Section 4.1). Facilities that have no available capacity, are fully depreciated, or are scheduled to be replaced in the District's capital improvement plan are excluded from the buy-in fee.

### **2.2.2 Average Cost Method**

The average cost method is used when planned facilities will benefit both new development and existing users. It is appropriate when new facility standards will surpass the standards of existing facilities and all users will share the new facilities. Under this method, capacity fees are calculated based on the value of both existing and planned facilities divided by both existing and new demand. Most District capital improvements are allocated using the average cost method as they benefit both groups by providing capacity to all customers through buildout.

### **2.2.3 Expansion Method**

The expansion method is recommended when planned facilities will serve only new development and would not be needed absent development (i.e., the project is "triggered" by growth). This method is appropriate for either entirely new facilities or expansions of existing facilities that are only needed due to new development. Fees are calculated based on the ratio of the cost of planned facilities that will serve new development to estimated demand or impact from new development. Clarifier no. 6 is an example of a facility allocated solely to growth based on the expansion method. Although the clarifier will provide redundancy to the existing water system, the clarifier is triggered by growth and is needed to provide treatment to new connections.



## SECTION 3: BUILDOUT CAPACITY

This report utilizes the buildout capacities established by the District’s water engineer Luhdorff & Scalmanini Consulting Engineers and wastewater engineer Stantec Consulting Services. The District has established a twenty-year planning horizon for the capacity fee update. Thus, future growth and capital improvement costs are estimated through 2041. All estimates are based on the best information available at the time of this report and all known projects are included. Growth in the District’s water demand is evaluated as the increase in average day demand expressed as gallons per day (gpd), gallons per minute (gpm), or million gallons per day (mgd). The design capacity of a typical single family dwelling unit (called an equivalent dwelling unit – EDU) is estimated to be approximately 403 gallons per day or 0.28 gpm per EDU. An EDU is defined as the amount of water used by a typical single family residential customer. Due to local and state water conservation requirements and/or drought conditions, actual water use may vary from year to year. However, 403 gallons per day per EDU is the capacity used in the engineering and design of Discovery Bay’s water system. Table 3 below provides the computational basis of a water EDU.

<b>Table 3: Definition of a Water EDU</b>		
<b>Water and Wastewater Capacity Fee Study 2022</b>		
<b>Town of Discovery Bay Community Services District</b>		
2020 Total Residential Water Usage [1]	783	MG
2020 Total Residential Service Connections [2]	5,997	SC
Unit Water Demand per Service Connection [3] (equivalent to 1 EDU)	0.28	gal/min/SC
EDU Daily Water Usage [4]	403	gal/day
1 - Page 18, Technical Memorandum on Water System Demand by Luhdorff & Scalmanini Consulting Engineers, February 2021		
2 - Page 2, Technical Memorandum on Water System Demand by Luhdorff & Scalmanini Consulting Engineers, February 2021		
3 - Table 5, Technical Memorandum on Water System Demand by Luhdorff & Scalmanini Consulting Engineers, February 2021		
4 - $(0.28 \text{ gal/min/SC}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})$		

The definition of a wastewater EDU is provided in Table 4. Based on current design standards, the typical flow of an EDU can be defined as 235 gpd. However, the District should also consider pollutant loading in its definition of an EDU, as pollutant loading is not affected by water conservation and decreased sewer flows. Provided below are the design standards for biological oxygen demand (BOD) and total kjeldahl nitrogen (TKN) per EDU and total loading through buildout.

**Table 4: Definition of a Wastewater EDU  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

Flow per EDU [1] (can vary with water conservation)	235	gal/day
Load per EDU (not affected by water conservation)		
Buildout BOD Load [2]	3,738	lbs/day
BOD load per EDU	0.5490	lbs/day/EDU
Buildout TKN Load [2]	748	lbs/day
TKN load per EDU	0.1099	lbs/day/EDU

1 - Page 56, Wastewater Treatment Master Plan Update by Stantec Consulting Services, November 2019

2 -Table 2-3, Wastewater Treatment Master Plan Update by Stantec Consulting Services, November 2019

The 2019 Wastewater Treatment Master Plan Update provides expected growth in single family dwelling units and growth in commercial development in Discovery Bay's service area through 2041. Table 5 provides a summary of this estimated growth expressed as wastewater EDUs.

**Table 5: Growth in Wastewater EDUs Through 2041  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

<b>Development Type</b>	<b>Units</b>	<b>Number</b>	<b>Projected Flow, gpd</b>	<b>EDUs (235 gpd/EDU)</b>
Residential	Homes	1,208	283,880	1,208
Commercial	Acres	5	8,000	34
Business Park/Office	Acres	8.2	<u>16,400</u>	<u>70</u>
Total			308,280	1,312

Source: Table 5-11 of Wastewater Treatment Plant Master Plan Update by Stantec Consulting Services Inc., November 2019. Projected flows converted to EDUs based on 235 gallons per day per EDU.

Existing customers and the 2041 buildout projection are provided in Table 6. It is expected that each utility will add about 1,300 EDUs in the next twenty years.

<b>Table 6: Buildout Projection</b>			
<b>Water and Sewer Capacity Fee Study 2022</b>			
<b>Town of Discovery Bay Community Services District</b>			
<b>Water System</b>			
Existing Demand [1]	2.929	mgd	85.2%
<u>Expected Growth FY2021 to FY2041</u>	<u>0.507</u>	mgd	<u>14.8%</u>
Buildout Demand [1]	3.436	mgd	100.0%
Present [2]	7,390	EDUs	
<u>Expected Growth FY2021 to FY2041</u>	<u>1,278</u>	EDUs	
Build-out [2]	8,668	EDUs	
<b>Wastewater System</b>			
Present [3]	5,497	EDUs	80.7%
<u>Expected Growth FY2021 to FY2041</u>	<u>1,312</u>	EDUs	<u>19.3%</u>
Buildout	6,809	EDUs	100.0%
1 - Page 8-9, Technical Memorandum on Water System Demand by Luhdorff & Scalmanini Consulting Engineers, February 2021.			
2 - Page 7, Technical Memorandum on Water System Demand by Luhdorff & Scalmanini Consulting Engineers, February 2021.			
3 - Page 56, Wastewater Treatment Master Plan Update by Stantec Consulting Services, November 2019			

## SECTION 4: COST OF FACILITIES

This section establishes the cost of facilities to be recovered in the capacity fees.

### 4.1 Buy-in to Existing Facilities

New customers connecting to the system receive benefit from a large portion of the facilities that are already in place throughout the Town. The buy-in portion of the capacity fee recovers the costs of existing facilities that benefit all customers, existing and new.

As a first step, the District's fixed asset list was reviewed and edited to remove facilities or assets that are not appropriate for capacity fee recovery including items that have other cost recovery mechanisms (like water meters and developer reimbursements), assets that are fully depreciated, and assets that are scheduled to be replaced in the capital improvement plan.

The value of existing facilities was calculated using the Replacement Cost New Less Depreciation (RCNLD) method. The book cost of Town facilities less depreciation was escalated to present worth using the Engineering News Record's Construction Cost Index for San Francisco for October 2021. The water system buy-in cost is \$904/EDU, see Table 7, and the wastewater system buy-in cost is \$6,455/EDU, see Table 8.

<b>Table 7: Buy-in to Existing Water Facilities Water and Sewer Capacity Fee Study 2022 Town of Discovery Bay Community Services District</b>	
<b>Asset Category</b>	<b>RCNLD [1]</b>
Buildings & Improvements	\$221,837
Land [2]	\$132,000
Office Furniture & Equipment	\$22,774
Vehicles	\$24,087
Equipment	\$35,161
Newport Water Treatment Plant	\$2,955,170
Willow Lake Water Treatment Plant	\$2,891,943
Other Treatment and Transmission	<u>\$1,553,938</u>
Total	\$7,836,909
Buildout EDUs	8,668
Buy-in Cost (\$/EDU)	\$904
1 - Original cost less depreciation adjusted to current construction cost.	
2 - Land does not depreciate. Original book cost shown.	

**Table 8: Buy-in to Existing Wastewater Facilities  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

<b>Asset Category</b>	<b>RCNLD [1]</b>
Buildings & Improvements	\$373,309
Land [2]	\$175,000
Office Furniture & Equipment	\$35,378
Vehicles	\$35,668
Equipment	\$43,959
Newport Lift Station	\$1,626,609
Collection and Treatment	\$35,041,447
Biosolids Handling	\$4,171,982
Discharge Pipeline	\$2,449,035
Total	\$43,952,387
Buildout EDUs	6,809
Buy-in Cost	\$6,455
1 - Original cost less depreciation adjusted to current construction cost.	
2 - Land does not depreciate. Original book cost shown.	

## 4.2 Allocation of Future Planned Facilities

Table 9 and Table 10 provide the Town's water and sewer 20-year capital improvement lists and allocate project costs between existing customers and growth based on project benefit. Project benefit was determined based on the professional judgement of Luhdorff & Scalmanini Consulting Engineers and Stantec Consulting Services. The capital improvement plans have only one project, Clarifier no. 6, that is 100% allocated to growth as it is needed to expand capacity for new development. Based on the buildout projections in Table 6, most other projects are allocated either 85.2% to existing connections and 14.8% to growth based on expected water demand through buildout (2041) or 80.7% to existing connections and 19.3% to growth based on sewer system buildout conditions. Projects allocated via this method will benefit both groups by maintaining capacity in the systems over the next twenty years. A small number of projects are allocated solely to existing customers. These projects repair existing deficiencies and do not maintain or establish capacity for new connections. Costs allocated to existing connections will be funded through rate revenues and costs allocated to future connections will be funded through capacity fee revenues.

**Table 9: Allocation of Water Capital Improvement Costs  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

<b>Capital Improvement Projects</b>	<b>Total Cost</b>	<b>Existing Connections</b>	<b>Future Connections</b>	<b>Existing Connections</b>	<b>Future Connections</b>	<b>Project Benefit [1]</b>
<b>Water Supply Wells</b>						
Well 8 (New) - well and standalone treatment plant	\$4,800,000	85.2%	14.8%	\$4,091,700	\$708,300	buildout
Well 5A (Abandon) - destroy well and decommission site	\$200,000	100.0%	0.0%	\$200,000	\$0	repair
Well 1B (Replace) - New well onsite, major upgrades	\$2,250,000	85.2%	14.8%	\$1,918,000	\$332,000	buildout
Well 2 (Upgrade) - Replace electrical panel and motor	\$150,000	85.2%	14.8%	\$127,900	\$22,100	buildout
Well 6 (Rehab and Upgrade) - THM corrections	\$250,000	85.2%	14.8%	\$213,100	\$36,900	buildout
Well 4A (Rehab) - every 5 years until replacement	\$450,000	85.2%	14.8%	\$383,600	\$66,400	buildout
Well 4A (Replace) - New well onsite, minor upgrades pump	\$1,500,000	85.2%	14.8%	\$1,278,700	\$221,300	buildout
Well 7 (Rehab and Upgrade) - Rehab & replace components	\$300,000	85.2%	14.8%	\$255,700	\$44,300	buildout
Well Site Replacement (Contingency) - most likely Well 2	\$3,000,000	85.2%	14.8%	\$2,557,300	\$442,700	buildout
<b>Willow Lake Water Treatment Plant</b>						
Filters A, B, C (Rehab) - repair vessel and coating	\$375,000	85.2%	14.8%	\$319,700	\$55,300	buildout
Filters A, B, C (Rehab) - replace media every 10 years	\$600,000	85.2%	14.8%	\$511,500	\$88,500	buildout
Filters A, B (Replacement) - after service life	\$1,200,000	85.2%	14.8%	\$1,022,900	\$177,100	buildout
Storage Tanks A, B, C - inspect and clean every 5 years	\$200,000	100.0%	0.0%	\$200,000	\$0	repair
Booster Pump, Jockey Pump, Reclaim Pump	\$320,000	85.2%	14.8%	\$272,800	\$47,200	buildout
VFDs for 4x Booster Pumps	\$300,000	85.2%	14.8%	\$255,700	\$44,300	buildout
Electrical Switchgear Upgrade	\$200,000	85.2%	14.8%	\$170,500	\$29,500	buildout
SCADA Upgrade	\$150,000	85.2%	14.8%	\$127,900	\$22,100	buildout
Chemical System Upgrade	\$100,000	85.2%	14.8%	\$85,200	\$14,800	buildout
Diesel Generator Replacement	\$400,000	85.2%	14.8%	\$341,000	\$59,000	buildout
Station Pipe Repair - pipe, valves, instrumentation	\$100,000	85.2%	14.8%	\$85,200	\$14,800	buildout
Site Upgrade: automatic gate taller fence, paving	\$350,000	85.2%	14.8%	\$298,400	\$51,600	buildout
Building Repairs - roofing and painting	\$50,000	100.0%	0.0%	\$50,000	\$0	repair

Capital Improvement Projects	Total Cost	Existing Connections	Future Connections	Existing Connections	Future Connections	Project Benefit [1]
<b>Newport Drive Water Treatment Plant</b>						
Filters A, B (Rehab) - repair vessel and coating	\$150,000	85.2%	14.8%	\$127,900	\$22,100	buildout
Filters A, B (Rehab) - replace media every 10 years	\$375,000	85.2%	14.8%	\$319,700	\$55,300	buildout
Filters A, B (Replacement) - after service life	\$1,000,000	85.2%	14.8%	\$852,400	\$147,600	buildout
Storage Tank Inspection and Cleaning	\$200,000	100.0%	0.0%	\$200,000	\$0	repair
Booster Pump, Jockey Pump, Reclaim Pump (Replacement)	\$400,000	85.2%	14.8%	\$341,000	\$59,000	buildout
VFDs for 4x Booster Pumps	\$300,000	85.2%	14.8%	\$255,700	\$44,300	buildout
Electrical Switchgear Upgrade	\$200,000	85.2%	14.8%	\$170,500	\$29,500	buildout
SCADA Upgrade	\$150,000	85.2%	14.8%	\$127,900	\$22,100	buildout
Chemical System Upgrade	\$100,000	85.2%	14.8%	\$85,200	\$14,800	buildout
Diesel Generator Replacement	\$400,000	85.2%	14.8%	\$341,000	\$59,000	buildout
Station Pipe Repair - pipe, valves, instrumentation	\$100,000	85.2%	14.8%	\$85,200	\$14,800	buildout
Site Upgrade - automatic gate (0-5yr), paving(10-20 yr)	\$275,000	85.2%	14.8%	\$234,400	\$40,600	buildout
Building Repairs - roofing and painting	\$120,000	100.0%	0.0%	\$120,000	\$0	repair
<b>Water Distribution System</b>						
Mainline Replacement - 13 miles AC pipe older > 40 years	\$13,000,000	85.2%	14.8%	\$11,082,100	\$1,917,900	buildout
Underwater Crossings (11 total) - replace with HDD	\$4,000,000	85.2%	14.8%	\$3,409,900	\$590,100	buildout
Cathodic Protection Systems	<u>\$250,000</u>	85.2%	14.8%	<u>\$213,100</u>	<u>\$36,900</u>	buildout
<b>Total Water Project Costs</b>	<b>\$38,265,000</b>			<b>\$32,732,400</b>	<b>\$5,532,600</b>	
			Expected Growth FY2021 to FY2041		1,278	EDUs
			Water New Facility Fee		\$4,329	\$/EDU
1 - Buildout projects are allocated 85.2% to existing connections and 14.8% to future connections (see Table 6). Repair projects are allocated 100% to existing connections. Expansion projects are allocated 100% to future connections.						

**Table 10: Allocation of Wastewater Capital Improvement Costs  
Water and Sewer Capacity Fee Study 2022  
Town of Discovery Bay Community Services District**

<b>Capital Improvement Projects</b>	<b>Total Cost</b>	<b>Existing Connections</b>	<b>Future Connections</b>	<b>Existing Connections</b>	<b>Future Connections</b>	<b>Project Benefit [1]</b>
<b>Wastewater Lift Station Improvements</b>						
Lift Station(s) 2018-2019, 2019-2021	\$50,000	100%	0%	\$50,000	\$0	repair
Lift Station(s) R, J, S, D	\$600,000	100%	0%	\$600,000	\$0	repair
Lift Station(s) E	\$700,000	100%	0%	\$700,000	\$0	repair
Lift Station(s) A, C, H	\$300,000	100%	0%	\$300,000	\$0	repair
Village I, II, III, IV Rehab	\$1,000,000	100%	0%	\$1,000,000	\$0	repair
<b>Wastewater System &amp; Maintenance</b>						
Plant 2 RAS & WAS Pumping System- Covering Structure	\$157,000	80.7%	19.3%	\$126,800	\$30,200	buildout
Replace Lagoon Dredge & Conduits	\$166,294	100%	0%	\$166,300	\$0	repair
Outfall Diffuser Engineers Report & Permitting	\$45,000	80.7%	19.3%	\$36,300	\$8,700	buildout
Outfall Diffuser Repairs	\$786,000	80.7%	19.3%	\$634,600	\$151,400	buildout
VacTruck Pump Station for the lagoons	\$100,000	100%	0%	\$100,000	\$0	repair
<b>Other Master Plan Projects</b>						
Solids Handling Improvements	\$180,000	100%	0%	\$180,000	\$0	repair
WAS Pumps and Check Valves Replacement	\$107,000	100%	0%	\$107,000	\$0	repair
<b>Mainline Piping Replacement</b>						
235 feet of pipe (Lakeview Business Plaza from Cherry Hills)	\$250,000	100%	0%	\$250,000	\$0	repair
<b>Master Plans</b>						
Wastewater Master Plan	\$200,000	80.7%	19.3%	\$161,500	\$38,500	buildout
O&M Manual update after the completion of Denitrification	\$100,000	80.7%	19.3%	\$80,700	\$19,300	buildout
<b>Equipment</b>						
Vac Truck - Replacement or Additions EPA Adaptations	\$600,000	100%	0%	\$600,000	\$0	repair
Solar Dryer Panel Replacement	\$788,000	80.7%	19.3%	\$638,800	\$151,800	buildout



Capital Improvement Projects	Total Cost	Existing Connections	Future Connections	Existing Connections	Future Connections	Project Benefit [1]
<b>New Items</b>						
Rehab and Recoat Manholes in Cheery Hills and on Newport Line	\$400,000	100%	0%	\$400,000	\$0	repair
Recoat Influent Pump Station	\$150,000	80.7%	19.3%	\$121,100	\$28,900	buildout
Replace Pump Station W and MH- 1	\$2,000,000	80.7%	19.3%	\$1,614,700	\$385,300	buildout
Plant No. 2 - Add Grit Removal	\$2,000,000	80.7%	19.3%	\$1,614,700	\$385,300	buildout
Plant No. 2 - Replace Clarifier No. 3	\$500,000	80.7%	19.3%	\$403,700	\$96,300	buildout
Plant No. 2 - Replace weirs and scum baffels at clarifiers No. 4 & 5	\$200,000	80.7%	19.3%	\$161,500	\$38,500	buildout
Plant No. 2 - Refurbish Filter System	\$1,000,000	80.7%	19.3%	\$807,300	\$192,700	buildout
Plant No. 2 - Replace UV System	\$1,000,000	80.7%	19.3%	\$807,300	\$192,700	buildout
Plant No. 2 - Replace Belt Press No. 1	\$500,000	80.7%	19.3%	\$403,700	\$96,300	buildout
Plant No. 2 - Replace Moles	\$320,000	80.7%	19.3%	\$258,300	\$61,700	buildout
Plant No. 2 - Redo Electrical in Solar Dryer A & B	\$150,000	80.7%	19.3%	\$121,100	\$28,900	buildout
Plant No. 2 - Replace SCADA System	\$300,000	80.7%	19.3%	\$242,200	\$57,800	buildout
Plant No. 2 - Replace Standby Generator	\$250,000	80.7%	19.3%	\$201,800	\$48,200	buildout
Plant No. 2 - Replace Solar Bees in Lagoons	\$100,000	80.7%	19.3%	\$80,700	\$19,300	buildout
Clarifier No. 6	\$1,500,000	0.0%	100.0%	\$0	\$1,500,000	expansion
<b>Total Wastewater Project Costs</b>	<b>\$16,499,294</b>			<b>\$12,967,500</b>	<b>\$3,531,800</b>	
			Expected Growth FY2021 to FY2041		1,312	EDUs
			Wastewater New Facility Fee		\$2,692	\$/EDU
1 - Buildout projects are allocated 80.7% to existing connections and 19.3% to future connections (see Table 6). Repair projects are allocated 100% to existing connections. Expansion projects are allocated 100% to future connections.						

In addition to the capital improvements shown on the prior page, the District has received a contractor bid of approximately \$20 million for denitrification facilities. These facilities will benefit both existing customers and growth through buildout. It is expected that existing customers will use a combination of rate-funded reserves and a new bond issuance to cover their share. It is expected that the future customer portion will be bond-funded with debt service paid via capacity fees collected over time. Financing costs were estimated by the District. Table 11 calculates a denitrification fee of \$3,657.

<b>Table 11: Denitrification Costs</b> <b>Water and Sewer Capacity Fee Study 2022</b> <b>Town of Discovery Bay Community Services District</b>	
Project Cost	\$19,924,300
Allocation to Growth	19.3%
Amount to be Financed	\$13,000,000
Annual Debt Service Estimate [1]	\$830,000.00
Total Debt Service Over Life of the Debt (30 years) [1]	\$24,900,000
Total Debt Service Allocated to Growth	\$4,797,383
Expected Growth FY2021 to FY2041	1,312
Denitrification Fee (\$/EDU)	\$3,657
1 - Debt service estimate determined by TODBCSD	

## SECTION 5: FEE CALCULATION

This section provides the combined total fees for the water and wastewater systems.

### 5.1 Recommended Fees

Table 12 provides the total proposed water capacity fee. The buy-in fee is added to the new facilities fee to equal a total residential water capacity fee of \$5,233/EDU. The District should determine non-residential capacity fees based on each customer's estimated demand. Capacity fees for non-residential customers can be calculated by scaling their estimated demand to 403 and multiplying by \$5,233. Table 12 provides an example of a fee scaled for a customer with 1,000 gal/day average demand.

<b>Table 12: Water Capacity Fee Calculation</b> <b>Water and Sewer Capacity Fee Study 2022</b> <b>Town of Discovery Bay Community Services District</b>		
<b>Residential Capacity Fee</b>		
Buy-in Capacity Fee per EDU	\$904	Table 7
New Facility Fee per EDU	<u>\$4,329</u>	Table 9
Total Fee (403 gal/day avg day demand)	\$5,233	
<b>Example Nonresidential Capacity Fee</b>		
Buy-in Capacity Fee	\$2,243	
New Facility Fee	<u>\$10,742</u>	
Total Fee (1,000 gal/day avg day demand) [1]	\$12,985	
1 - \$5,233 x (1,000 gal/403 gal)		

Table 13 calculates the proposed wastewater capacity fee. The buy-in, new facilities, and denitrification fees are summed to a total proposed residential fee of \$12,804/EDU. When a new non-residential customer connects to the system, capacity fees should be calculated on an individual basis. The District can scale the fee using either the flow of a typical EDU or the pollutant loading shown in Table 4. Table 13 provides an example nonresidential capacity fee scaled based on 1,000 gal/day average flow.

**Table 13: Wastewater Capacity Fee Calculation**  
**Water and Sewer Capacity Fee Study 2022**  
**Town of Discovery Bay Community Services District**

<b>Residential Capacity Fee</b>		
Buy-in Capacity Fee per EDU	\$6,455	Table 8
New Facility Fee per EDU	\$2,692	Table 10
Denitrification Fee per EDU	<u>\$3,657</u>	Table 11
Total Fee (235 gal/day avg day flow)	\$12,804	
<b>Example Nonresidential Capacity Fee</b>		
Buy-in Capacity Fee	\$27,468	
New Facility Fee	\$11,455	
Denitrification Fee	<u>\$15,562</u>	
Total Fee (1,000 gal/day avg day flow) [1]	\$54,485	
1 - \$12,804 x (1,000 gal/235 gal)		

Table 14 provides a comparison of the current and proposed capacity fees for residential customers. The combined water and wastewater capacity fee per EDU is proposed to increase from \$16,880 to \$18,084.

**Table 14: Current and Proposed Fee Comparison**  
**Water and Sewer Capacity Fee Study 2022**  
**Town of Discovery Bay Community Services District**

<b>Fees</b>	<b>Current</b>	<b>Proposed</b>	
Water Capacity Fee per EDU	\$4,850	\$5,233	Table 12
Wastewater Capacity Fee per EDU	<u>\$12,030</u>	<u>\$12,804</u>	Table 13
Total per EDU	\$16,880	\$18,037	

## 5.2 Implementation

Capacity fees are collected at the time of connection to the District's water and wastewater systems. To ensure continued adequate implementation of the fee, the District should:

- Maintain an annual Capital Improvement Program budget to indicate where fees are being expended to accommodate growth.
- Comply with the annual and five-year reporting requirements of Government Code 66000 et seq.
- Annually adjust capacity fees using an appropriate construction cost index. Capacity fees should be adjusted regularly to prevent them from falling behind the costs of constructing new facilities. The Engineering News Record ("ENR") magazine publishes Construction Cost Indices ("CCI") monthly for 20 major U.S. cities including San Francisco. These indices can be used to estimate the change in the construction cost of facilities, and the District's capacity fees should be adjusted annually by the change in the ENR CCI for San Francisco.



# Town of Discovery Bay

*"A Community Services District"*

## STAFF REPORT

**Meeting Date**

February 2, 2022

**Prepared By:** Mike Yeraka, Projects Manager  
**Submitted By:** Dina Breitstein, General Manager

### Agenda Title

Discussion Regarding Preliminary Traffic Control Plan for Waterline Replacement in Discovery Bay Boulevard.

### Recommended Action

- a. Discuss attached preliminary traffic control plan and provide input to Staff.

### Executive Summary

A 6" pipeline on Discovery Bay Blvd supplies water to the Lakeview Business Plaza for commercial service connections, fire hydrants, and irrigation services including the landscape at the Highway 4 entrance to Discovery Bay. The 6" pipeline is approximately 400 feet long and it dead-ends at the entrance to the business plaza. The pipeline is being replaced in response to several breaks that have occurred in recent years, which have indicated the pipeline is in poor condition and could cause water service interruptions to the commercial properties in the future. The replacement pipeline would be installed in a new location to maintain water service during the installation. All existing services on the existing 6" watermain will be identified and connected to the replacement pipeline.

1. The Town will soon be going out to bid to replace the waterline in Discovery Bay Blvd., between Clipper Drive and HWY 4. In order for the contractor to perform the work, they will need to close a portion of Discovery Bay Blvd. during working hours and redirect traffic as shown on the attached Preliminary Plan. The contractor will be required to prepare the final traffic control plan to submit to the County for final approval. Staff wanted to advise the Board of the anticipated traffic control plan that the contractor will be implementing and receive any input the Board may want to provide.

### Specific Committee Action:

- a. Discuss attached preliminary traffic control plan and provide input to Staff.

### Previous Relevant Board Actions for This Item

The Board approved the project and authorized Luhdorff & Scalmanini to prepare the design for replacing the waterline at the August 19, 2020, Board Meeting.

**Fiscal Impact:** Included in the \$590,000 project budget.

**Amount Requested:** N/A

**Sufficient Budgeted Funds Available?:** Yes

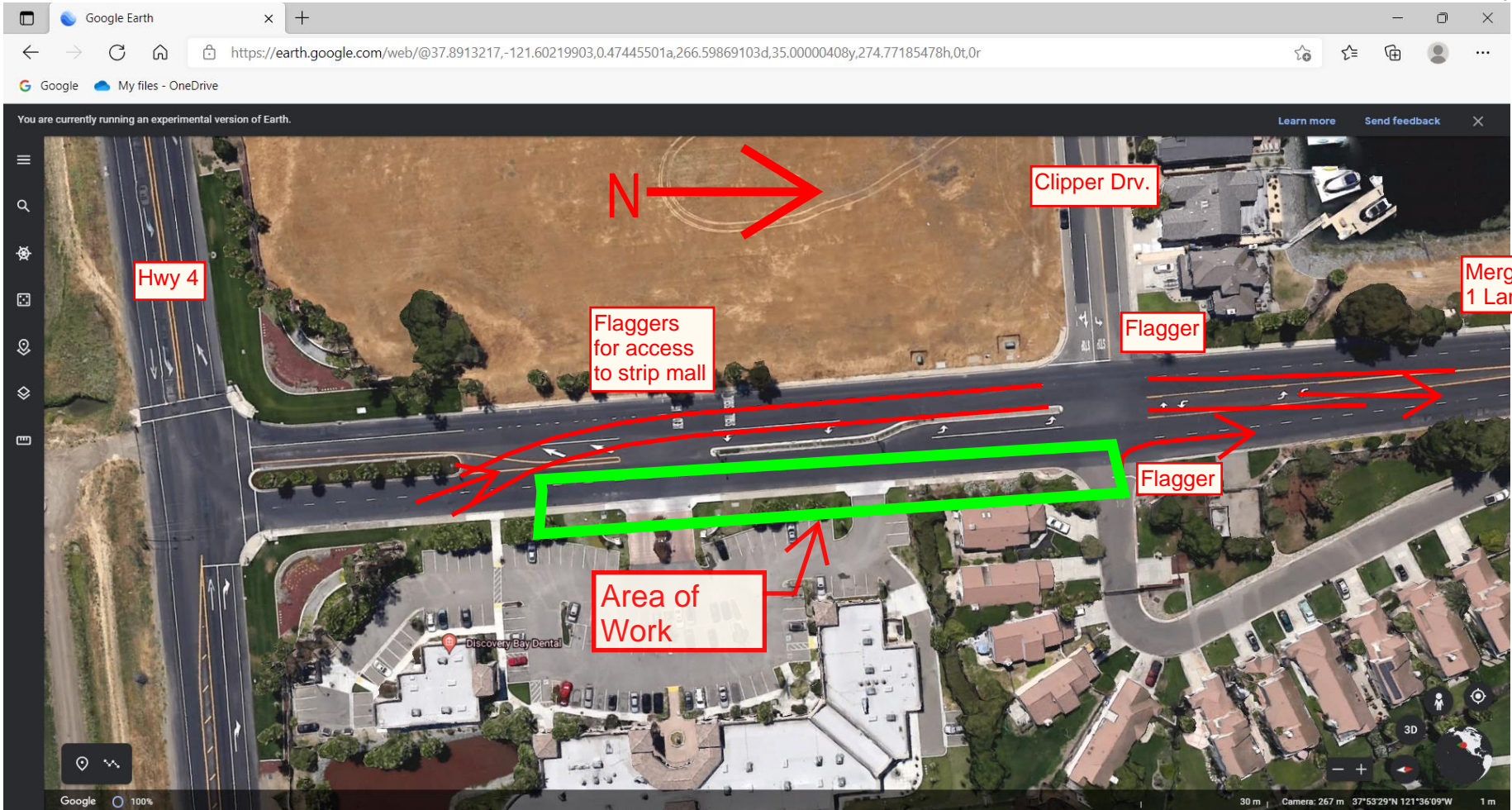
**Prog/Fund # Category:** TBD

**Attachment**

1. Preliminary Traffic Control Plan.

**AGENDA ITEM: E1**





Discovery Bay Blvd. Waterline Replacement Project  
Preliminary Traffic Control Plan 8:30am - 4:30pm Monday - Friday Only  
Anticipated Two - Three Week Duration  
For Discussion Purposes Only  
February 2, 2022



# ▶ Discover Bay

## Denitrification Progress Update 2-2-2022

Town of Discovery Bay

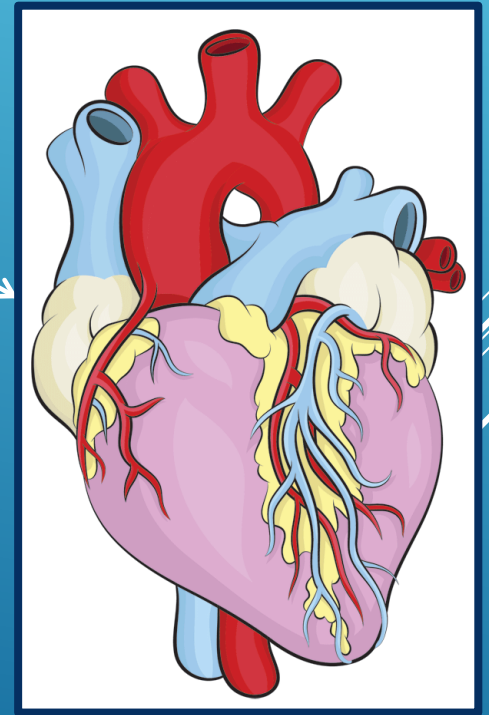
HERWIT Engineering

Anderson Pacific  
Engineering Constructors

2/2/2022



# DISCO BAY WWTP NO. 2



# DISCO BAY WWTP NO. 2





# PROJECT INFORMATION

- **Denitrification and Master Plan Upgrade Project**
- **Anderson Pacific Engineering Constructors**
- **Notice to Proceed: 6/14/2021**
- **Original Finish Date: 6/15/2023**
- **Current Finish Date: 7/7/2023**
- **New Permit Conditions Start 12/31/2023**
- **Contract Amount: \$ 15,994,000 (Low Bid by \$3.9M)**
- **Spent to Date: \$ 3,269,973.65**

# PROJECT CHALLENGES

- **Maintaining Existing Facilities in Service While Building New Facilities**
- **Extensive Bypassing Required**
- **Deep Excavations with High Ground Water**
- **COVID/Supply Chain Issues**
  - **Canceled Slide Gate Order**
  - **PVC Pipe Not Available**
  - **Pipe Fittings Not Available**
- **Plant No. 1 Rehabilitation Issues**

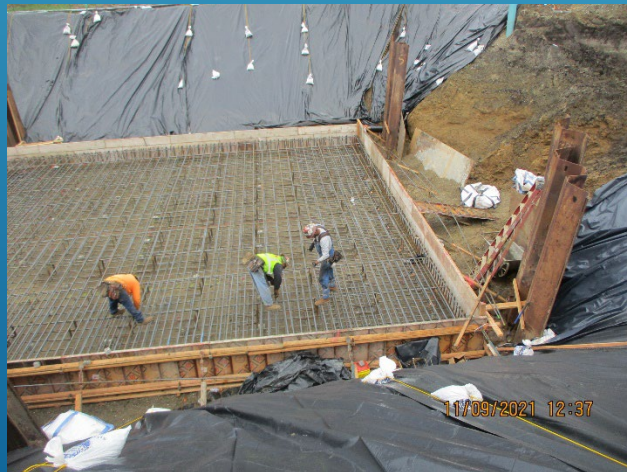
# PROJECT ELEMENTS

- **Plant No. 1**
  - **Repair Influent Pump Station**
  - **Repair Pump Station W**
  - **Install Piping Options for Maintenance**
- **Plant No. 2**
  - **Add Oxidation Ditch No. 4**
  - **Add Anoxic Basins No. 2, 3, 4**
  - **Add IMLR Pump Stations No. 2, 3, 4**
  - **Rehabilitate Headworks and Replace Bar Screens**
  - **Other Minor Improvements**

# PROJECT SURPRISES SO FAR

- **Plant No. 1 Strikes Again**
- **PS-W Had to be Abandoned**
- **COVID and Supply Chain Delays**
- **Heavy Rain November and December = Delays**
- **Water Line Broke and Flooded Anoxic Basin 5 feet deep = \$ and Delays**
- **Emergency Repairs To:**
  - **Rotor No. 3**
  - **Aerobic Digester**

# Anoxic Basin NO. 4

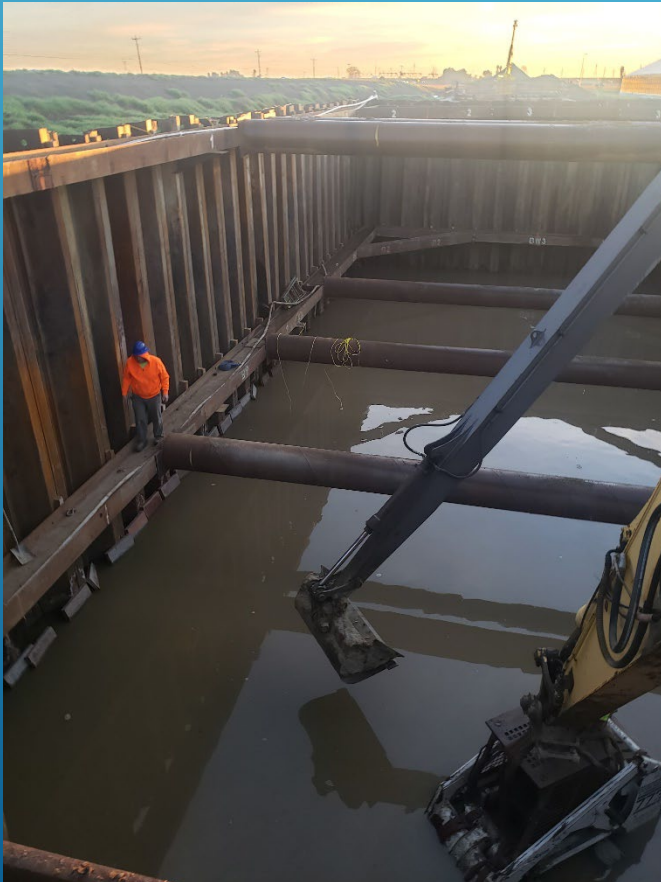




# OXIDATION DITCH NO. 4

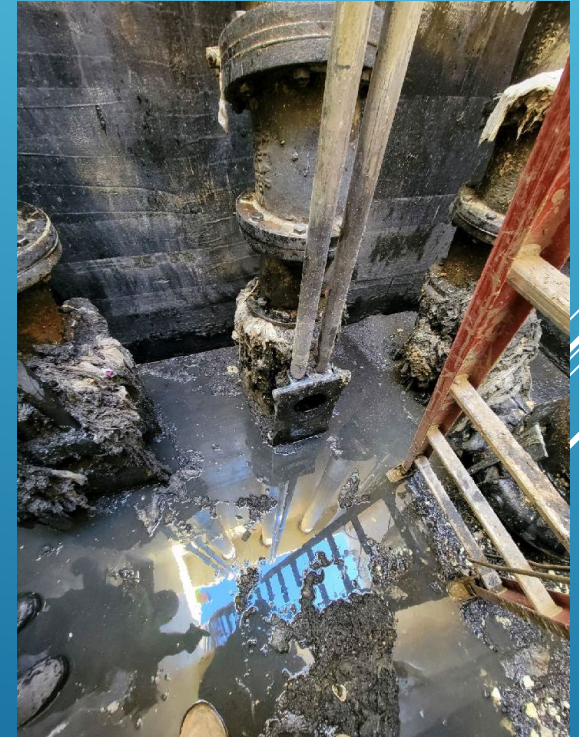
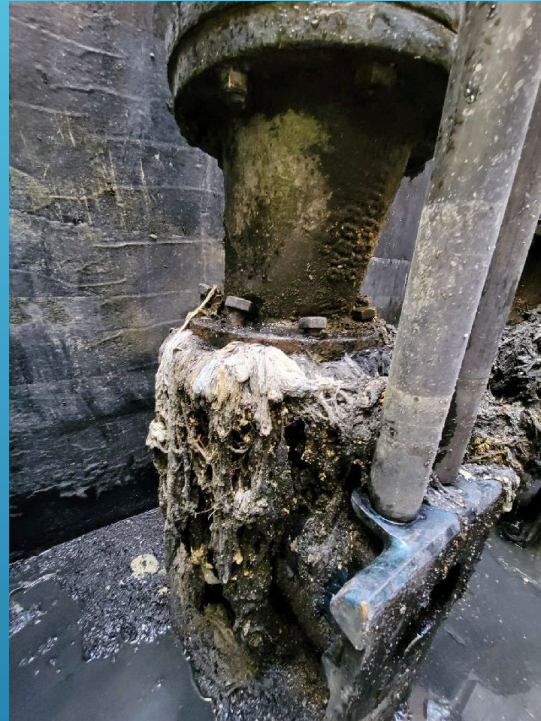


# Anoxic Basin NO. 3





# INFLUENT PUMP STATION





# ROTOR NO. 3 FAILURE



# AEROBIC DIGESTER REPAIR





# PS-W STRUCTURAL FAILURE

