



# Town of Discovery Bay Community Services District 2020 Water Rate Study Draft Tables – February 5, 2020



New debt assumed for FY2020/21 based on a 30-year term and 4.15% interest

### Annual Rate Revenue Increases

Option	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
#1: Lowest rate; max debt financing (\$12.8M)	+4%	+4%	+4%	+4%	+4%
#2: Lowest debt financing (\$5M)	+15%	+15%	+15%	+0%	+0%
#3: Middle Option; debt financing of \$8M	+10%	+10%	+7%	+5%	+5%

note: due to slight cost allocation changes, not all customers will receive an increase precisely equal to the increases shown

### Cumulative Rate Revenue Increases

Option	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
#1: Lowest rate; max debt financing (\$13M)	+4.0%	+8.2%	+12.5%	+17.0%	+21.7%
#2: Lowest debt financing (\$5M)	+15%	+32.3%	+52.1%	+52.1%	+52.1%
#3: Middle Option; debt financing of \$8M	+10%	+21.0%	+29.5%	+35.9%	+42.7%

note: due to slight cost allocation changes, not all customers will receive an increase precisely equal to the increases shown

---

### Summary of Capital Funding Sources Town of Discovery Bay Water Rate Study

	OPTION 1	OPTION 2	OPTION 3
Revenue Sources			
Existing Capital Reserves	55,400	355,400	255,400
Capacity Fees	407,400	407,400	407,400
Rate Revenues	5,400,000	12,900,000	10,000,000
New Debt	<u>12,800,000</u>	<u>5,000,000</u>	<u>8,000,000</u>
Total Revenues	18,662,800	18,662,800	18,662,800
Total Capital Projects	18,662,800	18,662,800	18,662,800

---

**TABLE ES-1: OPTION 1  
PROPOSED WATER RATES**

Avg Bill (13 ccf/month)

\$49.40      \$52.24      \$54.34      \$56.56      \$58.81      \$61.10  
                     6%                      4%                      4%                      4%                      4%

**PROPOSED**

WATER	Current	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)
Vacant	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Non-irrigation Account Charge:						
5/8 Inch Meter	\$20.06	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74
3/4 Inch Meter	\$20.06	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74
1 Inch Meter	\$20.06	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74
1 1/2 Inch Meter	\$39.16	\$42.99	\$44.71	\$46.50	\$48.36	\$50.29
2 Inch Meter	\$62.04	\$68.18	\$70.91	\$73.75	\$76.70	\$79.77
3 Inch Meter	\$123.06	\$135.35	\$140.76	\$146.39	\$152.25	\$158.34
4 Inch Meter	\$191.71	\$210.91	\$219.35	\$228.12	\$237.24	\$246.73
6 Inch Meter	\$382.43	\$420.81	\$437.64	\$455.15	\$473.36	\$492.29
Irrigation Account Charge:						
5/8 Inch Meter	\$18.92	\$19.70	\$20.49	\$21.31	\$22.16	\$23.05
3/4 Inch Meter	\$18.92	\$19.70	\$20.49	\$21.31	\$22.16	\$23.05
1 Inch Meter	\$18.92	\$19.70	\$20.49	\$21.31	\$22.16	\$23.05
1 1/2 Inch Meter	\$36.87	\$38.39	\$39.93	\$41.53	\$43.19	\$44.92
2 Inch Meter	\$58.38	\$60.82	\$63.25	\$65.78	\$68.41	\$71.15
3 Inch Meter	\$115.73	\$120.63	\$125.46	\$130.48	\$135.70	\$141.13
4 Inch Meter	\$180.27	\$187.91	\$195.43	\$203.25	\$211.38	\$219.84
6 Inch Meter	\$359.54	\$374.81	\$389.80	\$405.39	\$421.61	\$438.47
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.326	\$2.420	\$2.520	\$2.620	\$2.720
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 1: Current FY2019/20 Service Charge Revenues  
Town of Discovery Bay  
Water Rate Study**

<b>Meter Size</b>	<b># of Meters</b>	<b>Monthly Fee</b>	<b>Meter Fee Annual Revenue</b>	<b>Metered Rate (\$/ccf) Estimated Annual Water Use (ccf)</b>	<b>\$2.257 Annual Water Use Fees</b>
<b>Non-Irrigation</b>					
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"	<u>10</u>	<u>\$191.71</u>	<u>\$23,005</u>		
Subtotal Non-irrigation	6,070		\$1,519,921	959,298	\$2,165,000
<b>Irrigation</b>					
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"	<u>7</u>	<u>\$180.27</u>	<u>\$15,143</u>		
Subtotal Irrigation	87		\$57,114	198,980	\$449,000
Meter Installation Fee	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>Property Tax Roll</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	\$11,616	
			<b>Total</b>	<b>\$4,447,364</b>	

**Table 2: Reserves**  
**Town of Discovery Bay**  
**Water 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>

**Table 3: Water Capital Cash Flows - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

Line		Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1	Emergency Reserves	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400
2	Infrastructure Replacement	<u>762,000</u>	<u>793,900</u>	<u>10,442,900</u>	<u>5,882,100</u>	<u>3,604,200</u>	<u>2,076,600</u>
3	<b>Beginning Balance</b>	1,962,400	1,994,300	11,643,300	7,082,500	4,804,600	3,277,000
4							
5	<b>Revenues</b>						
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500	48,500
7	Transfer from Operating	900,000	900,000	900,000	900,000	900,000	900,000
8	New Debt Proceeds	<u>0</u>	<u>12,800,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	<b>Total revenues</b>	1,064,900	13,748,500	948,500	948,500	948,500	948,500
10							
11	<b>Capital Improvements</b>						
12	Water Supply Capacity						
13	Well 8	150,000	772,500	2,811,400	958,900	0	0
14	Well 5A Decommissioning	<u>0</u>	<u>0</u>	<u>0</u>	<u>82,000</u>	<u>0</u>	<u>0</u>
15	Total Water Supply Capacity	150,000	772,500	2,811,400	1,040,900	0	0
16							
17	Upgrades for Existing Water Supply						
18	Well 4A Rehab	140,000	0	0	0	0	0
19	Well Rehab every 3-4 years (Wells 1B, 2, 4A, 6)	0	257,500	0	0	225,100	0
20	Filter Repair (Newport & Willow)	118,000	103,000	231,300	0	0	0
21	Stabilization Soils- Willow Lake WTP	150,000	0	0	0	0	0
22	Upgrade Well 4A Piping	<u>75,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
23	Total Existing Water Supply	483,000	360,500	231,300	0	225,100	0
24							
25	Distribution/Pipeline Replacements						
26	Mainline CIP Program Long-Term	0	2,060,000	2,121,800	2,185,500	2,251,000	2,318,500
27	Cathodic Protection	0	257,500	0	0	0	0
28	6 inch pipeline replacement Lakeview Biz Park	0	298,700	0	0	0	0
29	Replace Underwater Crossing Laguna Ct	400,000	0	0	0	0	0
30	Edgeview St. Andrews /Clubhouse	<u>0</u>	<u>0</u>	<u>318,300</u>	<u>0</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	2,616,200	2,440,100	2,185,500	2,251,000	2,318,500
32							
33	Additional Distribution Improvements						
34	WTP spill containment curbing/diversion	0	25,800	0	0	0	0
35	Upgrade Hypo Tanks at WTP	<u>0</u>	<u>0</u>	<u>26,500</u>	<u>0</u>	<u>0</u>	<u>0</u>
36	Total Distribution/Pipeline Replacements	0	25,800	26,500	0	0	0
37							
38	Master Plans						
39	Water Master & Asset Management Plans	0	257,500	0	0	0	0
40	2020 Urban Water Management Plan	0	41,200	0	0	0	0
41	AWIA Emergency Plans	<u>0</u>	<u>25,800</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
42	Total Master Plans	0	324,500	0	0	0	0
43							
44	<b>Total Capital Improvements</b>	1,033,000	4,099,500	5,509,300	3,226,400	2,476,100	2,318,500
45							
46	<b>Total Net Revenues</b>	31,900	9,649,000	(4,560,800)	(2,277,900)	(1,527,600)	(1,370,000)
47							
48	<b>Ending Balance</b>	1,994,300	11,643,300	7,082,500	4,804,600	3,277,000	1,907,000
49							

Note: This table does not designate which projects are repair and rehabilitation projects and which are expansion projects to meet the needs of new development. Capacity fee revenues can only be used to fund expansion projects and are estimated based on 34 EDUs in FY2019/20 and 10 new EDUs per year thereafter. Project costs escalated by 3% annually.

**Table 4: Water Operating Cash Flows - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

Line	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1 <b>Beginning Operating Balance</b>	\$756,000	\$1,633,000	\$2,160,000	\$1,873,000	\$1,618,000	\$1,459,000
2						
3 <b>Proposed Increase</b>		4%	4%	4%	4%	4%
4						
5 <b>Revenues</b>						
6 Rate Revenue	4,191,000	4,359,000	4,533,000	4,714,000	4,903,000	5,099,000
7 New Customers	<u>20,000</u>	<u>27,000</u>	<u>35,000</u>	<u>43,000</u>	<u>51,000</u>	<u>61,000</u>
8 Rate Rev Subtotal	4,211,000	4,386,000	4,568,000	4,757,000	4,954,000	5,160,000
9 Less Delinquency (2%)	(91,000)	(87,000)	(91,000)	(94,000)	(98,000)	(102,000)
10 Vacant Parcel	12,000	12,000	12,000	12,000	12,000	12,000
11 Meter Reimbursements	336,000	336,000	336,000	336,000	336,000	336,000
12 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>
13 <b>Total Revenues</b>	4,490,000	4,674,000	4,852,000	5,038,000	5,231,000	5,433,000
14						
15 % increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
16 <b>Expenses</b>						
17 Operating Expenses						
18 Admin & Inter Govt. & Board	334,000	451,000	465,000	479,000	493,000	508,000
19 Staffing & Consulting Serv	572,000	862,000	888,000	915,000	942,000	970,000
20 Meters Reading	88,000	93,000	96,000	99,000	102,000	105,000
21 Operations & Maint	331,000	424,000	437,000	450,000	464,000	478,000
22 SGMA Compliance	0	15,000	20,000	21,000	21,000	22,000
23 Utilities [1]	479,000	467,000	481,000	495,000	510,000	525,000
24 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>
25 Total Operating Expenses	2,455,000	2,988,000	3,083,000	3,239,000	3,335,000	3,435,000
26						
27 Net Operating Revenues	2,035,000	1,686,000	1,769,000	1,799,000	1,896,000	1,998,000
28						
29 Debt Service						
30 2012 Bonds Debt Service [3]	88,000	88,000	89,000	88,000	89,000	88,000
31 2017 Bonds Debt Service [3]	170,000	171,000	171,000	170,000	170,000	168,000
32 New Debt Service [4]	<u>0</u>	<u>0</u>	<u>896,000</u>	<u>896,000</u>	<u>896,000</u>	<u>896,000</u>
33 Total Debt Service	258,000	259,000	1,156,000	1,154,000	1,155,000	1,152,000
34						
35 Debt Service Coverage	7.89	6.51	1.53	1.56	1.64	1.73
36						
37 <b>Total O&amp;M + Debt</b>	2,713,000	3,247,000	4,239,000	4,393,000	4,490,000	4,587,000
38						
39 <b>Total Net Revenues</b>	1,777,000	1,427,000	613,000	645,000	741,000	846,000
40						
41 <b>Transfer to Capital</b>	900,000	900,000	900,000	900,000	900,000	900,000
42						
43 <b>O&amp;M Ending balance</b>	1,633,000	2,160,000	1,873,000	1,618,000	1,459,000	1,405,000
44						
45 <b>Minimum balance target [5]</b>	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 - Estimated at an average rate of 4.15% over a 30-year term based on current interest costs and yield curves, and debt service beginning the following year (rough planning estimate)

5 - 4 months O&M expenses

**Table 5: Cost Allocation - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

<b>Cost</b>	<b>FY2020/21 Estimated Costs</b>	<b>Commodity</b>	<b>Demand</b>	<b>Meters</b>	<b>Cust. Service</b>
<b>Operating Expenses</b>					
Admin & Inter Govt. & Board	451,000	35%	35%	25%	5%
Staffing & Consulting Serv	862,000	35%	35%	25%	5%
Meters Reading	93,000	0%	0%	100%	0%
Operations & Maint	424,000	35%	35%	25%	5%
SGMA Compliance	15,000	0%	100%	0%	0%
Utilities	467,000	100%	0%	0%	0%
Service Contract	<u>676,000</u>	100%	0%	0%	0%
<b>Total Operating Expenses</b>	<b>2,988,000</b>	<b>1,750,950</b>	<b>622,950</b>	<b>527,250</b>	<b>86,850</b>
<b>Debt Service</b>					
2012 Bonds Debt Service (5yr Avg)	88,000	70%	30%	0%	0%
2017 Bonds Debt Service (5yr Avg)	170,000	70%	30%	0%	0%
New Debt Service (5yr Avg)	<u>717,000</u>	70%	30%	0%	0%
<b>Total Debt Service</b>	<b>975,000</b>	<b>683,000</b>	<b>293,000</b>	<b>0</b>	<b>0</b>
<b>Transfer to Capital (5yr Avg)</b>					
	900,000	70%	30%	0%	0%
		630,000	270,000	0	0
<b>Proposed Cost Allocation (does not include fire protection)</b>	<b>4,863,000</b>	<b>3,063,950</b>	<b>1,185,950</b>	<b>527,250</b>	<b>86,850</b>
		<b>63%</b>	<b>24%</b>	<b>11%</b>	<b>1.8%</b>

**Table 6: Unit Cost Calculation - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

<b>FY2020/21 Revenue Requirement</b>	<b>Commodity</b>	<b>Demand</b>	<b>Meters</b>	<b>Cust. Service</b>	<b>Fire Flow</b>
\$4,386,000 [1]	\$2,652,878 60%	\$1,026,838 23%	\$456,512 10%	\$75,198 1.7%	\$175,440 4%
	1,140,310 ccf	6,614 meter equiv	6,614 meter equiv	6,189 # of meters	6,360.6 non-irrigation meter equiv
	\$2.326 \$/ccf	\$12.94 \$/meter equivalent/mo	\$5.75 \$/meter equivalent/mo	\$1.01 \$/meter/mo	\$2.30 \$/domestic equivalent/mo

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 7: Meter Equivalents**  
**Town of Discovery Bay**  
**Water Rate Study**

<b>Meter Size</b>	<b>No/ of Meters</b>	<b>Meter Ratio</b>	<b>Meter Equivalents</b>
Non-Irrigation			
5/8" [1]	369	1.0	369.0
3/4"	1,367	1.0	1,367.0
1"	4,273	1.0	4,273.0
1.5"	33	2.0	66.0
2"	46	3.2	147.2
3"	6	6.4	38.4
4"	<u>10</u>	10.0	<u>100.0</u>
Subtotal Non-irrigation	6,104		6,360.6
Irrigation			
5/8"	4	1.0	4.0
3/4"	0	1.0	0.0
1"	15	1.0	15.0
1.5"	26	2.0	52.0
2"	31	3.2	99.2
3"	2	6.4	12.8
4"	<u>7</u>	10.0	<u>70.0</u>
Subtotal Irrigation	85		253.0
Total	6,189		6,613.6

1 - Includes an estimated 34 new residential customers in FY2020/21

**Table 8: Base Meter Equivalent Charges - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

<b>Cost Category</b>	<b>Non-Irrigation Meter Equivalent</b>	<b>Irrigation Meter Equivalent</b>
Demand	\$12.94	\$12.94
Meters	\$5.75	\$5.75
Fire Protection	<u>\$2.30</u>	NA
Total (\$/meter equiv./mo)	\$20.99	\$18.69



**Table 9: Total Fixed Charges - OPTION 1**  
**Town of Discovery Bay**  
**Water Rate Study**

<b>Non-Irrigation Customers</b>											
<b>Meter Size</b>	<b>Ratio</b>		<b>Meter Equiv. Cost</b>	<b>=</b>	<b>Meter Equiv. Charge</b>		<b>Meter Equiv. Charge</b>	<b>+</b>	<b>Customer Service Charge</b>	<b>=</b>	<b>Total Fixed Monthly Fee</b>
5/8"	1.0	X	\$20.99	=	\$20.99		\$20.99	+	\$1.01	=	\$22.00
3/4"	1.0	X	\$20.99	=	\$20.99		\$20.99	+	\$1.01	=	\$22.00
1"	1.0	X	\$20.99	=	\$20.99		\$20.99	+	\$1.01	=	\$22.00
1.5"	2.0	X	\$20.99	=	\$41.98		\$41.98	+	\$1.01	=	\$42.99
2"	3.2	X	\$20.99	=	\$67.17		\$67.17	+	\$1.01	=	\$68.18
3"	6.4	X	\$20.99	=	\$134.34		\$134.34	+	\$1.01	=	\$135.35
4"	10.0	X	\$20.99	=	\$209.90		\$209.90	+	\$1.01	=	\$210.91
6"	20.0	X	\$20.99	=	\$419.80		\$419.80	+	\$1.01	=	\$420.81

  

<b>Irrigation Customers</b>											
<b>Meter Size</b>	<b>Ratio</b>		<b>Meter Equiv. Cost</b>	<b>=</b>	<b>Meter Equiv. Charge</b>		<b>Meter Equiv. Charge</b>	<b>+</b>	<b>Customer Service Charge</b>	<b>=</b>	<b>Total Fixed Monthly Fee</b>
5/8"	1.0	X	\$18.69	=	\$18.69		\$18.69	+	\$1.01	=	\$19.70
3/4"	1.0	X	\$18.69	=	\$18.69		\$18.69	+	\$1.01	=	\$19.70
1"	1.0	X	\$18.69	=	\$18.69		\$18.69	+	\$1.01	=	\$19.70
1.5"	2.0	X	\$18.69	=	\$37.38		\$37.38	+	\$1.01	=	\$38.39
2"	3.2	X	\$18.69	=	\$59.81		\$59.81	+	\$1.01	=	\$60.82
3"	6.4	X	\$18.69	=	\$119.62		\$119.62	+	\$1.01	=	\$120.63
4"	10.0	X	\$18.69	=	\$186.90		\$186.90	+	\$1.01	=	\$187.91
6"	20.0	X	\$18.69	=	\$373.80		\$373.80	+	\$1.01	=	\$374.81

**TABLE ES-1: OPTION 2  
PROPOSED WATER RATES**

Avg Bill (13 ccf/month)

\$49.40      \$57.68      \$66.38      \$76.30      \$76.30      \$76.30  
                  17%                   15%                   15%                   0%                   0%

WATER	Current	PROPOSED				
		FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)
Vacant	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Non-irrigation Account Charge:						
5/8 Inch Meter	\$20.06	\$23.58	\$27.12	\$31.19	\$31.19	\$31.19
3/4 Inch Meter	\$20.06	\$23.58	\$27.12	\$31.19	\$31.19	\$31.19
1 Inch Meter	\$20.06	\$23.58	\$27.12	\$31.19	\$31.19	\$31.19
1 1/2 Inch Meter	\$39.16	\$46.24	\$53.18	\$61.16	\$61.16	\$61.16
2 Inch Meter	\$62.04	\$73.43	\$84.44	\$97.11	\$97.11	\$97.11
3 Inch Meter	\$123.06	\$145.94	\$167.83	\$193.00	\$193.00	\$193.00
4 Inch Meter	\$191.71	\$227.52	\$261.65	\$300.90	\$300.90	\$300.90
6 Inch Meter	\$382.43	\$454.12	\$522.24	\$600.58	\$600.58	\$600.58
Irrigation Account Charge:						
5/8 Inch Meter	\$18.92	\$21.04	\$24.20	\$27.83	\$27.83	\$27.83
3/4 Inch Meter	\$18.92	\$21.04	\$24.20	\$27.83	\$27.83	\$27.83
1 Inch Meter	\$18.92	\$21.04	\$24.20	\$27.83	\$27.83	\$27.83
1 1/2 Inch Meter	\$36.87	\$41.16	\$47.33	\$54.43	\$54.43	\$54.43
2 Inch Meter	\$58.38	\$65.30	\$75.10	\$86.37	\$86.37	\$86.37
3 Inch Meter	\$115.73	\$129.69	\$149.14	\$171.51	\$171.51	\$171.51
4 Inch Meter	\$180.27	\$202.12	\$232.44	\$267.31	\$267.31	\$267.31
6 Inch Meter	\$359.54	\$403.32	\$463.82	\$533.39	\$533.39	\$533.39
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.623	\$3.020	\$3.470	\$3.470	\$3.470
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 10: Water Capital Cash Flows - OPTION 2**  
**Town of Discovery Bay**  
**Water Rate Study**

Line		Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1	Emergency Reserves	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400
2	Infrastructure Replacement	<u>762,000</u>	<u>893,900</u>	<u>3,742,900</u>	<u>282,100</u>	<u>104,200</u>	<u>676,600</u>
3	<b>Beginning Balance</b>	1,962,400	2,094,300	4,943,300	1,482,500	1,304,600	1,877,000
4							
5	<b>Revenues</b>						
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500	48,500
7	Transfer from Operating	1,000,000	1,900,000	2,000,000	3,000,000	3,000,000	2,000,000
8	New Debt Proceeds	<u>0</u>	<u>5,000,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	<b>Total revenues</b>	1,164,900	6,948,500	2,048,500	3,048,500	3,048,500	2,048,500
10							
11	<b>Capital Improvements</b>						
12	Water Supply Capacity						
13	Well 8	150,000	772,500	2,811,400	958,900	0	0
14	Well 5A Decommissioning	<u>0</u>	<u>0</u>	<u>0</u>	<u>82,000</u>	<u>0</u>	<u>0</u>
15	Total Water Supply Capacity	150,000	772,500	2,811,400	1,040,900	0	0
16							
17	Upgrades for Existing Water Supply						
18	Well 4A Rehab	140,000	0	0	0	0	0
19	Well Rehab every 3-4 years (Wells 1B, 2, 4A, 6)	0	257,500	0	0	225,100	0
20	Filter Repair (Newport & Willow)	118,000	103,000	231,300	0	0	0
21	Stabilization Soils- Willow Lake WTP	150,000	0	0	0	0	0
22	Upgrade Well 4A Piping	<u>75,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
23	Total Existing Water Supply	483,000	360,500	231,300	0	225,100	0
24							
25	Distribution/Pipeline Replacements						
26	Mainline CIP Program Long-Term	0	2,060,000	2,121,800	2,185,500	2,251,000	2,318,500
27	Cathodic Protection	0	257,500	0	0	0	0
28	6 inch pipeline replacement Lakeview Biz Park	0	298,700	0	0	0	0
29	Replace Underwater Crossing Laguna Ct	400,000	0	0	0	0	0
30	Edgeview St. Andrews /Clubhouse	<u>0</u>	<u>0</u>	<u>318,300</u>	<u>0</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	2,616,200	2,440,100	2,185,500	2,251,000	2,318,500
32							
33	Additional Distribution Improvements						
34	WTP spill containment curbing/diversion	0	25,800	0	0	0	0
35	Upgrade Hypo Tanks at WTP	<u>0</u>	<u>0</u>	<u>26,500</u>	<u>0</u>	<u>0</u>	<u>0</u>
36	Total Distribution/Pipeline Replacements	0	25,800	26,500	0	0	0
37							
38	Master Plans						
39	Water Master & Asset Management Plans	0	257,500	0	0	0	0
40	2020 Urban Water Management Plan	0	41,200	0	0	0	0
41	AWIA Emergency Plans	<u>0</u>	<u>25,800</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
42	Total Master Plans	0	324,500	0	0	0	0
43							
44	<b>Total Capital Improvements</b>	1,033,000	4,099,500	5,509,300	3,226,400	2,476,100	2,318,500
45							
46	<b>Total Net Revenues</b>	131,900	2,849,000	(3,460,800)	(177,900)	572,400	(270,000)
47							
48	<b>Ending Balance</b>	2,094,300	4,943,300	1,482,500	1,304,600	1,877,000	1,607,000
49							

Note: This table does not designate which projects are repair and rehabilitation projects and which are expansion projects to meet the needs of new development. Capacity fee revenues can only be used to fund expansion projects and are estimated based on 34 EDUs in FY2019/20 and 10 new EDUs per year thereafter. Project costs escalated by 3% annually.

**Table 11: Water Operating Cash Flows - OPTION 2**  
**Town of Discovery Bay**  
**Water Rate Study**

Line		Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1	<b>Beginning Operating Balance</b>	\$756,000	\$1,533,000	\$1,515,000	\$1,671,000	\$1,504,000	\$1,249,000
2							
3	<b>Proposed Increase</b>		15%	15%	15%	0%	0%
4							
5	<b>Revenues</b>						
6	Rate Revenue	4,191,000	4,820,000	5,543,000	6,374,000	6,374,000	6,374,000
7	New Customers	<u>20,000</u>	<u>30,000</u>	<u>42,000</u>	<u>58,000</u>	<u>67,000</u>	<u>76,000</u>
8	Rate Rev Subtotal	4,211,000	4,850,000	5,585,000	6,432,000	6,441,000	6,450,000
9	Less Delinquency (2%)	(91,000)	(96,000)	(111,000)	(127,000)	(127,000)	(127,000)
10	Vacant Parcel	12,000	12,000	12,000	12,000	12,000	12,000
11	Meter Reimbursements	336,000	336,000	336,000	336,000	336,000	336,000
12	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>
13	<b>Total Revenues</b>	4,490,000	5,129,000	5,849,000	6,680,000	6,689,000	6,698,000
14							
15	% increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
16	<b>Expenses</b>						
17	Operating Expenses						
18	Admin & Inter Govt. & Board	334,000	451,000	465,000	479,000	493,000	508,000
19	Staffing & Consulting Serv	572,000	862,000	888,000	915,000	942,000	970,000
20	Meters Reading	88,000	93,000	96,000	99,000	102,000	105,000
21	Operations & Maint	331,000	424,000	437,000	450,000	464,000	478,000
22	SGMA Compliance	0	15,000	20,000	21,000	21,000	22,000
23	Utilities [1]	479,000	467,000	481,000	495,000	510,000	525,000
24	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>
25	Total Operating Expenses	2,455,000	2,988,000	3,083,000	3,239,000	3,335,000	3,435,000
26							
27	Net Operating Revenues	2,035,000	2,141,000	2,766,000	3,441,000	3,354,000	3,263,000
28							
29	Debt Service						
30	2012 Bonds Debt Service [3]	88,000	88,000	89,000	88,000	89,000	88,000
31	2017 Bonds Debt Service [3]	170,000	171,000	171,000	170,000	170,000	168,000
32	New Debt Service [4]	<u>0</u>	<u>0</u>	<u>350,000</u>	<u>350,000</u>	<u>350,000</u>	<u>350,000</u>
33	Total Debt Service	258,000	259,000	610,000	608,000	609,000	606,000
34							
35	Debt Service Coverage	7.89	8.27	4.53	5.66	5.51	5.38
36							
37	<b>Total O&amp;M + Debt</b>	2,713,000	3,247,000	3,693,000	3,847,000	3,944,000	4,041,000
38							
39	<b>Total Net Revenues</b>	1,777,000	1,882,000	2,156,000	2,833,000	2,745,000	2,657,000
40							
41	<b>Transfer to Capital</b>	1,000,000	1,900,000	2,000,000	3,000,000	3,000,000	2,000,000
42							
43	<b>O&amp;M Ending balance</b>	1,533,000	1,515,000	1,671,000	1,504,000	1,249,000	1,906,000
44							
45	<b>Minimum balance target [5]</b>	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 - Estimated at an average rate of 4.15% over a 30-year term based on current interest costs and yield curves, and debt service beginning the following year (rough planning estimate)

5 - 4 months O&M expenses

**TABLE ES-1: OPTION 3  
PROPOSED WATER RATES**

Avg Bill (13 ccf/month)

\$49.40      \$55.21      \$60.71      \$64.94      \$68.23      \$71.59  
                          12%                   10%                   7%                   5%                   5%

WATER	PROPOSED					
	Current	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)	Monthly (\$/month)
Vacant	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Non-irrigation Account Charge:						
5/8 Inch Meter	\$20.06	\$22.81	\$25.09	\$26.85	\$28.19	\$29.60
3/4 Inch Meter	\$20.06	\$22.81	\$25.09	\$26.85	\$28.19	\$29.60
1 Inch Meter	\$20.06	\$22.81	\$25.09	\$26.85	\$28.19	\$29.60
1 1/2 Inch Meter	\$39.16	\$44.67	\$49.14	\$52.58	\$55.21	\$57.97
2 Inch Meter	\$62.04	\$70.90	\$77.99	\$83.45	\$87.62	\$92.00
3 Inch Meter	\$123.06	\$140.85	\$154.94	\$165.79	\$174.08	\$182.78
4 Inch Meter	\$191.71	\$219.55	\$241.51	\$258.42	\$271.34	\$284.91
6 Inch Meter	\$382.43	\$438.15	\$481.97	\$515.71	\$541.50	\$568.58
Irrigation Account Charge:						
5/8 Inch Meter	\$18.92	\$20.38	\$22.42	\$23.99	\$25.19	\$26.45
3/4 Inch Meter	\$18.92	\$20.38	\$22.42	\$23.99	\$25.19	\$26.45
1 Inch Meter	\$18.92	\$20.38	\$22.42	\$23.99	\$25.19	\$26.45
1 1/2 Inch Meter	\$36.87	\$39.81	\$43.79	\$46.86	\$49.20	\$51.66
2 Inch Meter	\$58.38	\$63.13	\$69.44	\$74.30	\$78.02	\$81.92
3 Inch Meter	\$115.73	\$125.30	\$137.83	\$147.48	\$154.85	\$162.59
4 Inch Meter	\$180.27	\$195.25	\$214.78	\$229.81	\$241.30	\$253.37
6 Inch Meter	\$359.54	\$389.55	\$428.51	\$458.51	\$481.44	\$505.51
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.492	\$2.740	\$2.930	\$3.080	\$3.230
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 12: Water Capital Cash Flows - OPTION 3**  
**Town of Discovery Bay**  
**Water Rate Study**

Line	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1	Emergency Reserves	1,200,400	1,200,400	1,200,400	1,200,400	1,200,400
2	Infrastructure Replacement	<u>762,000</u>	<u>893,900</u>	<u>5,842,900</u>	<u>1,882,100</u>	<u>704,200</u>
3	<b>Beginning Balance</b>	1,962,400	2,094,300	7,043,300	3,082,500	1,904,600
4						
5	<b>Revenues</b>					
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500
7	Transfer from Operating	1,000,000	1,000,000	1,500,000	2,000,000	2,000,000
8	New Debt Proceeds	<u>0</u>	<u>8,000,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	<b>Total Revenues</b>	1,164,900	9,048,500	1,548,500	2,048,500	2,048,500
10						
11	<b>Capital Improvements</b>					
12	Water Supply Capacity					
13	Well 8	150,000	772,500	2,811,400	958,900	0
14	Well 5A Decommissioning	<u>0</u>	<u>0</u>	<u>0</u>	<u>82,000</u>	<u>0</u>
15	Total Water Supply Capacity	150,000	772,500	2,811,400	1,040,900	0
16						
17	Upgrades for Existing Water Supply					
18	Well 4A Rehab	140,000	0	0	0	0
19	Well Rehab every 3-4 years (Wells 1B, 2, 4A, 6)	0	257,500	0	0	225,100
20	Filter Repair (Newport & Willow)	118,000	103,000	231,300	0	0
21	Stabilization Soils- Willow Lake WTP	150,000	0	0	0	0
22	Upgrade Well 4A Piping	<u>75,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
23	Total Existing Water Supply	483,000	360,500	231,300	0	225,100
24						
25	Distribution/Pipeline Replacements					
26	Mainline CIP Program Long-Term	0	2,060,000	2,121,800	2,185,500	2,251,000
27	Cathodic Protection	0	257,500	0	0	0
28	6 inch pipeline replacement Lakeview Biz Park	0	298,700	0	0	0
29	Replace Underwater Crossing Laguna Ct	400,000	0	0	0	0
30	Edgeview St. Andrews /Clubhouse	<u>0</u>	<u>0</u>	<u>318,300</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	2,616,200	2,440,100	2,185,500	2,251,000
32						
33	Additional Distribution Improvements					
34	WTP spill containment curbing/diversion	0	25,800	0	0	0
35	Upgrade Hypo Tanks at WTP	<u>0</u>	<u>0</u>	<u>26,500</u>	<u>0</u>	<u>0</u>
36	Total Distribution/Pipeline Replacements	0	25,800	26,500	0	0
37						
38	Master Plans					
39	Water Master & Asset Management Plans	0	257,500	0	0	0
40	2020 Urban Water Management Plan	0	41,200	0	0	0
41	AWIA Emergency Plans	<u>0</u>	<u>25,800</u>	<u>0</u>	<u>0</u>	<u>0</u>
42	Total Master Plans	0	324,500	0	0	0
43						
44	<b>Total Capital Improvements</b>	1,033,000	4,099,500	5,509,300	3,226,400	2,476,100
45						
46	<b>Total Net Revenues</b>	131,900	4,949,000	(3,960,800)	(1,177,900)	(427,600)
47						
48	<b>Ending Balance</b>	2,094,300	7,043,300	3,082,500	1,904,600	1,477,000

Note: This table does not designate which projects are repair and rehabilitation projects and which are expansion projects to meet the needs of new development. Capacity fee revenues can only be used to fund expansion projects and are estimated based on 34 EDUs in FY2019/20 and 10 new EDUs per year thereafter. Project costs escalated by 3% annually.

**Table 13: Water Operating Cash Flows - OPTION 3**  
**Town of Discovery Bay**  
**Water Rate Study**

Line	Current FY2019/20	Projected FY2020/21	Projected FY2021/22	Projected FY2022/23	Projected FY2023/24	Projected FY2024/25
1 <b>Beginning Operating Balance</b>	\$756,000	\$1,533,000	\$2,208,000	\$2,189,000	\$1,873,000	\$1,737,000
2						
3 <b>Proposed Increase</b>		10%	10%	7%	5%	5%
4						
5 <b>Revenues</b>						
6 Rate Revenue	4,191,000	4,610,000	5,071,000	5,426,000	5,697,000	5,982,000
7 New Customers	<u>20,000</u>	<u>29,000</u>	<u>39,000</u>	<u>49,000</u>	<u>60,000</u>	<u>71,000</u>
8 Rate Rev Subtotal	4,211,000	4,639,000	5,110,000	5,475,000	5,757,000	6,053,000
9 Less Delinquency (2%)	(91,000)	(92,000)	(101,000)	(109,000)	(114,000)	(120,000)
10 Vacant Parcel	12,000	12,000	12,000	12,000	12,000	12,000
11 Meter Reimbursements	336,000	336,000	336,000	336,000	336,000	336,000
12 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>
13 <b>Total Revenues</b>	4,490,000	4,922,000	5,384,000	5,741,000	6,018,000	6,308,000
14						
15 % increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
16 <b>Expenses</b>						
17 Operating Expenses						
18 Admin & Inter Govt. & Board	334,000	451,000	465,000	479,000	493,000	508,000
19 Staffing & Consulting Serv	572,000	862,000	888,000	915,000	942,000	970,000
20 Meters Reading	88,000	93,000	96,000	99,000	102,000	105,000
21 Operations & Maint	331,000	424,000	437,000	450,000	464,000	478,000
22 SGMA Compliance	0	15,000	20,000	21,000	21,000	22,000
23 Utilities [1]	479,000	467,000	481,000	495,000	510,000	525,000
24 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>
25 Total Operating Expenses	2,455,000	2,988,000	3,083,000	3,239,000	3,335,000	3,435,000
26						
27 Net Operating Revenues	2,035,000	1,934,000	2,301,000	2,502,000	2,683,000	2,873,000
28						
29 Debt Service						
30 2012 Bonds Debt Service [3]	88,000	88,000	89,000	88,000	89,000	88,000
31 2017 Bonds Debt Service [3]	170,000	171,000	171,000	170,000	170,000	168,000
32 New Debt Service [4]	<u>0</u>	<u>0</u>	<u>560,000</u>	<u>560,000</u>	<u>560,000</u>	<u>560,000</u>
33 Total Debt Service	258,000	259,000	820,000	818,000	819,000	816,000
34						
35 Debt Service Coverage	7.89	7.47	2.81	3.06	3.28	3.52
36						
37 <b>Total O&amp;M + Debt</b>	2,713,000	3,247,000	3,903,000	4,057,000	4,154,000	4,251,000
38						
39 <b>Total Net Revenues</b>	1,777,000	1,675,000	1,481,000	1,684,000	1,864,000	2,057,000
40						
41 <b>Transfer to Capital</b>	1,000,000	1,000,000	1,500,000	2,000,000	2,000,000	2,500,000
42						
43 <b>O&amp;M Ending balance</b>	1,533,000	2,208,000	2,189,000	1,873,000	1,737,000	1,294,000
44						
45 <b>Minimum balance target [5]</b>	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 - Estimated at an average rate of 4.15% over a 30-year term based on current interest costs and yield curves, and debt service beginning the following year (rough planning estimate)

5 - 4 months O&M expenses