



# **TOWN OF DISCOVERY BAY COMMUNITY SERVICES DISTRICT Water and Wastewater Rate Study**

**FINAL REPORT  
June 4, 2020**



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## SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY

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### 1.1 Background

The Town of Discovery Bay Community Services District (Town) provides water and wastewater service to about 6,200 customers. The Town last conducted a water and wastewater rate study in 2016 which provided a schedule of rate adjustments through FY2020/21. Instead of adopting the previously approved rates for FY2020/21, the Town has elected to conduct a new rate study spanning from FY2020/21 to FY2024/25. New regulations, including requirements for wastewater denitrification and water conservation, have prompted this rate update.

### 1.2 Requirements of Proposition 218

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIIC and XIID of the California Constitution. Proposition 218 establishes requirements for imposing any new or increasing any existing property-related fees and charges. For many years, there was no legal consensus on whether water and sewer service fees met the definition of “property-related fees.” In July 2007, the California Supreme Court essentially confirmed that Proposition 218 applies to water and wastewater service fees.

The Town must follow the procedural requirements of Proposition 218 for all utility rate increases. These requirements include:

1. **Noticing Requirement** – The Town must mail a notice of the proposed rate increases to all affected property owners or ratepayers. The notice must specify the amount of the fee, the basis upon which it was calculated, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
2. **Public Hearing** – The Town must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
3. **Rate Increases Subject to Majority Protest** – At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners or ratepayers submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established substantive requirements that apply to water and sewer rates and charges, including:

1. **Cost of Service** – Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the “cost of service”.
2. **Intended Purpose** – Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
3. **Proportional Cost Recovery** – The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.
4. **Availability of Service** – No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property.
5. **General Government Services** – No fee or charge may be imposed for general governmental services where the service is available to the public at large.

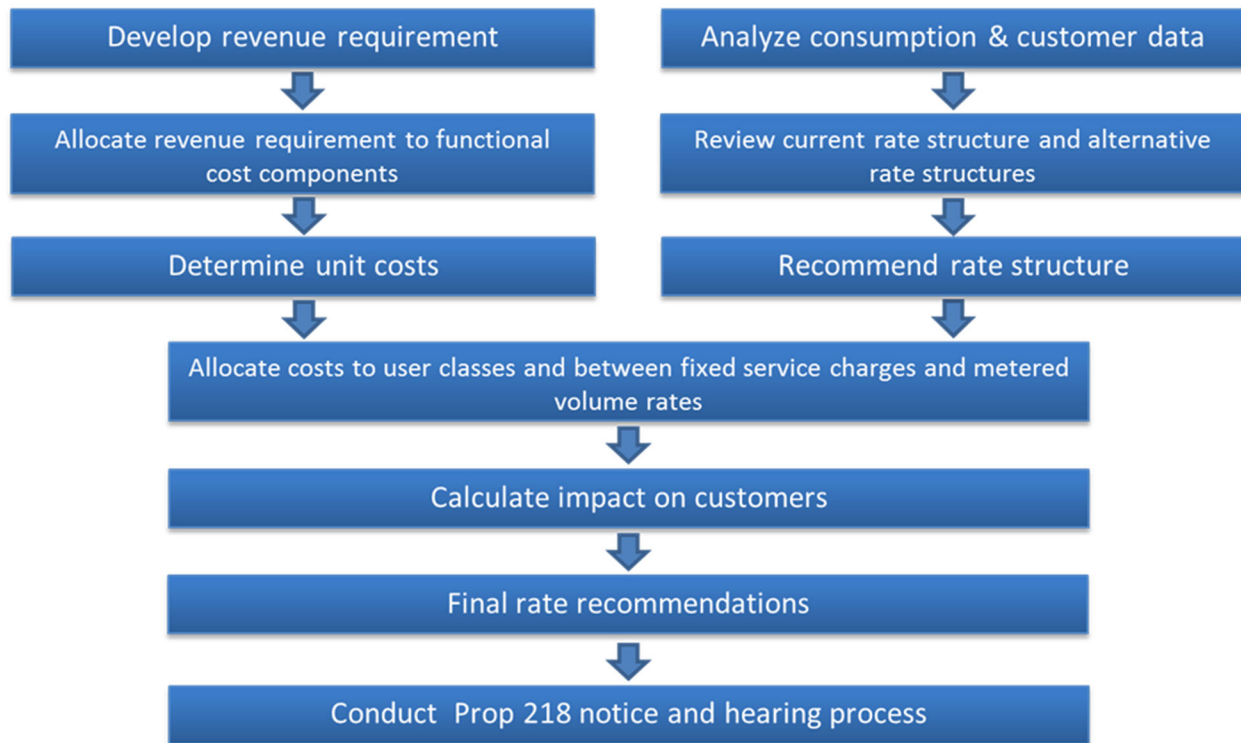
Charges for water, sewer, and refuse collection are exempt from additional voting requirements of Proposition 218, provided the charges do not exceed the cost of providing service and are adopted pursuant to the procedural requirements of Proposition 218.

### **1.3 Rate Study Process**

This section details the development of the Town’s water and wastewater rates via the Proposition 218 process as shown in the following figure.

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**Figure 1: Comprehensive Cost of Service Study Process**



The following is a brief description of the rate study process:

- **Revenue Requirements** - Revenue requirements are analyzed via financial plans developed from the Water and Wastewater Fund budgets. Based on the best information currently available, the financial plans incorporate projected operation and maintenance costs, capital expenditures, debt service, and growth to estimate annual revenue requirements. The plans serve as a roadmap for funding the Town's future operating and capital programs while maintaining long-term fiscal stability.
- **Cost of Service Allocation** - The cost of service process builds on the financial plan analysis and assigns water and wastewater system costs to functional cost components: *metering and customer service, commodity, and demand for water, and customer service and treatment/disposal for sewer.*
- **Rate Design** - Rate design involves developing a rate structure that proportionately recovers costs from customers. Final rate recommendations are designed to (a) fund the utilities' short- and long-term costs of providing service; (b) proportionately allocate costs to all customers and customer classes; and (c) comply with the substantive requirements of Proposition 218.

## 1.4 Proposed Rates and Bill Impacts

The findings and recommendations presented in this report were developed with substantial input from Town staff, the Finance Committee, and Board of Directors. The proposed water and wastewater rates are provided in Tables 1 and 2, respectively. Rate increases are proposed to go into effect July 1 of each year. For water service, the Town charges a fixed meter fee based on the size of the meter plus a volume rate billed to each 100 cubic feet (ccf) of water used. By December 2017, about half of the Town was transitioned from unmetered to metered service. Newly metered customers pay \$8.01 per month in addition to the other rates and charges. The meter installation fee is not proposed to change. For wastewater service, the Town bills residential customers an annual flat fee on the property tax roll. Commercial customers are billed volumetric wastewater rates based on estimated flow. Vacant parcels are charged a fee for the Town’s water and sewer utilities. The vacant parcel fees are not proposed to change over the next five years.

**Table 1: Current and Proposed Monthly Water Rates  
Town of Discovery Bay  
Water and Wastewater Rate Study**

	Current Meter Fee (\$/month)	PROPOSED				
		FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
Vacant	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Non-irrigation Account Charge:						
5/8"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
3/4"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
1"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
1 1/2"	\$39.16	\$40.08	\$40.78	\$41.50	\$42.24	\$42.98
2"	\$62.04	\$62.98	\$63.96	\$64.94	\$65.92	\$66.94
3"	\$123.06	\$124.56	\$126.10	\$127.64	\$129.20	\$130.80
4"	\$191.71	\$193.84	\$196.00	\$198.20	\$200.40	\$202.64
6"	\$382.43	\$386.30	\$390.22	\$394.18	\$398.18	\$402.22
Irrigation Account Charge:						
5/8"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
3/4"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
1"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
1 1/2"	\$36.87	\$37.12	\$37.38	\$37.64	\$37.90	\$38.18
2"	\$58.38	\$58.54	\$58.72	\$58.90	\$59.06	\$59.24
3"	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73
4"	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27
6"	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.266	\$2.340	\$2.405	\$2.479	\$2.577
Newly Metered Customers						
Meter Install Fee (10-year payback)	\$8.01	\$8.01	\$8.01	\$8.01	\$8.01	\$8.01

ccf = 100 cubic feet = 748 gallons

**Table 2: Current and Proposed Wastewater Rates and Charges**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

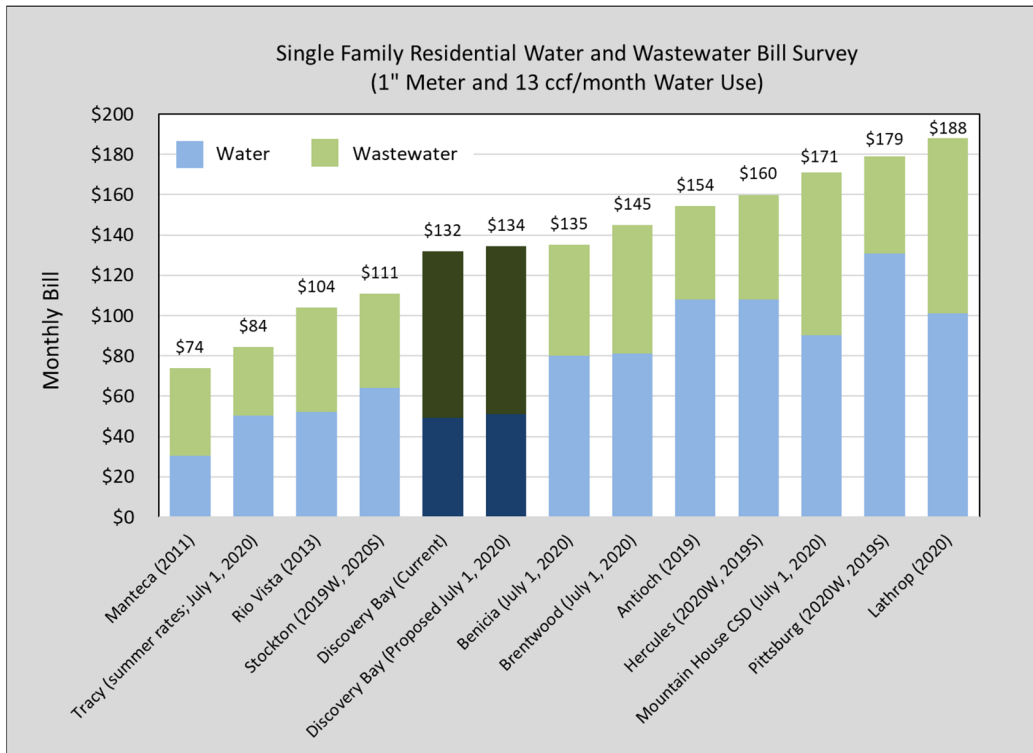
WASTEWATER	Current FY2019/20		Proposed FY2020/21		Proposed FY2021/22		Proposed FY2022/23		Proposed FY2023/24		Proposed FY2024/25	
	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)
<b>Residential Unmetered</b>												
Single Family - Each DU	\$82.55	\$990.63	\$83.34	\$1,000.08	\$84.59	\$1,015.08	\$85.86	\$1,030.32	\$87.15	\$1,045.80	\$88.46	\$1,061.52
Multiple Family/Condos - Each DU	\$61.92	\$743.03	\$63.89	\$766.68	\$65.92	\$791.04	\$68.01	\$816.12	\$70.17	\$842.04	\$72.40	\$868.80
Vacant	\$18.67	\$224.00	\$18.67	\$224.00	\$18.67	\$224.00	\$18.67	\$224.00	\$18.67	\$224.00	\$18.67	\$224.00
<b>Nonresidential Metered</b>	Use (\$/ccf)		Use (\$/ccf)		Use (\$/ccf)		Use (\$/ccf)		Use (\$/ccf)		Use (\$/ccf)	
Business/Government/Clubs	\$5.734		\$6.050		\$6.384		\$6.737		\$7.109		\$7.501	
Restaurants/Bars/Dining Facilities	\$16.793		\$17.337		\$17.899		\$18.479		\$19.078		\$19.696	
Schools	\$5.161		\$5.462		\$5.781		\$6.118		\$6.475		\$6.853	
Other Domestic Strength Users	\$5.734		\$6.050		\$6.384		\$6.737		\$7.109		\$7.501	

DU = Dwelling Unit

ccf = 100 cubic feet = 748 gallons



The typical monthly water use of a single family customer is 13 ccf per month and the most common residential meter size is 1". Based on these parameters, the Town's current typical combined utility bill (water and sewer) is \$131.95 per month. After the proposed increase, the typical combined residential bill would increase to \$134.26 per month, an increase of about 2%. As shown in the figure below, the Town's current and proposed bills are in the mid-range of utility bills charged by other local agencies.



## **SECTION 2: CURRENT RATES AND CUSTOMER BASE**

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This section provides an overview of the Town's current water and wastewater rates, customer base, water usage statistics, and current rate revenues.

### **2.1 Current Water Rates**

Customers are charged for water service based on the size of their water meter (ranging from 5/8" up to 6") and the type of service - non-irrigation (domestic) or irrigation. Domestic meter service fees are slightly higher than irrigation meter fees to account for domestic users receiving fire protection benefits. All customers are charged these fixed charges regardless of water consumption to reflect costs the Town incurs associated with maintaining each connection and meeting capacity requirements. The Town charges a uniform volume rate of \$2.257/ccf for all water consumption. Prior to 2017, approximately half the Town was unmetered and was billed a flat rate for water service. In December 2017, the Town completed its meter roll-out and all customers have since been transitioned to metered service. To fund the installation of meters, the Town issued revenue bonds in addition to expending available reserves. Meter installation costs are repaid via a \$8.01 monthly service fee charged to newly metered customers. The meter installation fee will span a total of ten years and is not proposed to change.

### **2.2 Water Usage Statistics and Customer Base**

Table 3 provides water usage statistics, billing data, and estimated revenues for the current year, FY2019/20. About 98.5% of revenues are generated from non-irrigation meters and 1.5% from irrigation meters. The majority of customers have 1" non-irrigation (domestic) meters, representing about 69% of the total customer base. The 1" meter is considered the standard meter in Discovery Bay and was the meter size provided to the newly metered customers in 2017. Less delinquency fees, the Town expects to collect about \$4.45 million in water rate revenue in FY2019/20, of which about 42% will be collected from fixed meter fees (including the meter installation fees) and 58% will be collected from volume rates.

Based on Town billing records, the current average monthly residential water use is 13 ccf per month, which equates to about 118 gallons per capita at 2.74 people per home. The 2016 rate study assumed average residential use of 15 ccf per month, which indicates a general downward trend of water consumption over the past four years. Based on a typical home with a 1" meter and 13 ccf of water use, the average water bill is currently \$49.40 per month.

**Table 3: Current FY2019/20 Water Service Charge Revenues  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Meter Size</b>	<b># of Meters</b>	<b>Monthly Fee</b>	<b>Meter Fee Annual Revenue</b>	<b>Estimated Annual Water Use (ccf)</b>	<b>Annual Water Use Fees</b>
Non-Irrigation			Metered Rate (\$/ccf)		\$2.257
5/8"	335	\$20.06	\$80,641		
3/4"	1,367	\$20.06	\$329,064		
1"	4,273	\$20.06	\$1,028,597		
1.5"	33	\$39.16	\$15,507		
2"	46	\$62.04	\$34,246		
3"	6	\$123.06	\$8,860		
4"	10	\$191.71	\$23,005		
6"	<u>0</u>	\$382.43	<u>\$0</u>		
Subtotal	6,070		\$1,519,921	959,298	\$2,165,000
Irrigation					
5/8"	4	\$18.92	\$908		
3/4"	0	\$18.92	\$0		
1"	15	\$18.92	\$3,406		
1.5"	25	\$36.87	\$11,061		
2"	34	\$58.38	\$23,819		
3"	2	\$115.73	\$2,778		
4"	7	\$180.27	\$15,143		
6"	<u>0</u>	\$359.54	<u>\$0</u>		
Subtotal	87		\$57,114	198,980	\$449,000
Meter Installation Fee (newly metered customers)					
	3,493	\$8.01	\$335,713		
Total Metered Customers					
	<b>6,157</b>		<b>\$1,912,748</b>	<b>1,158,278</b>	<b>\$2,614,000</b>
			<b>42%</b>		<b>58%</b>
<b>Unmetered Water</b>	<b># of Parcels</b>	<b>Monthly Fee</b>	<b>Total Annual Revenues</b>		
Vacant & Waterways	66	\$14.67	\$11,616		
			<b>Summary</b>		
		Metered	\$4,526,748		
		2% Delinquency	(\$91,000)		
		Vacant	<u>\$11,616</u>		
		<b>Total</b>	<b>\$4,447,364</b>		

## 2.3 Current Wastewater Rates

The Town's wastewater (sewer) utility provides service to about 6,100 single family, condominium (multiple family), and commercial parcels or accounts within the Town. Residential sewer customers are billed a flat annual fixed charge on a per dwelling unit basis collected on the annual property tax roll. Commercial customers are billed a volume wastewater rate based on estimated wastewater flow. There are four sub-categories of commercial wastewater customers: business/government/clubs, restaurants/bars/dining facilities, schools, and other domestic strength users. Current wastewater rates are provided in Table 4.

Table 4 also provides Wastewater Fund Revenues in FY2019/20 by rate category. The Town is projected to collect a total of about \$6 million in revenues from wastewater service charges. About \$5.9 million in revenues, or about 98%, is collected from fixed charges to residential and vacant parcel customers. Volumetric charges from commercial customers are estimated to generate about \$139,000, or about 2% of total wastewater rate revenue.

**Table 4: FY2019/20 Wastewater Service Charge Revenues  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Unmetered Wastewater</b>	<b>Number of Parcels</b>		<b>Annual Fee</b>	<b>Annual Revenues</b>
Single Family - Each DU	5,770		\$990.63	\$5,716,000
Multiple Family/Condos - Each DU	224		\$743.03	\$166,000
Vacant	<u>76</u>		\$224.00	<u>\$17,000</u>
<b>Subtotal</b>	6,070			<b>\$5,899,000</b>
<b>Metered Sewer</b>	<b>Number of Customers</b>	<b>Annual ccf</b>	<b>Rate \$/ccf</b>	<b>Annual Revenues</b>
Business/Government/Clubs	22	5,520	\$5.734	\$31,654
Restaurants/Bars/Dining Facilities	11	5,931	\$16.793	\$99,598
Schools	3	1,256	\$5.161	\$6,482
Other Domestic Strength Users	<u>2</u>	<u>251</u>	\$5.734	<u>\$1,441</u>
<b>Subtotal</b>	38	12,959		<b>\$139,175</b>
<b>FY2019/2020 Rate Revenues</b>				<b>\$6,038,175</b>

DU - dwelling unit

## SECTION 3: RESERVES

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Proposition 218 requires that utility rates be based on the reasonable cost of providing service to customers. The cost of service includes annual operating expenses, debt service payments, capital projects, and the accumulation of appropriate reserves. The Town maintains multiple operating and capital reserves, as summarized in Table 5. At the end of year FY2018/19, the Town is estimated to have approximately \$10.99 million in total utility reserves, with \$2.72 million allocated to water and \$8.27 million allocated to wastewater. Thus, the water utility comprises about 25% of total reserves, while the wastewater utility represents 75% of the total.

Reserves for each utility are divided between Operating Reserves, Emergency Reserves, and Infrastructure Replacement Funds. In general, the Town’s policy is to use reserves prudently to smooth cash flow and mitigate impacts to the ratepayers. Operating reserves are typically held at four months of operating expenses or greater. Operating reserves are intended to cover emergency operating costs and/or cover revenue shortfalls. The Town has infrastructure replacement reserves for general water and sewer improvements, pumps and motors, generators, and facilities and vehicles. The five-year rate plan proposed in this report uses excess operating and infrastructure replacement reserves to partially fund capital improvements through FY2024/25. The Town also maintains about \$3 million in emergency reserves. Emergency reserves are proposed to remain at their current level throughout the next five years.

**Table 5: End of Year FY2018/19 Reserves  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Reserves</b>	<b>FY2018/19 Estimate</b>	<b>Water</b>	<b>Wastewater</b>
Water & Wastewater Operating Reserves	\$5,142,601	\$755,828	\$4,386,773
Emergency Reserves	\$3,001,000	\$1,200,400	\$1,800,600
Sewer Infrastructure Replacement Fund	\$1,550,000	\$0	\$1,550,000
Pumps/Motors Replacement Fund	\$390,000	\$156,000	\$234,000
Water Infrastructure Replacement Fund	\$859,143	\$418,728	\$0
Generators Replacement Fund	\$175,000	\$70,000	\$105,000
Facilities & Vehicles Replacement Fund	\$310,852	\$117,426	\$193,426
<b>Operating Reserves Total</b>	<b>\$5,142,601</b>	<b>\$755,828</b>	<b>\$4,386,773</b>
<b>Emergency Reserves</b>	<b>\$3,001,000</b>	<b>\$1,200,400</b>	<b>\$1,800,600</b>
<b>Infrastructure Replacement Total</b>	<b>\$2,844,580</b>	<b>\$762,154</b>	<b>\$2,082,426</b>
<b>Total Reserves</b>	<b>\$10,988,181</b>	<b>\$2,718,382</b>	<b>\$8,269,799</b>

## SECTION 4: WATER COST OF SERVICE

This section summarizes the capital and operating expenses that make up the water utility’s cost of service.

### 4.1 Capital Improvement Plan

As part of the rate study process, the Town developed a capital improvement project list and determined a timeline and cost of each project. Major capital improvement projects are focused on water supply capacity and distribution/pipeline replacements. Additional projects include upgrades for existing water supply, master plans, additional distribution improvements, administration projects, and 40% of the cost of relocating the Town’s Office Building. Project costs are estimated as the current construction cost escalated by 3% annually to the year of construction. A summary of project costs through FY2024/25 is provided in Table 6.

**Table 6: Summary of Water Capital Projects  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Project Categories	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25	6-Year Total	% of Total
Distribution/Pipeline Replacements	400,000	1,465,200	530,500	819,500	1,125,500	1,738,900	6,079,600	43%
Water Supply Capacity	150,000	772,500	2,811,400	1,040,900	0	0	4,774,800	34%
Building Rehab or Relocation	60,000	164,800	1,103,300	0	0	0	1,328,100	9%
Upgrades for Existing Water Supply	483,000	360,500	231,300	0	225,100	0	1,299,900	9%
Master Plans	0	324,500	0	0	0	0	324,500	2%
Security/Cyber Security	48,000	61,800	0	0	0	0	109,800	1%
Vehicle & Equipment Purchases	36,000	16,500	0	0	0	0	52,500	0%
Additional Distribution Projects	0	25,800	26,500	0	0	0	52,300	0%
Total Projects	1,177,000	3,191,600	4,703,000	1,860,400	1,350,600	1,738,900	14,021,500	100%

### 4.2 Capital Cash Flow

The projects shown in Table 6 will be funded through a combination of reserves, capacity fees, rate revenues, and new debt. Table 7 lists the capital revenue sources through FY2024/25 in order of priority. The Town is projected to use about \$1.1 million in existing operating and capital fund reserves. The water utility has reserves beyond its minimum targets. These reserves were accumulated over time from service charge revenues and should be used judiciously for the benefit of the ratepayers. The Town is expected to experience growth over the next five years. For planning purposes, it is assumed that the Town will collect capacity fee revenues from approximately 10 new homes annually.<sup>1</sup> \$12.5 million of

<sup>1</sup> Capacity fee revenues can only be used to fund facilities that benefit growth. L&T did not conduct an independent evaluation to determine which projects are growth-related.

capital improvement funding is provided by rate revenues and new debt. At current rate revenues, the water utility generates positive net revenues which can be used to fund capital improvements and/or provide additional debt capacity. L&T worked closely with Town staff, the Finance Committee, and the Town’s bond underwriting team<sup>2</sup> to develop debt service estimates. This rate plan assumes the Town will fund \$4.5 million of project costs from rate revenues and \$8 million from new bonds.

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**Table 7: Water Capital Funding Sources  
Town of Discovery Bay  
Water and Wastewater Rate Study**

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Revenue Sources	
Existing Capital Reserves	\$114,100
Excess Operating Reserves	\$1,000,000
Capacity Fees	\$407,400
Rate Revenues	\$4,500,000
New Debt	<u>\$8,000,000</u>
Total Revenues	\$14,021,500
Total Capital Projects	\$14,021,500

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Table 8 provides water capital cash flows over the next five years. The current fiscal year (FY2019/20) assumes a transfer of \$1 million of revenue from the Operations Fund, representing excess revenues beyond its fund balance target of four months of expenses. It is anticipated that the Town will issue debt proceeds of \$8 million in FY2020/21. In FY2021/22 to FY2024/25, it is projected that the Operations Fund will provide transfers of \$1 million of rate revenues annually primarily to fund the long-term pipeline replacement program. By the end of FY2024/25, it is projected that the infrastructure replacement will be drawn down by about \$114,000 relative to the beginning balance in FY2019/20. The five-year rate plan assumes the emergency reserve of \$1.2 million will remain in place and will not be used to fund capital or operating costs.

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<sup>2</sup> The bond underwriting team was engaged by the Town independent from L&T’s involvement in the rate study. L&T did not provide municipal financial advisory services as defined by the Securities Exchange Commission or Municipal Securities Rulemaking Board. L&T projections include general, planning level debt service estimates provided by Brandis Tallman.

**Table 8: Water Capital Cash Flows**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

	<b>FY2019/20</b>	<b>FY2020/21</b>	<b>FY2021/22</b>	<b>FY2022/23</b>	<b>FY2023/24</b>	<b>FY2024/25</b>
Emergency Reserves	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400
Infrastructure Replacement	<u>762,000</u>	<u>749,900</u>	<u>6,106,800</u>	<u>2,452,300</u>	<u>1,640,400</u>	<u>1,338,300</u>
<b>Beginning Balance</b>	1,962,400	1,950,300	7,307,200	3,652,700	2,840,800	2,538,700
<b>Revenues</b>						
Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500	48,500
Transfer from Operating	1,000,000	500,000	1,000,000	1,000,000	1,000,000	1,000,000
New Debt Proceeds	<u>0</u>	<u>8,000,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Revenues</b>	1,164,900	8,548,500	1,048,500	1,048,500	1,048,500	1,048,500
<b>Capital Improvements</b>						
Water Supply Capacity						
Well 8	150,000	772,500	2,811,400	958,900	0	0
Well 5A Decommissioning	<u>0</u>	<u>0</u>	<u>0</u>	<u>82,000</u>	<u>0</u>	<u>0</u>
<b>Total Water Supply Capacity</b>	150,000	772,500	2,811,400	1,040,900	0	0
Upgrades for Existing Water Supply						
Well 4A Rehab	140,000	0	0	0	0	0
Well Rehab (Wells 1B, 2, 4A, 6)	0	257,500	0	0	225,100	0
Filter Repair (Newport & Willow)	118,000	103,000	231,300	0	0	0
Stabilization Soils- Willow Lake WTP	150,000	0	0	0	0	0
Upgrade Well 4A Piping	<u>75,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Existing Water Supply</b>	483,000	360,500	231,300	0	225,100	0
Distribution/Pipeline Replacements						
Mainline CIP Program Long-Term	0	0	530,500	819,500	1,125,500	1,738,900
Cathodic Protection	0	257,500	0	0	0	0
6 inch pipeline Lakeview Biz Park	0	298,700	0	0	0	0
Replace Underwater Crossing Laguna Ct	400,000	0	0	0	0	0
Edgeview St. Andrews /Clubhouse	0	309,000	0	0	0	0
Marina Underwater Crossing	<u>0</u>	<u>600,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Distribution/Pipeline Replacements</b>	400,000	1,465,200	530,500	819,500	1,125,500	1,738,900
Additional Distribution Improvements						
WTP spill containment curbing/diversion	0	25,800	0	0	0	0
Upgrade Hypo Tanks at WTP	<u>0</u>	<u>0</u>	<u>26,500</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Distribution/Pipeline Replacements</b>	0	25,800	26,500	0	0	0
Master Plans						
Water Master & Asset Management Plans	0	257,500	0	0	0	0
2020 Urban Water Management Plan	0	41,200	0	0	0	0
AWIA Emergency Plans	<u>0</u>	<u>25,800</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Master Plans</b>	0	324,500	0	0	0	0
Building Rehab or Relocation						
Island Building by Well 1B	60,000	0	0	0	0	0
Move District Main Office Building	<u>0</u>	<u>164,800</u>	<u>1,103,300</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Building Rehab/Relocation</b>	60,000	164,800	1,103,300	0	0	0
Vehicle & Equipment Purchases						
New Truck	16,000	16,500	0	0	0	0
Woodchipper or Firebox	<u>20,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Vehicle &amp; Equipment</b>	36,000	16,500	0	0	0	0
District Security						
Cyber Security	0	61,800	0	0	45,000	0
Phase 2	48,000	0	0	0	0	0
Phase 3	<u>0</u>	<u>61,800</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total District Security</b>	48,000	61,800	0	0	0	0
<b>Total Capital Improvements</b>	1,177,000	3,191,600	4,703,000	1,860,400	1,350,600	1,738,900
<b>Total Net Revenues</b>	(12,100)	5,356,900	(3,654,500)	(811,900)	(302,100)	(690,400)
<b>Ending Balance</b>	1,950,300	7,307,200	3,652,700	2,840,800	2,538,700	1,848,300



### **4.3 Operating Cash Flow**

The water fund operating cash flows beginning in FY2019/20 and spanning the next five years are provided in Table 9. The Town began FY2019/20 with an operating balance of \$756,000. The minimum fund balance target for the end of each subsequent year is based on four months of O&M expenses. This rate plan is intended to both maintain a balanced budget with positive net revenues and to meet the minimum fund balance target in each year. Rate increases of 1.75% annually over the five-year rate study period are proposed to fund capital projects, fund operating costs, fund debt service costs, maintain necessary debt service coverage, and maintain necessary fund reserves. 1.75% annual increases represent the water system average revenue increase. Not every customer will receive a rate increase equal to 1.75%. The rate change for individual customers will depend on customer meter sizes, service type (domestic or irrigation), and water use.

The Town's main revenue source for the Operations Fund is water rate revenues. Rate revenues are estimated at \$4.19 million in FY2019/20, making up 93.3% of total revenues. Rate revenue estimates also include projections for customer growth in each year. Major expenses include staffing, administration, utilities, and the service contract with Veolia Water. Most operating expenses are projected to increase 3% annually beginning in FY2021/22. Other expenses include debt service for the 2012 and 2017 bonds and new debt service estimated to begin in FY2021/22. The proposed issuance of \$8 million of new debt results in an estimated annual payment of \$491,000. The final debt service amount will be determined by the Town's underwriter. Currently, the Town maintains debt service coverage beyond the target of 1.25 times the annual debt service payment and has capacity to absorb new debt.

**Table 9: Water Operating Cash Flows**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
Beginning Operating Balance	\$756,000	\$1,533,000	\$2,366,600	\$2,192,800	\$1,946,700	\$1,685,500
Proposed Rate Revenue Increase		1.75%	1.75%	1.75%	1.75%	1.75%
<b>Revenues</b>						
Rate Revenue	4,191,000	4,264,000	4,339,000	4,415,000	4,492,000	4,571,000
New Customers	<u>20,000</u>	<u>26,600</u>	<u>33,300</u>	<u>40,000</u>	<u>46,900</u>	<u>54,100</u>
Rate Rev Subtotal	4,211,000	4,290,600	4,372,300	4,455,000	4,538,900	4,625,100
Less Delinquency (2%)	(91,000)	(85,000)	(87,000)	(88,000)	(90,000)	(91,000)
Vacant Parcel	12,000	12,000	12,000	12,000	12,000	12,000
Meter Reimbursements	336,000	336,000	336,000	336,000	336,000	336,000
Other & Misc	<u>22,000</u>	<u>27,000</u>	<u>27,000</u>	<u>27,000</u>	<u>27,000</u>	<u>27,000</u>
Total Revenues	4,490,000	4,580,600	4,660,300	4,742,000	4,823,900	4,909,100
% increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
<b>Operating Expenses</b>						
Admin & Inter Govt. & Board	334,000	451,000	465,000	479,000	493,000	508,000
Staffing & Consulting Serv	572,000	862,000	888,000	915,000	942,000	970,000
Meters Reading	88,000	93,000	96,000	99,000	102,000	105,000
Operations & Maint	331,000	424,000	437,000	450,000	464,000	478,000
SGMA Compliance	0	15,000	20,000	21,000	21,000	22,000
Utilities [1]	479,000	467,000	481,000	495,000	510,000	525,000
Service Contract [2]	<u>651,000</u>	<u>676,000</u>	<u>696,000</u>	<u>780,000</u>	<u>803,000</u>	<u>827,000</u>
Total Operating Expenses	2,455,000	2,988,000	3,083,000	3,239,000	3,335,000	3,435,000
Net Operating Revenues	2,035,000	1,592,600	1,577,300	1,503,000	1,488,900	1,474,100
<b>Debt Service</b>						
2012 Bonds Debt Service [3]	88,000	88,000	89,000	88,000	89,000	88,000
2017 Bonds Debt Service [3]	170,000	171,000	171,000	170,000	170,000	168,000
New Debt Service [4]	<u>0</u>	<u>0</u>	<u>491,100</u>	<u>491,100</u>	<u>491,100</u>	<u>491,100</u>
Total Debt Service	258,000	259,000	751,100	749,100	750,100	747,100
Debt Service Coverage	7.89	6.15	2.10	2.01	1.98	1.97
Total O&M + Debt	2,713,000	3,247,000	3,834,100	3,988,100	4,085,100	4,182,100
Total Net Revenues	1,777,000	1,333,600	826,200	753,900	738,800	727,000
Transfer to Capital	1,000,000	500,000	1,000,000	1,000,000	1,000,000	1,000,000
O&M Ending balance	1,533,000	2,366,600	2,192,800	1,946,700	1,685,500	1,412,500
Minimum balance target [5]	818,000	996,000	1,028,000	1,080,000	1,112,000	1,145,000

1 - Chemicals and electric

2 - Assumed increase in FY2023 due to Well #8 coming online

3 - Based on year ended December 1

4 - Estimate from Brandis Tallman

5 - 4 months O&M expenses

## SECTION 5: WATER COST ALLOCATION

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The revenue requirement detailed in the previous section determines the amount of revenue to be recovered from water rates. The cost of service allocation determines how revenues will be recovered from customers based on how they use the water system. Proposition 218 requires that agencies providing “property-related services” (including water utility service) set rates and charges that are based on the cost of providing those services.

### 5.1 Background

The American Water Works Association (AWWA) recommends two primary methods to classify costs among various customers: (1) the base-extra capacity method; and (2) the commodity-demand method. The commodity-demand method was selected for this study because the Town has a number of fixed, infrastructure costs related to meeting peak demand.

### 5.2 Cost Allocation

For this rate study, costs are allocated to the following categories: (a) *commodity costs*, (b) *demand costs*, (c) *metering costs and customer service*, and (d) *direct fire-protection costs*. *Commodity costs* are primarily costs that vary with water use, such as utilities (i.e. electricity for pumping) and operations and maintenance. A portion of Town overhead and administration, debt service, and capital costs that are associated with long-term stable demand are also attributed to the *commodity* category. *Demand costs* recover the costs of operations and facilities needed to meet the peak use, or demands, placed on the system. Demand costs include a portion of debt service and transfers to the capital fund. Infrastructure is designed, engineered, and operated to meet peak demand, so a portion of capital costs are attributed to the *demand* category. Debt service for the 2017 bonds is excluded from the cost allocation because it is directly funded through meter installation fees.

Costs are allocated between the *commodity* and *demand* categories based on an estimated peaking factor. The maximum month demand (August 2019) was 1.6 times the average monthly demand. About 38% of the *commodity/demand* split was allocated to demand based on the equation:  $(1.6 - 1)/1.6$ , where 1.6 represents peak month demand and 1.0 represents average month demand.

*Metering and customer service costs* include meter reading, maintenance of the meters, and fixed costs associated with serving customers, including answering customer inquiries, billing, and accounting expenses. *Direct fire protection costs* were not available and were thus estimated at 4% of the total revenue requirement. AWWA M1 manual provides several methodologies for estimating fire protection using max hour and max day peaking factors. Because max day and max hour peaking factors were not available, a historical method described by AWWA was used in which fire protection is estimated based on population served by the water system.

Table 10 provides the proposed cost allocation based on FY2020/21 operating costs and a five-year average of annual debt service and capital costs. Table 10 does not include an allocation of fire protection costs.

**Table 10: Water Cost Allocation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Category</b>	<b>FY2020/21 Estimated Costs</b>	<b>Commodity</b>	<b>Demand</b>	<b>Meters &amp; Cust. Service</b>
Operating Expenses				
Admin & Inter Govt. & Board	451,000	56%	34%	10%
Staffing & Consulting Serv	862,000	56%	34%	10%
Meter Reading	93,000	0%	0%	100%
Operations & Maint	424,000	62%	38%	0%
SGMA Compliance	15,000	62%	38%	0%
Utilities	467,000	100%	0%	0%
Service Contract	<u>676,000</u>	62%	38%	0%
Total Operating Expenses	2,988,000	1,899,146	864,554	224,300
Debt Service				
2012 Bonds Debt Service (5yr Avg)	88,000	62%	38%	0%
2017 Bonds Debt Service (5yr Avg)	NA			
New Debt Service (5yr Avg)	<u>393,000</u>	62%	38%	0%
Total Debt Service	481,000	300,000	181,000	0
Transfer to Capital (5yr Avg)	900,000	62%	38%	0%
		561,210	338,790	0
<b>Proposed Cost Allocation (does not include fire protection)</b>	<b>4,369,000</b>	<b>2,760,356</b>	<b>1,384,344</b>	<b>224,300</b>
		<b>63%</b>	<b>32%</b>	<b>5%</b>

### 5.3 Unit Costs

The average expenses in Table 10 are used to determine the cost allocation percentages for each rate category. The FY2020/21 water rate revenue requirement of \$4.26 million (i.e. the amount recovered from rates in FY2020/21 as shown in Table 9) is attributed to the rate categories from Table 10 with 4% allocated to the *fire protection* category (the other categories were reduced proportionally). The *commodity* category is allocated about 61% of the revenue requirement and is proposed to be recovered from the volume rate. Further discussion of volumetric rate design is provided in the subsequent section.

39% of the revenue requirement is proposed to be recovered from fixed charges from the *demand, meters and customer service, and fire protection* categories. AWWA guidelines recommend using meter

equivalents to assign capacity-related costs to larger meter sizes. Utility infrastructure is typically designed to meet peak demands associated with the maximum flow rate of each meter. The flow of larger meters compared to the 1" meter determines the meter equivalents. Meter equivalents for test year FY2020/21 are calculated in Table 12. The customer service revenue requirement is proposed to be recovered from each customer regardless of meter size.

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**Table 11: Water Fixed Unit Cost Calculation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>FY2020/21 Revenue Requirement</b>	<b>Commodity</b>	<b>Demand</b>	<b>Meters &amp; Cust. Service</b>	<b>Fire Protection</b>
\$4,264,000	\$2,586,256	\$1,297,031	\$210,153	\$170,560
[1]	61%	30%	5%	4%
		6,597 meter equiv	6,167 # of meters	6,336.6 non-irrigation meter equiv
		\$16.38 \$/meter equivalent/mo	\$2.84 \$/meter/mo	\$2.24 \$/domestic equivalent/mo

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1 - Fire protection was determined to be 4% of system revenues based on AWWA methodologies; the allocations to the other cost categories were reduced proportionally

**Table 12: Meter Equivalents for FY2020/21  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Meter Size</b>	<b># of Meters</b>	<b>Meter Ratio</b>	<b>Meter Equivalents</b>
Non-Irrigation			
5/8"	335	1.0	335.0
3/4"	1,367	1.0	1,367.0
1"	4,283	1.0	4,283.0
1.5"	33	2.0	66.0
2"	46	3.2	147.2
3"	6	6.4	38.4
4"	10	10.0	<u>100.0</u>
Subtotal Non-irrigation	6,080		6,336.6
Irrigation			
5/8"	4	1.0	4.0
3/4"	0	1.0	0.0
1"	15	1.0	15.0
1.5"	25	2.0	50.0
2"	34	3.2	108.8
3"	2	6.4	12.8
4"	7	10.0	<u>70.0</u>
Subtotal Irrigation	87		260.6
Total	6,167		6,597.2

## SECTION 6: WATER RATE DESIGN

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This section describes water rate design considerations for fixed meter charges and volume rates.

### 6.1 Meter Fee Calculation

Table 13 determines the total cost per meter equivalent consisting of the *demand* and *fire protection* unit costs from Table 11. The fire protection cost is omitted from the irrigation meter equivalent fee per Town policy.

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**Table 13: Monthly Meter Equivalent Charges**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

<b>Cost Category</b>	<b>Non-Irrigation Meter Equivalent</b>	<b>Irrigation Meter Equivalent</b>
Demand	\$16.38	\$16.38
Fire Protection	<u>\$2.24</u>	<u>NA</u>
Total (\$/meter equiv./mo)	\$18.62	\$16.38

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The meter equivalent fees from Table 13 are scaled by the meter ratios shown in Table 12. The customer service fee of \$2.84 per month is added to the meter equivalent fees to calculate the total fixed monthly fee. The total fixed monthly fee for a 1" domestic meter is \$21.46, see Table 14. Table 14 represents a first iteration of the water fixed charges. Due to cost allocation changes, some customers would receive meter fee reductions in FY2020/21 based on the first iteration, followed by increases in later years, see Table 15. To provide rate stability, meter fee adjustments for some customers are phased-in more gradually over the 5-year rate study period, see Table 16. For the water utility, rate smoothing has a de minimis impact on total rate revenues. The fees for irrigation customers with 3", 4", and 6" meters are not proposed to be adjusted over the next five years and are proposed to remain at their current amounts.

**Table 14: First Iteration Total FY2020/21 Fixed Water Charges  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Non-Irrigation Customers											
Meter Size	Ratio		Meter Equiv. Cost	=	Meter Equiv. Charge		Meter Equiv. Charge	+	Customer Service Charge	=	Total Fixed Monthly Fee FY2020/21
5/8"	1.0	X	\$18.62	=	\$18.62		\$18.62	+	\$2.84	=	\$21.46
3/4"	1.0	X	\$18.62	=	\$18.62		\$18.62	+	\$2.84	=	\$21.46
1"	1.0	X	\$18.62	=	\$18.62		\$18.62	+	\$2.84	=	\$21.46
1.5"	2.0	X	\$18.62	=	\$37.24		\$37.24	+	\$2.84	=	\$40.08
2"	3.2	X	\$18.62	=	\$59.58		\$59.58	+	\$2.84	=	\$62.42
3"	6.4	X	\$18.62	=	\$119.17		\$119.17	+	\$2.84	=	\$122.01
4"	10.0	X	\$18.62	=	\$186.20		\$186.20	+	\$2.84	=	\$189.04
6"	20.0	X	\$18.62	=	\$372.40		\$372.40	+	\$2.84	=	\$375.24

Irrigation Customers											
Meter Size	Ratio		Meter Equiv. Cost	=	Meter Equiv. Charge		Meter Equiv. Charge	+	Customer Service Charge	=	Total Fixed Monthly Fee FY2020/21
5/8"	1.0	X	\$16.38	=	\$16.38		\$16.38	+	\$2.84	=	\$19.22
3/4"	1.0	X	\$16.38	=	\$16.38		\$16.38	+	\$2.84	=	\$19.22
1"	1.0	X	\$16.38	=	\$16.38		\$16.38	+	\$2.84	=	\$19.22
1.5"	2.0	X	\$16.38	=	\$32.76		\$32.76	+	\$2.84	=	\$35.60
2"	3.2	X	\$16.38	=	\$52.42		\$52.42	+	\$2.84	=	\$55.26
3"	6.4	X	\$16.38	=	\$104.83		\$104.83	+	\$2.84	=	\$107.67
4"	10.0	X	\$16.38	=	\$163.80		\$163.80	+	\$2.84	=	\$166.64
6"	20.0	X	\$16.38	=	\$327.60		\$327.60	+	\$2.84	=	\$330.44



**Table 15: First Iteration of 5-year Schedule of Meter Fees  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Meter Sizes</b>	<b>Current</b>	<b>FY2020/21</b>	<b>FY2021/22</b>	<b>FY2022/23</b>	<b>FY2023/24</b>	<b>FY2024/25</b>
Non-Irrigation Account Charge:						
5/8"	\$20.06	\$21.46	\$21.84	\$22.23	\$22.62	\$23.02
3/4"	\$20.06	\$21.46	\$21.84	\$22.23	\$22.62	\$23.02
1"	\$20.06	\$21.46	\$21.84	\$22.23	\$22.62	\$23.02
1.5"	\$39.16	\$40.08	\$40.78	\$41.50	\$42.24	\$42.98
2"	\$62.04	\$62.42	\$63.52	\$64.64	\$65.78	\$66.94
3"	\$123.06	\$122.01	\$124.15	\$126.33	\$128.55	\$130.80
4"	\$191.71	\$189.04	\$192.35	\$195.72	\$199.15	\$202.64
6"	\$382.43	\$375.24	\$381.81	\$388.50	\$395.30	\$402.22
Irrigation Account Charge:						
5/8"	\$18.92	\$19.22	\$19.56	\$19.91	\$20.26	\$20.62
3/4"	\$18.92	\$19.22	\$19.56	\$19.91	\$20.26	\$20.62
1"	\$18.92	\$19.22	\$19.56	\$19.91	\$20.26	\$20.62
1.5"	\$36.87	\$35.60	\$36.23	\$36.87	\$37.52	\$38.18
2"	\$58.38	\$55.26	\$56.23	\$57.22	\$58.23	\$59.25
3"	\$115.73	\$107.67	\$109.56	\$111.48	\$113.44	\$115.43
4"	\$180.27	\$166.64	\$169.56	\$172.53	\$175.55	\$178.63
6"	\$359.54	\$330.44	\$336.23	\$342.12	\$348.11	\$354.21

Note: shaded fees represent first iteration fees

**Table 16: Proposed 5-year Schedule of Meter Fees  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Meter Sizes	Current	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25	Increase %
Non-Irrigation Account Charge:							
5/8"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02	[1]
3/4"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02	[1]
1"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02	[1]
1.5"	\$39.16	\$40.08	\$40.78	\$41.50	\$42.24	\$42.98	[1]
2"	\$62.04	\$62.98	\$63.96	\$64.94	\$65.92	\$66.94	1.53%
3"	\$123.06	\$124.56	\$126.10	\$127.64	\$129.20	\$130.80	1.23%
4"	\$191.71	\$193.84	\$196.00	\$198.20	\$200.40	\$202.64	1.12%
6"	\$382.43	\$386.30	\$390.22	\$394.18	\$398.18	\$402.22	1.01%
Irrigation Account Charge:							
5/8"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62	1.74%
3/4"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62	1.74%
1"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62	1.74%
1.5"	\$36.87	\$37.13	\$37.38	\$37.64	\$37.90	\$38.18	0.70%
2"	\$58.38	\$58.54	\$58.72	\$58.90	\$59.06	\$59.24	0.30%
3"	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73	[2]
4"	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27	[2]
6"	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54	[2]

1 - FY2020/21 increase varies based on cost allocation; FY2021/22 through FY2024/25 annual increases are approximately 1.75% (minor variances due to rounding)

2 - Fee is not proposed to be adjusted

## 6.2 Proposed Volume Rates

The proposed volume rates are calculated in Table 17; the revenue allocated to the *commodity* category is divided by projected water use in ccf. For FY2020/21, approximately \$2.6 million is allocated to the *commodity* category, as shown in Table 10. The revenue requirement is proposed to increase by 1.75% per year through FY2024/25. Water use from FY2020/21 to FY2024/25 is based on current consumption that is reduced over time. Senate Bill 606 and Assembly Bill 1668 require water purveys to reduce indoor, residential water use from 55 gallons per person per day to an ultimate target of 50 gallons per person per day by 2030. Enforcement actions begin in 2027. The Town of Discovery Bay's current indoor residential water use is about 80 gallons per person per day. This rate study assumes a reduction to 70 gallons per person per day by 2025 (the fifth year of the rate study) with no reductions to residential outdoor demand or non-residential demand. Although 70 gallons of per capita indoor use is in excess of state targets, it is anticipated that the Town will implement more significant conservation measures in 2025 that will be incorporated into future rate studies.

**Table 17: Water Volume Rate Calculation**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

	<b>Current</b>					
	<b>FY2019/20</b>	<b>FY2020/21</b>	<b>FY2021/22</b>	<b>FY2022/23</b>	<b>FY2023/24</b>	<b>FY2024/25</b>
Rate Revenue Increase			1.75%	1.75%	1.75%	1.75%
Commodity Revenue	\$2,614,000	\$2,586,256	\$2,631,516	\$2,677,567	\$2,724,425	\$2,772,102
Total ccf	1,158,278	1,141,291	1,124,552	1,113,476	1,099,091	1,075,796
Rate (\$/ccf)	\$2.257	\$2.266	\$2.340	\$2.405	\$2.479	\$2.577
% increase in rate		0.41%	3.26%	2.76%	3.08%	3.95%

### 6.3 Proposed 5-Year Schedule of Rates

The proposed 5-year water rate schedule is provided in Table 18. The vacant parcel charge and the meter install fee are proposed to remain the same over the next five years.

**Table 18: Current and Proposed Monthly Water Rates  
Town of Discovery Bay  
Water and Wastewater Rate Study**

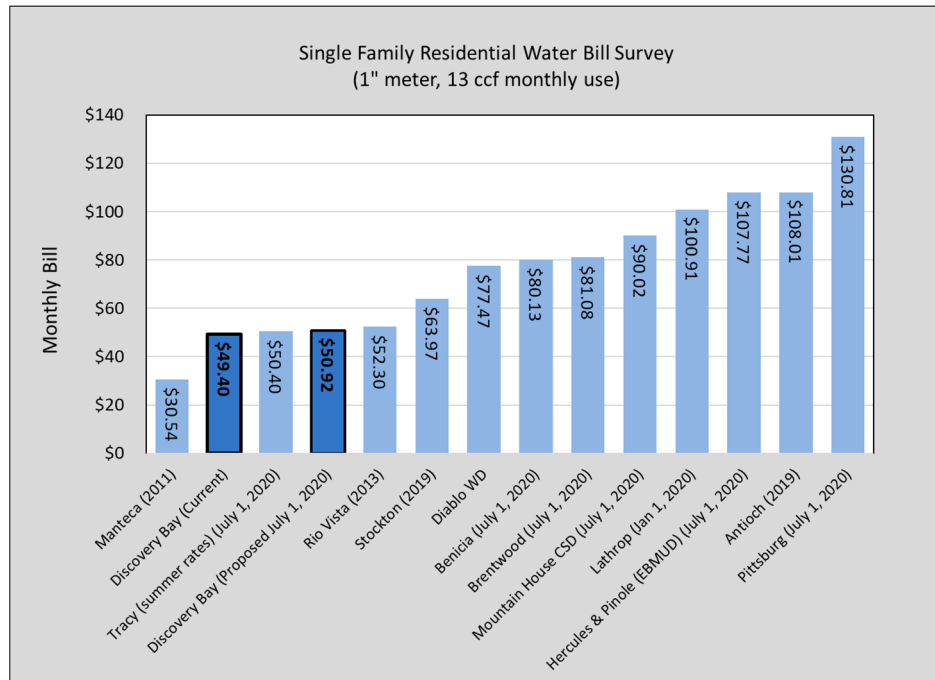
	Current Meter Fee (\$/month)	PROPOSED				
		FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
Vacant	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Non-irrigation Account Charge:						
5/8"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
3/4"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
1"	\$20.06	\$21.46	\$21.84	\$22.22	\$22.62	\$23.02
1.5"	\$39.16	\$40.08	\$40.78	\$41.50	\$42.24	\$42.98
2"	\$62.04	\$62.98	\$63.96	\$64.94	\$65.92	\$66.94
3"	\$123.06	\$124.56	\$126.10	\$127.64	\$129.20	\$130.80
4"	\$191.71	\$193.84	\$196.00	\$198.20	\$200.40	\$202.64
6"	\$382.43	\$386.30	\$390.22	\$394.18	\$398.18	\$402.22
Irrigation Account Charge:						
5/8"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
3/4"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
1"	\$18.92	\$19.24	\$19.58	\$19.92	\$20.26	\$20.62
1.5"	\$36.87	\$37.12	\$37.38	\$37.64	\$37.90	\$38.18
2"	\$58.38	\$58.54	\$58.72	\$58.90	\$59.06	\$59.24
3"	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73	\$115.73
4"	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27	\$180.27
6"	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54	\$359.54
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.266	\$2.340	\$2.405	\$2.479	\$2.577
Newly Metered Customers Meter Install Fee (10-year payback)						
	\$8.01	\$8.01	\$8.01	\$8.01	\$8.01	\$8.01

ccf = 100 cubic feet = 748 gallons

## 6.4 Bill Impacts

The average single family residential customer in the Town of Discovery Bay uses 13 ccf of water monthly and is served by a 1" meter. Currently, the average monthly bill is \$49.40 and will increase to \$50.92 under the FY2020/21 proposed rates, assuming no water conservation. If residential customers reduce indoor water use to 70 gallons per capita, as estimated in this report, the increase in the typical bill each year will more closely align with the 1.75% annual systemwide increase.

The figure below compares the Town's current and proposed typical water bills with the bills of other local agencies. Even with the proposed FY2020/21 increase, the Town's water bill will remain on the low-end of surveyed agencies.



## SECTION 7: WASTEWATER REVENUE REQUIREMENT

Similar to the water utility, the wastewater utility’s cost of service and revenue requirement is comprised of operating costs, capital costs, debt service obligations, and the need to maintain reasonable emergency reserves.

### 7.1 Capital Improvement Plan

The wastewater utility is a capital-intensive enterprise. Through FY2024/25, the Town expects to fund \$19.6 million in capital improvements, see Table 19. Of this total, about \$9.6 million represents costs to construct new denitrification facilities to comply with regulations. The Town also expects to fund \$4.5 million to refurbish Wastewater Treatment Plant #1. The wastewater utility is also responsible for 60% of the cost to relocate the Office Building.

**Table 19: Summary of Wastewater Capital Projects**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

Project Categories	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25	6-Year Total	% of Total
Denitrification	383,400	440,000	4,265,100	4,466,200	0	0	9,554,700	49%
WWTP Plant 1 Refurbishment	192,100	183,500	3,707,500	390,200	0	0	4,473,300	23%
Building Rehab or Relocation	90,000	247,200	1,655,000	0	0	0	1,992,200	10%
Additional Projects & Maint.	640,000	113,300	244,000	245,900	148,600	0	1,391,800	7%
Other Master Plan Projects	0	0	0	0	202,600	419,600	622,200	3%
Clarifier Rehab	5,000	5,200	159,100	0	336,500	0	505,800	3%
Lift Stations	0	154,500	212,200	0	0	0	366,700	2%
Security/Cyber Security	72,000	185,400	0	0	67,500	0	324,900	2%
Mainline Piping Replacement	0	0	0	0	281,400	0	281,400	1%
Vehicle & Equipment Purchases	<u>54,000</u>	<u>24,700</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>78,700</u>	<u>0%</u>
Total Projects	1,436,500	1,353,800	10,242,900	5,102,300	1,036,600	419,600	19,591,700	100%

Table 20 lists capital revenue sources through FY2024/25 in order of priority. The Town is projected to use \$3.5 million in existing operating and capital fund reserves. As shown in Table 5, the wastewater utility has ample reserves beyond its minimum targets. These reserves were accumulated from service charge revenues and should be used judiciously for the benefit of the ratepayers. The Town is expected to experience growth over the next five years. For planning purposes, it is assumed that the Town will collect capacity fee revenues from approximately 10 new homes annually.<sup>3</sup> \$15.2 million of capital improvement funding is provided by rate revenues and new debt. This rate plan assumes the Town will fund \$5.2 million of projects from rate revenues and \$10 million from new bonds.

<sup>3</sup> Capacity fee revenues can only be used to fund facilities that benefit growth. L&T did not conduct an independent evaluation to determine which projects are growth-related.

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**Table 20: Wastewater Capital Funding Sources through FY2024/25  
Town of Discovery Bay  
Water and Wastewater Rate Study**

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Revenue Sources		
Existing Capital Reserves	\$121,800	1%
Excess Operating Reserves	\$3,500,000	18%
Capacity Fees	\$769,900	4%
Rate Revenues	\$5,200,000	27%
New Debt	<u>\$10,000,000</u>	<u>51%</u>
Total Revenues	\$19,591,700	100%
Total Capital Projects	\$19,591,700	

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## 7.2 Capital Cash Flows

Table 21 provides the wastewater capital fund cash flows over the next five years. The projected costs and timeline of each project were determined by the Town as part of the capital improvement plan. Major projects include denitrification and the Wastewater Treatment Plant 1 Refurbishment. The Operations Fund is expected to make transfers to the Capital Improvements Fund to help cover expenses for these major projects. Projects will also be funded from available revenues, including capacity fee revenues and capital reserves.

The current fiscal year (FY2019/20) assumes a transfer of \$3.5 million of revenue from the Operations Fund, representing excess revenues beyond its fund balance target of four months of expenses. It is anticipated that the Town will issue debt proceeds of \$10 million in FY2020/21 to smooth its capital cash flows and resulting rate impacts. In FY2021/22 to FY2024/25, it is anticipated that the Operations Fund will provide transfers of \$1 million to \$1.1 million of rate revenues annually. By the end of FY2024/25, it is projected that the infrastructure replacement reserve will be drawn down by about \$122,000 relative to the beginning balance in FY2019/20. The five-year rate plan assumes the emergency reserve of \$1.8 million will remain in place and will not be used to fund capital or operating costs.

**Table 21: Wastewater Capital Cash Flows**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
Emergency Reserves	1,800,600	1,800,600	1,800,600	1,800,600	1,800,600	1,800,600
Infrastructure Replacement	<u>2,082,400</u>	<u>4,314,300</u>	<u>14,080,800</u>	<u>4,958,200</u>	<u>976,200</u>	<u>1,159,900</u>
<b>Beginning Balance</b>	3,883,000	6,114,900	15,881,400	6,758,800	2,776,800	2,960,500
<b>Revenues</b>						
Capacity Fees (\$12,030/EDU)	168,400	120,300	120,300	120,300	120,300	120,300
Transfer from Operating	3,500,000	1,000,000	1,000,000	1,000,000	1,100,000	1,100,000
New Debt Proceeds	<u>0</u>	<u>10,000,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Revenues</b>	3,668,400	11,120,300	1,120,300	1,120,300	1,220,300	1,220,300
<b>Capital Improvements</b>						
WWTP Plant 1 Refurbishment	192,100	183,500	3,707,500	390,200	0	0
Denitrification	383,400	440,000	4,265,100	4,466,200	0	0
<b>Lift Stations</b>						
Lift Stations J, S, H	0	154,500	0	0	0	0
Lift Stations A, C, D, E	<u>0</u>	<u>0</u>	<u>212,200</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Lift Stations</b>	0	154,500	212,200	0	0	0
<b>Clarifier Rehab</b>						
Plant 2 Clarifier #3 Rehabilitation	5,000	5,200	148,500	0	0	0
Clarifier 1 & 2 RAS Pump and Check Valves	0	0	0	0	336,500	0
Clarifier #4 Repair (cement)	<u>0</u>	<u>0</u>	<u>10,600</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Clarifier Rehab</b>	5,000	5,200	159,100	0	336,500	0
<b>Additional Projects and Maintenance</b>						
Plant 2 RAS & WAS Pumping System	25,000	0	0	0	148,600	0
Replace Lagoon Dredge & Conduits	0	113,300	0	0	0	0
CCTV Van (portable and push camera)	70,000	0	0	0	0	0
Install Screen Headworks at Plant #2	25,000	0	0	245,900	0	0
Minor Rehab to Piping at Plant #1	20,000	0	244,000	0	0	0
Outfall Diffuser Repairs	<u>500,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Additional Projects and Maintenance</b>	640,000	113,300	244,000	245,900	148,600	0
<b>Other Master Plan Projects</b>						
Emergency Storage Drain to Pump Sta. W	0	0	0	0	0	86,900
Solids Handling Improvements	0	0	0	0	0	208,700
WAS Pumps and Check Valves	0	0	0	0	0	124,000
Collection System Pump Stations	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>202,600</u>	<u>0</u>
<b>Total Other Master Plan Projects</b>	0	0	0	0	202,600	419,600
Mainline Piping Replacement	0	0	0	0	281,400	0
<b>Building Rehab or Relocation</b>						
Island Building by Well 1B	90,000	0	0	0	0	0
Move District Main Office Building	<u>0</u>	<u>247,200</u>	<u>1,655,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Relocation</b>	90,000	247,200	1,655,000	0	0	0
<b>Vehicle &amp; Equipment Purchases</b>						
New Truck	24,000	24,700	0	0	0	0
Woodchipper or Firebox	<u>30,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Vehicle &amp; Equipment</b>	54,000	24,700	0	0	0	0
<b>District Security</b>						
Cyber Security	0	92,700	0	0	67,500	0
Phase 2	72,000	0	0	0	0	0
Phase 3	<u>0</u>	<u>92,700</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total District Security</b>	72,000	185,400	0	0	67,500	0
<b>Total Capital Improvements</b>	1,436,500	1,353,800	10,242,900	5,102,300	1,036,600	419,600
<b>Total Net Revenues</b>	2,231,900	9,766,500	(9,122,600)	(3,982,000)	183,700	800,700
<b>Ending Balance</b>	6,114,900	15,881,400	6,758,800	2,776,800	2,960,500	3,761,200



### 7.3 Operating Cash Flows

Table 22 provides the wastewater fund operating cash flow, including rate and non-rate revenues, operating costs, debt service costs, and transfers to the capital fund. The Town began FY2019/20 with an operating balance of \$4.39 million. The minimum fund balance target for the end of each year is based on four months of O&M expenses.

In FY2019/20, the Town estimates about \$6.3 million will be collected in total year-end revenues, with rate revenues making up about \$6 million (including vacant service fees). Over \$200,000 annually is collected from zone reimbursement revenues and about \$17,000 annually is collected from miscellaneous service fees, such as permits, inspections, etc.

For FY2019/20, operating expenses are estimated at \$2.77 million. Major costs include administration, staffing, operations, and utilities. Operating expenses are projected to increase to about \$4.16 million over the next 5 years. Expenses projected from FY2021/22 onward are based on the FY2021/22 expenses escalated by 3% annually. The Town's service contract cost with Veolia Water was estimated by staff. Based on planned improvements to Plant 1 and operations associated with the denitrification project, the Town expects cost of the service contract to increase beyond the rate of inflation. The Operations Fund also pays the cost of the annual debt service of about \$1.1 million for the 2012 and the 2017 bonds.

Currently, the Wastewater Operations Fund is in good financial health and is generating positive net revenues, estimated at about \$2.4 million for FY2019/20. The Town's financial strategy for the sewer utility is to generate enough revenues to fund capital improvements through a combination of debt and cash on hand. The net operating revenues will be used to maintain reserves and to partially fund capital improvements over the next five years.

In order to support a borrowing of \$10 million in FY2020/21 and to cash fund smaller capital improvements, it is recommended that rate revenues increase by 1.5% annually over the next five years. This rate plan maintains operating reserves in excess of the target of four months of operating expenses. Due to the refurbishment of Plant 1, future operating costs could fluctuate. These additional reserves provide financial security should operating costs exceed the estimates provided herein.

**Table 23: Wastewater Operating Cash Flows**  
**Town of Discovery Bay**  
**Water and Wastewater Rate Study**

	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
<b>Beginning balance</b>	\$4,387,000	\$3,326,400	\$3,788,200	\$3,678,300	\$3,595,200	\$3,435,700
Proposed Rate Revenue Increase		1.50%	1.50%	1.50%	1.50%	1.50%
<b>Revenues</b>						
Wastewater service						
Zone Reimbursement Revenues	243,000	243,000	243,000	243,000	243,000	243,000
Other & Misc	17,300	17,300	17,300	17,300	17,300	17,300
Rate Revenues (less vacant)	6,021,200	6,111,500	6,203,200	6,296,200	6,390,600	6,486,500
Phase-in of rates [1]	0	(25,000)	(19,000)	(12,000)	(5,000)	0
New Customers	13,900	24,000	34,500	45,300	56,500	67,900
Vacant	<u>17,000</u>	<u>17,000</u>	<u>17,000</u>	<u>17,000</u>	<u>17,000</u>	<u>17,000</u>
<b>Total revenues</b>	6,312,400	6,387,800	6,496,000	6,606,800	6,719,400	6,831,700
% increase in expenses			3.0%	3.0%	3.0%	3.0%
<b>Expenses</b>						
Operating Expenses						
Admin & Inter Govt. & Board	332,000	450,000	450,000	464,000	478,000	492,000
Staffing & Consulting Serv	593,000	1,090,000	1,090,000	1,090,000	1,090,000	1,090,000
Operations & Maint	334,000	538,000	554,000	571,000	588,000	606,000
Utilities	536,000	673,000	693,000	714,000	735,000	757,000
Service Contract	<u>977,000</u>	<u>1,075,000</u>	<u>1,107,000</u>	<u>1,140,000</u>	<u>1,175,000</u>	<u>1,210,000</u>
Total Operating Expenses	2,772,000	3,826,000	3,894,000	3,979,000	4,066,000	4,155,000
Net Operating Revenues	3,540,400	2,561,800	2,602,000	2,627,800	2,653,400	2,676,700
Debt Service						
2012 Bonds Debt Service [2]	741,000	743,000	744,000	740,000	745,000	743,000
2017 Bonds Debt Service [2]	360,000	357,000	354,000	357,000	354,000	355,000
New Debt [3]	<u>0</u>	<u>0</u>	<u>613,900</u>	<u>613,900</u>	<u>613,900</u>	<u>613,900</u>
Total Debt Service	1,101,000	1,100,000	1,711,900	1,710,900	1,712,900	1,711,900
Debt Service Coverage	3.22	2.33	1.52	1.54	1.55	1.56
<b>Total Expenses</b>	3,873,000	4,926,000	5,605,900	5,689,900	5,778,900	5,866,900
<b>Net Revenues</b>	2,439,400	1,461,800	890,100	916,900	940,500	964,800
<b>Transfer to Capital Fund</b>	3,500,000	1,000,000	1,000,000	1,000,000	1,100,000	1,100,000
<b>O&amp;M Ending Balance</b>	3,326,400	3,788,200	3,678,300	3,595,200	3,435,700	3,300,500
<b>O&amp;M Minimum Target [4]</b>	924,000	1,275,000	1,298,000	1,326,000	1,355,000	1,385,000

1 - Deduction for rate smoothing for a subset of customers; see Section 9.5

2 - Based on year ended December 1

3 - Estimated by Brandis Tallman

4 - 4 months O&M expenses

## SECTION 8: WASTEWATER COST ALLOCATION

To fairly recover costs from customers, a wastewater cost allocation was conducted, see Table 24. Operating, debt service, and capital expenses were allocated to *customer service* and *treatment/disposal* cost categories. The *customer service* category is intended to recover costs associated with general utility management and administration that do not vary significantly with the amount of wastewater discharged into the sewer system. The *treatment/disposal* category recovers costs more closely associated with operations, maintenance, and infrastructure. *Treatment/disposal* costs are attributed to customers based on their flows and wastewater strength.<sup>4</sup> In total, about 34% of wastewater utility costs are related to customer service and administration. About 66% of costs are related to sewer treatment and disposal.

**Table 24: Wastewater Cost Allocation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Cost</b>	<b>FY2020/21 Estimated Costs</b>	<b>Customer Service/Admin</b>	<b>Treatment and Disposal</b>
Operating Expenses			
Admin & Inter Govt. & Board	450,000	100%	0%
Staffing & Consulting Serv	1,090,000	100%	0%
Operations & Maint	538,000	33%	67%
Utilities	673,000	0%	100%
Service Contract	<u>1,075,000</u>	33%	67%
Total Operating Expenses	3,826,000	2,077,667	1,748,333
Debt Service			
2012 Bonds Debt Service (5yr Avg)	743,000	5%	95%
2017 Bonds Debt Service (5yr Avg)	355,400	5%	95%
New Debt Service (5yr Avg)	<u>491,120</u>	5%	95%
Total Debt Service	1,589,520	79,476	1,510,044
Transfer to Capital (5yr Avg)	1,040,000	5%	95%
		52,000	988,000
Proposed Cost Allocation	6,455,520	2,209,143	4,246,377
		34%	66%

<sup>4</sup> The Town does not have engineering information available to support a detailed cost allocation to wastewater flow, BOD, and TSS. Therefore, a simplified cost allocation is proposed as shown in Table 24.

## SECTION 9: WASTEWATER RATE DESIGN

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The Town proposes to maintain its current wastewater rate structure. The Town will continue to charge residential customers a fixed annual sewer charge, while commercial customers will be charged for sewer flow based on metered water use. The amounts of each rate are proposed to be updated.

### 9.1 Flows and Pollutant Strength

The prior wastewater rate study assumed monthly residential flow of 14.4 ccf. However, due to long-term water conservation, wastewater flow is now about 9 ccf/month per home. In the Town of Discovery Bay, the average single family home has 2.74 occupants. It is assumed that the typical multiple family dwelling unit has 2 occupants and 6.5 ccf of monthly sewer flow. Based on these parameters, total annual residential flow is estimated in Table 25.

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**Table 25: Estimated Residential Sewer Flows  
Town of Discovery Bay  
Water and Wastewater Rate Study**

	<b>Single Family Residential</b>	<b>Multiple Family</b>	<b>Units</b>
Monthly Flow	9	6.5	ccf/month
Annualized	108	78	ccf/year
Number of Parcels	5,770	224	
Estimated Annual Sewer Flow	623,160	17,472	ccf/year

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Table 26 estimates the Town's total wastewater flow adjusted by strength factors. Strength factors indicate the wastewater pollutants present in each unit of flow. Residential flows are taken from Table 25 and commercial flows are taken from Table 4. The flow of each customer category is adjusted by a strength factor. Domestic strength is assigned a factor of 1. Schools are assumed to be low strength and are assigned a factor of 0.9, and restaurants are assigned a factor of 2.9, representing high strength. Restaurants typically discharge fats, oils, and grease into the sewer system that are costly to treat. The strength factors used in Table 26 are consistent with commonly used factors and are consistent with Town policy.

**Table 26: Estimated Total Flow with Strength Factors  
Town of Discovery Bay  
Water and Wastewater Rate Study**

<b>Customer Category</b>	<b>Total Flow (ccf)</b>	<b>Strength Factor</b>	<b>Flow w/Strength Factor (ccf)</b>
Single Family Residential	623,160	1	623,160
Multiple Family	17,472	1	17,472
Business/Government/Clubs	5,520	1	5,520
Restaurants/Bars/Dining Facilities	5,931	2.9	17,200
Schools	1,256	0.9	1,130
Other Domestic Strength Users	<u>251</u>	1	<u>251</u>
	653,591		664,734

## 9.2 Unit Cost Calculation

Table 27 provides the wastewater unit cost calculation. The FY2020/21 rate revenue requirement of \$6.1 million from the operating cash flow is allocated to the *customer service* and *treatment/disposal* categories based on the percentages in Table 24. The *customer service* revenue requirement is divided by the number of accounts and the *treatment/disposal* revenue requirement is divided by the flow adjusted by strength factors from Table 26.

**Table 27: Wastewater Unit Cost Calculation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

	<b>Customer Service/Admin</b>	<b>Treatment and Disposal</b>	<b>Total</b>
FY2020/21 Revenue Requirement	\$2,091,416	\$4,020,084	\$6,111,500
Cost Allocation	34%	66%	100%
Billing Units	# of Customers 6,032	Flow w/Strength Factor 664,734	
Unit Cost	\$28.89 \$/month	\$6.05 \$/ccf domestic strength	

### 9.3 Rate Design

Table 28 calculates the single family and multiple family sewer bills for FY2020/21 based on the unit costs developed in Table 27. Each residential dwelling unit is assigned a monthly customer service fee of \$28.89. The flow rate of \$6.05/ccf is multiplied by the typical single family flow of 9 ccf/month and the typical multiple family flow of 6.5 ccf/month.

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**Table 28: FY2020/21 Residential Sewer Rate Calculation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

	Count		Rate	Total Monthly Bill
<b>Single Family Residential</b>				
Customer Service Fee	1	X	\$28.89	\$28.89
Treatment/Disposal Fee	9	X	\$6.05	<u>\$54.45</u>
Total Monthly Bill				\$83.34
<b>Multiple Family Residential</b>				
Customer Service Fee	1	X	\$28.89	\$28.89
Treatment/Disposal Fee	6.5	X	\$6.05	<u>\$39.33</u>
Total Monthly Bill				\$68.22

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### 9.4 Commercial Rate Design

The Town bills commercial customers volume sewer rates based on metered water use. Instead of billing the customer service fee as a fixed charge, the commercial customer service revenue requirement is recovered from the commercial volume rates. Table 29 calculates the commercial customer service rate. The total customer service revenue requirement is sub-allocated between residential and commercial classes based on the number of customers. The commercial revenue requirement is then divided by annual commercial flows (without the strength factor) to determine a \$/ccf charge.

Table 30 calculates the total FY2020/21 commercial rates. The customer service rate is added to the strength-adjusted treatment/disposal rate.

**Table 29: First Iteration Commercial Customer Service Rate  
Town of Discovery Bay  
Water and Wastewater Rate Study**

	Residential	Commercial	Total
# of Customers [1]	5,994	38	6,032
	99.4%	0.6%	100.0%
Customer Service Revenue Requirement	\$2,078,240	\$13,175	\$2,091,416
	99.4%	0.6%	100.0%
Billing Units	5,994	12,959	
	# of Customers	Annual ccf	
Rate	\$28.89	\$1.02	
	\$/month	\$/ccf	

1 - Does not include vacant parcels

**Table 30: First Iteration Commercial Wastewater Rate Calculation  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Customer Class	Strength Factor		Base Treatment/ Disposal Rate	=	Treatment/ Disposal Rate		Treatment/ Disposal Rate	+	Cust. Service Rate	=	Total Rate (\$/ccf)
Business/Government/Clubs	1.0	X	\$6.05	=	\$6.05		\$6.05	+	\$1.02	=	\$7.07
Restaurants/Bars/Dining Facilities	2.9	X	\$6.05	=	\$17.54		\$17.54	+	\$1.02	=	\$18.56
Schools	0.9	X	\$6.05	=	\$5.44		\$5.44	+	\$1.02	=	\$6.46
Other Domestic Strength Users	1.0	X	\$6.05	=	\$6.05		\$6.05	+	\$1.02	=	\$7.07

## 9.5 Proposed 5-year Schedule of Rates

Table 31 provides the first iteration of the 5-year wastewater rate plan. Due to cost allocation changes and the overall reduction in residential sewer flows over the past few years, the single family residential rates are proposed to receive slight increases. Commercial customers and multiple family customers are proposed to receive higher rate increases. To provide rate stability, non-single family residential customer rates are proposed to be phased-in over the next five years, as shown in Table 32.

**Table 31: First Iteration 5-Year Wastewater Rate Plan  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Customer Class	Current	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
Single Family	\$82.55	\$83.34	\$84.59	\$85.86	\$87.15	\$88.46
Multiple Family/Condos	\$61.92	\$68.22	\$69.24	\$70.28	\$71.33	\$72.40
Business/Government/Clubs	\$5.734	\$7.067	\$7.173	\$7.281	\$7.390	\$7.501
Restaurants/Bars/Dining Facilities	\$16.793	\$18.557	\$18.835	\$19.118	\$19.405	\$19.696
Schools	\$5.161	\$6.457	\$6.554	\$6.652	\$6.752	\$6.853
Other Domestic Strength Users	\$5.734	\$7.067	\$7.173	\$7.281	\$7.390	\$7.501
Single Family		1.0%	1.5%	1.5%	1.5%	1.5%
Multiple Family/Condos		10.2%	1.5%	1.5%	1.5%	1.5%
Business/Government/Clubs		23.2%	1.5%	1.5%	1.5%	1.5%
Restaurants/Bars/Dining Facilities		10.5%	1.5%	1.5%	1.5%	1.5%
Schools		25.1%	1.5%	1.5%	1.5%	1.5%
Other Domestic Strength Users		23.2%	1.5%	1.5%	1.5%	1.5%

**Table 32: Proposed 5-Year Wastewater Rate Plan  
Town of Discovery Bay  
Water and Wastewater Rate Study**

Customer Class	Current	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25	% Annual Change
Single Family	\$82.55	\$83.34	\$84.59	\$85.86	\$87.15	\$88.46	[1]
Multiple Family/Condos	\$61.92	\$63.89	\$65.92	\$68.01	\$70.17	\$72.40	3.2%
Business/Government/Clubs	\$5.734	\$6.050	\$6.384	\$6.737	\$7.109	\$7.501	5.5%
Restaurants [2]	\$16.793	\$17.337	\$17.899	\$18.479	\$19.078	\$19.696	3.2%
Schools	\$5.161	\$5.462	\$5.781	\$6.118	\$6.475	\$6.853	5.8%
Other Domestic Strength Users	\$5.734	\$6.050	\$6.384	\$6.737	\$7.109	\$7.501	5.5%

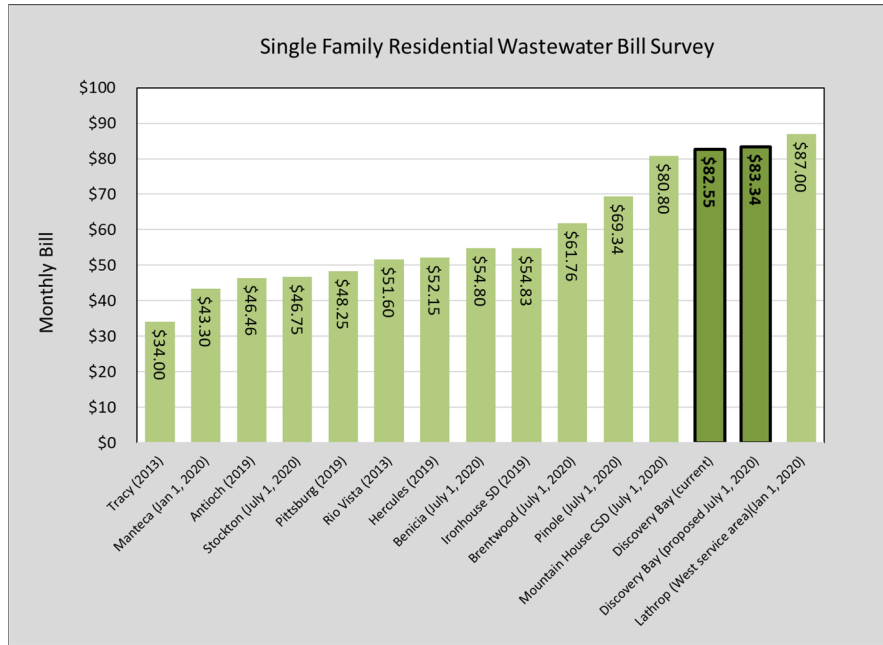
1 – The FY2020/21 rate change is based on the proposed cost allocation described in this report; the rate change from FY2021/22 to FY2024/25 is 1.5%

2 – Includes bars and dining facilities



## 9.6 Bill Impacts

The figure below compares the Town's current and proposed single family residential wastewater bills with those of other local agencies. Though customers are billed annually in the Town of Discovery Bay, bills are expressed here in monthly terms to allow for better comparison across local agencies. The Town's bill is currently at the upper end of surveyed agencies and will remain as such following the proposed rate increases.



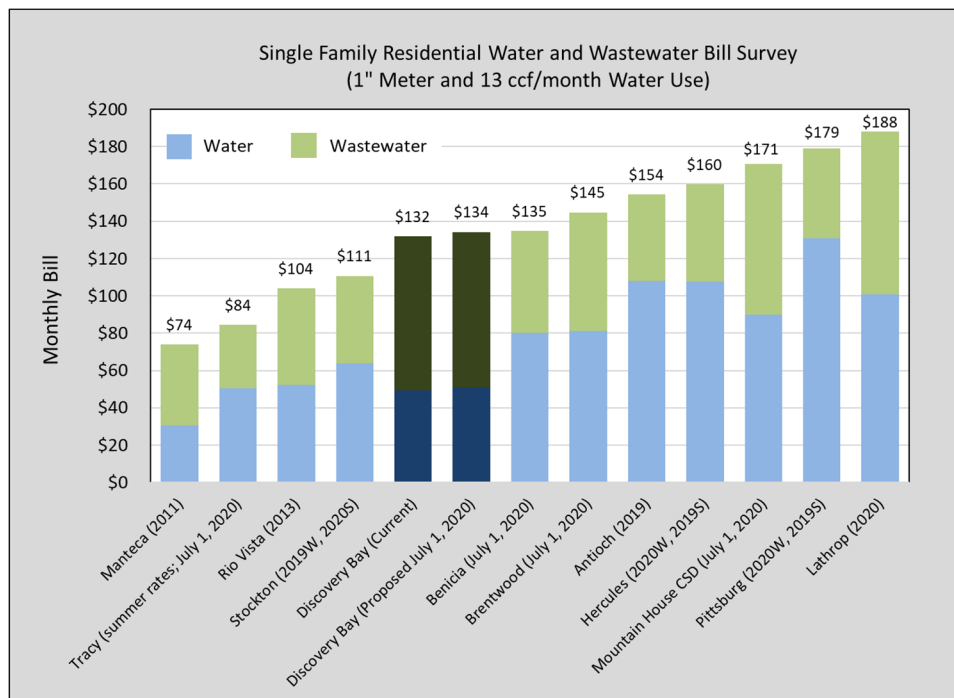
## SECTION 10: CONCLUSIONS AND RECOMMENDATIONS

### 10.1 Rate Study Conclusions

The rates developed in this report were based on the best available information gathered from Town audits, budgets, and input from staff, the Finance Committee, and the Board of Directors. The cost allocations proposed herein are based on American Water Works Association methodologies and industry standard practice. The proposed rates are based on the reasonable cost of providing service and are proportional to the benefits received by each customer.

### 10.2 Rate Impacts

The chart below compares the Town's current and proposed combined water and sewer utility bill of the typical single family residential customer to the bills of other local agencies. The average single family residential customer is served by a 1" meter and uses 13 ccf of water per month. Under the proposed rate increases, the typical single family residential customer will experience a bill increase from \$131.95 to \$134.26 per month, about a 2% increase.



### 10.3 Future Recommendations

It is recommended that the Town update its rates and cost of service at least every five years to account for cost increases, operational changes, and growth in the customer base.