



**Town of Discovery Bay
Community Services District
2020 Water Rate Study
Draft Tables – February 24, 2020**



New debt assumed for FY2020/21 based on a 30-year term and 4.15% interest (Options 1 and 3).

Reduction of \$6.6M in projects and phase-in of pipeline costs from prior draft.

12% rate increase approved for FY2020/21 in prior rate study.

Annual Rate Revenue Increases

Option	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
#1: Lowest rate; max debt financing (\$7.85M)	+1%	+1%	+1%	+1%	+1%
#2: No debt	+20%	+15%	+0%	+0%	+0%
#3: Middle Option; debt financing of \$3M	+5%	+5%	+5%	+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 (\$7.85M)	+1.00%	+2.01%	+3.03%	+4.06%	+5.10%
#2: No debt	+20%	+38%	+38%	+38%	+38%
#3: Middle Option; debt financing of \$3M	+5.0%	+10.3%	+15.8%	+21.6%	+27.6%

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	191,700	161,700	241,700
Excess Operating Reserves	1,710,000	1,710,000	1,710,000
Capacity Fees	407,400	407,400	407,400
Rate Revenues	1,900,000	9,780,000	6,700,000
New Debt	<u>7,850,000</u>	0	<u>3,000,000</u>
Total Revenues	12,059,100	12,059,100	12,059,100
Total Capital Projects	12,059,100	12,059,100	12,059,100

**Table 1: Current FY2019/20 Service Charge Revenues
Town of Discovery Bay
Water Rate Study**

Meter Size	# of Meters	Monthly Fee	Meter Fee Annual Revenue	Metered Rate (\$/ccf) Estimated Annual Water Use (ccf)	\$2.257 Annual Water Use Fees
Non-Irrigation					
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		
Subtotal Non-irrigation	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		
Subtotal Irrigation	87		\$57,114	198,980	\$449,000
Meter Installation Fee	3,493	\$8.01	\$335,713		
Total Metered Customers	6,157		\$1,912,748	1,158,278	\$2,614,000
			42%		58%
Property Tax Roll					
Unmetered Water	# of Parcels	Monthly Fee	Total Annual Revenues		
Vacant & Waterways	66	\$14.67	\$11,616		
			Summary		
			Metered	\$4,526,748	
			2% Delinquency	(\$91,000)	
			Vacant	\$11,616	
			Total	\$4,447,364	

**Table 2: Reserves
Town of Discovery Bay
Water Rate Study**

Reserves	FY2018/19 Estimate	Water	Wastewater
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
Operating Reserves Total	\$5,142,601	\$755,828	\$4,386,773
Emergency Reserves	\$3,001,000	\$1,200,400	\$1,800,600
Infrastructure Replacement Total	\$2,844,580	\$762,154	\$2,082,426
Total Reserves	\$10,988,181	\$2,718,382	\$8,269,799

**Table 3: Water Capital Cash Flows - Revised 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
2	Infrastructure Replacement	<u>762,000</u>	<u>1,603,900</u>	<u>7,092,100</u>	<u>3,919,700</u>	<u>2,607,800</u>
3	Beginning Balance	1,962,400	2,804,300	8,292,500	5,120,100	3,808,200
4						
5	Revenues					
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500
7	Transfer from Operating	1,710,000	0	400,000	500,000	500,000
8	New Debt Proceeds	<u>0</u>	<u>7,850,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	Total Revenues	1,874,900	7,898,500	448,500	548,500	548,500
10						
11	Capital Improvements					
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	0	530,500	819,500	1,125,500
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>309,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	865,200	530,500	819,500	1,125,500
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	Admin Projects					
45	Cyber Security	0	61,800	0	0	45,000
46	New Truck	<u>0</u>	<u>0</u>	<u>21,200</u>	<u>0</u>	<u>0</u>
47	Total Admin	0	61,800	21,200	0	45,000
48						
49	Total Capital Improvements	1,033,000	2,410,300	3,620,900	1,860,400	1,395,600
50						
51	Total Net Revenues	841,900	5,488,200	(3,172,400)	(1,311,900)	(847,100)
52						
53	Ending Balance	2,804,300	8,292,500	5,120,100	3,808,200	2,961,100
54						

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 – Revised 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	Beginning Operating Balance	\$756,000	\$823,000	\$2,125,000	\$2,429,500	\$2,580,500
2						
3	Proposed Increase		1.0%	1.0%	1.0%	1.0%
4						
5	Revenues					
6	Rate Revenue	4,191,000	4,233,000	4,275,000	4,318,000	4,405,000
7	New Customers	<u>20,000</u>	<u>26,000</u>	<u>33,000</u>	<u>39,000</u>	<u>52,000</u>
8	Rate Rev Subtotal	4,211,000	4,259,000	4,308,000	4,357,000	4,457,000
9	Less Delinquency (2%)	(91,000)	(85,000)	(86,000)	(86,000)	(88,000)
10	Vacant Parcel	12,000	12,000	12,000	12,000	12,000
11	Meter Reimbursements	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>
13	Total Revenues	4,490,000	4,549,000	4,597,000	4,646,000	4,744,000
14						
15	% increase in operating expenses		budget	3.0%	3.0%	3.0%
16	Expenses					
17	Operating Expenses					
18	Admin & Inter Govt. & Board	334,000	451,000	465,000	479,000	508,000
19	Staffing & Consulting Serv	572,000	862,000	888,000	915,000	970,000
20	Meters Reading	88,000	93,000	96,000	99,000	105,000
21	Operations & Maint	331,000	424,000	437,000	450,000	478,000
22	SGMA Compliance	0	15,000	20,000	21,000	22,000
23	Utilities [1]	479,000	467,000	481,000	495,000	525,000
24	Service Contract [2]	<u>651,000</u>	<u>676,000</u>	<u>696,000</u>	<u>780,000</u>	<u>827,000</u>
25	Total Operating Expenses	2,455,000	2,988,000	3,083,000	3,239,000	3,435,000
26						
27	Net Operating Revenues	2,035,000	1,561,000	1,514,000	1,407,000	1,309,000
28						
29	Debt Service					
30	2012 Bonds Debt Service [3]	88,000	88,000	89,000	88,000	88,000
31	2017 Bonds Debt Service [3]	170,000	171,000	171,000	170,000	168,000
32	New Debt Service [4]	<u>0</u>	<u>0</u>	<u>549,500</u>	<u>549,500</u>	<u>549,500</u>
33	Total Debt Service	258,000	259,000	809,500	807,500	805,500
34						
35	Debt Service Coverage	7.89	6.03	1.87	1.74	1.68
36						
37	Total O&M + Debt	2,713,000	3,247,000	3,892,500	4,046,500	4,240,500
38						
39	Total Net Revenues	1,777,000	1,302,000	704,500	599,500	503,500
40						
41	Transfer to Capital	1,710,000	0	400,000	500,000	500,000
42						
43	O&M Ending balance	823,000	2,125,000	2,429,500	2,529,000	2,584,000
44						
45	Minimum balance target [5]	818,000	996,000	1,028,000	1,080,000	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 – Revised OPTION 1
Town of Discovery Bay
Water Rate Study**

Cost	FY2020/21 Estimated Costs	Commodity	Demand	Meters	Cust. Service
Operating Expenses					
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%
Total Operating Expenses	2,988,000	1,750,950	622,950	527,250	86,850
Debt Service					
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>440,000</u>	70%	30%	0%	0%
Total Debt Service	698,000	489,000	209,000	0	0
Transfer to Capital (5yr Avg)					
	380,000	70%	30%	0%	0%
		266,000	114,000	0	0
Proposed Cost Allocation (does not include fire protection)	4,066,000	2,505,950	945,950	527,250	86,850
		62%	23%	13%	2.1%

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

FY2020/21 Revenue Requirement	Commodity	Demand	Meters	Cust. Service	Fire Flow
\$4,259,000 [1]	\$2,519,903 59%	\$951,217 22%	\$530,186 12%	\$87,334 2.1%	\$170,360 4%
	1,140,310 ccf	6,614 meter equiv	6,614 meter equiv	6,189 # of meters	6,360.6 non-irrigation meter equiv
	\$2.210 \$/ccf	\$11.99 \$/meter equivalent/mo	\$6.68 \$/meter equivalent/mo	\$1.18 \$/meter/mo	\$2.23 \$/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**

Meter Size	No/ of Meters	Meter Ratio	Meter Equivalents
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 – Revised OPTION 1
Town of Discovery Bay
Water Rate Study**

Cost Category	Non-Irrigation Meter Equivalent	Irrigation Meter Equivalent
Demand	\$11.99	\$11.99
Meters	\$6.68	\$6.68
Fire Protection	<u>\$2.23</u>	<u>NA</u>
Total (\$/meter equiv./mo)	\$20.90	\$18.67

Table 9: Total Fixed Charges – Revised OPTION 1
Town of Discovery Bay
Water Rate Study

Non-Irrigation Customers											
Meter Size	Ratio		Meter Equiv. Cost	=	Meter Equiv. Charge		Meter Equiv. Charge	+	Customer Service Charge	=	Total Fixed Monthly Fee
5/8"	1.0	X	\$20.90	=	\$20.90		\$20.90	+	\$1.18	=	\$22.08
3/4"	1.0	X	\$20.90	=	\$20.90		\$20.90	+	\$1.18	=	\$22.08
1"	1.0	X	\$20.90	=	\$20.90		\$20.90	+	\$1.18	=	\$22.08
1.5"	2.0	X	\$20.90	=	\$41.80		\$41.80	+	\$1.18	=	\$42.98
2"	3.2	X	\$20.90	=	\$66.88		\$66.88	+	\$1.18	=	\$68.06
3"	6.4	X	\$20.90	=	\$133.76		\$133.76	+	\$1.18	=	\$134.94
4"	10.0	X	\$20.90	=	\$209.00		\$209.00	+	\$1.18	=	\$210.18
6"	20.0	X	\$20.90	=	\$418.00		\$418.00	+	\$1.18	=	\$419.18

Irrigation Customers											
Meter Size	Ratio		Meter Equiv. Cost	=	Meter Equiv. Charge		Meter Equiv. Charge	+	Customer Service Charge	=	Total Fixed Monthly Fee
5/8"	1.0	X	\$18.67	=	\$18.67		\$18.67	+	\$1.18	=	\$19.85
3/4"	1.0	X	\$18.67	=	\$18.67		\$18.67	+	\$1.18	=	\$19.85
1"	1.0	X	\$18.67	=	\$18.67		\$18.67	+	\$1.18	=	\$19.85
1.5"	2.0	X	\$18.67	=	\$37.34		\$37.34	+	\$1.18	=	\$38.52
2"	3.2	X	\$18.67	=	\$59.74		\$59.74	+	\$1.18	=	\$60.92
3"	6.4	X	\$18.67	=	\$119.49		\$119.49	+	\$1.18	=	\$120.67
4"	10.0	X	\$18.67	=	\$186.70		\$186.70	+	\$1.18	=	\$187.88
6"	20.0	X	\$18.67	=	\$373.40		\$373.40	+	\$1.18	=	\$374.58

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

Avg Bill (13 ccf/month)

\$49.40 \$60.22 \$69.27 \$69.27 \$69.27 \$69.27
 22% 15% 0% 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	\$25.08	\$28.84	\$28.84	\$28.84	\$28.84
3/4 Inch Meter	\$20.06	\$25.08	\$28.84	\$28.84	\$28.84	\$28.84
1 Inch Meter	\$20.06	\$25.08	\$28.84	\$28.84	\$28.84	\$28.84
1 1/2 Inch Meter	\$39.16	\$49.07	\$56.43	\$56.43	\$56.43	\$56.43
2 Inch Meter	\$62.04	\$77.86	\$89.54	\$89.54	\$89.54	\$89.54
3 Inch Meter	\$123.06	\$154.63	\$177.82	\$177.82	\$177.82	\$177.82
4 Inch Meter	\$191.71	\$240.99	\$277.14	\$277.14	\$277.14	\$277.14
6 Inch Meter	\$382.43	\$480.89	\$553.02	\$553.02	\$553.02	\$553.02
Irrigation Account Charge:						
5/8 Inch Meter	\$18.92	\$22.43	\$25.79	\$25.79	\$25.79	\$25.79
3/4 Inch Meter	\$18.92	\$22.43	\$25.79	\$25.79	\$25.79	\$25.79
1 Inch Meter	\$18.92	\$22.43	\$25.79	\$25.79	\$25.79	\$25.79
1 1/2 Inch Meter	\$36.87	\$43.77	\$50.34	\$50.34	\$50.34	\$50.34
2 Inch Meter	\$58.38	\$69.38	\$79.79	\$79.79	\$79.79	\$79.79
3 Inch Meter	\$115.73	\$137.67	\$158.32	\$158.32	\$158.32	\$158.32
4 Inch Meter	\$180.27	\$214.49	\$246.66	\$246.66	\$246.66	\$246.66
6 Inch Meter	\$359.54	\$427.89	\$492.07	\$492.07	\$492.07	\$492.07
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.703	\$3.110	\$3.110	\$3.110	\$3.110
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 - Revised 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
2	Infrastructure Replacement	<u>762,000</u>	<u>1,603,900</u>	<u>1,072,100</u>	<u>49,700</u>	<u>837,800</u>
3	Beginning Balance	1,962,400	2,804,300	2,272,500	1,250,100	2,038,200
4						
5	Revenues					
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500
7	Transfer from Operating	1,710,000	1,830,000	2,550,000	2,600,000	1,400,000
8	New Debt Proceeds	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	Total Revenues	1,874,900	1,878,500	2,598,500	2,648,500	1,448,500
10						
11	Capital Improvements					
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	0	530,500	819,500	1,125,500
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>309,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	865,200	530,500	819,500	1,125,500
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	Admin Projects					
45	Cyber Security	0	61,800	0	0	45,000
46	New Truck	<u>0</u>	<u>0</u>	<u>21,200</u>	<u>0</u>	<u>0</u>
47	Total Admin	0	61,800	21,200	0	45,000
48						
49	Total Capital Improvements	1,033,000	2,410,300	3,620,900	1,860,400	1,395,600
50						
51	Total Net Revenues	841,900	(531,800)	(1,022,400)	788,100	52,900
52						
53	Ending Balance	2,804,300	2,272,500	1,250,100	2,038,200	2,091,100
54						

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 - Revised 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 Beginning Operating Balance	\$756,000	\$823,000	\$1,080,000	\$1,273,000	\$1,270,000	\$2,379,000
2						
3 Proposed Increase		20%	15%	0%	0%	0%
4						
5 Revenues						
6 Rate Revenue	4,191,000	5,029,000	5,783,000	5,783,000	5,783,000	5,783,000
7 New Customers	<u>20,000</u>	<u>31,000</u>	<u>44,000</u>	<u>52,000</u>	<u>61,000</u>	<u>69,000</u>
8 Rate Rev Subtotal	4,211,000	5,060,000	5,827,000	5,835,000	5,844,000	5,852,000
9 Less Delinquency (2%)	(91,000)	(101,000)	(116,000)	(116,000)	(116,000)	(116,000)
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 Total Revenues	4,490,000	5,334,000	6,086,000	6,094,000	6,103,000	6,111,000
14						
15 % increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
16 Expenses						
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	2,346,000	3,003,000	2,855,000	2,768,000	2,676,000
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	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
33 Total Debt Service	258,000	259,000	260,000	258,000	259,000	256,000
34						
35 Debt Service Coverage	7.89	9.06	11.55	11.07	10.69	10.45
36						
37 Total O&M + Debt	2,713,000	3,247,000	3,343,000	3,497,000	3,594,000	3,691,000
38						
39 Total Net Revenues	1,777,000	2,087,000	2,743,000	2,597,000	2,509,000	2,420,000
40						
41 Transfer to Capital	1,710,000	1,830,000	2,550,000	2,600,000	1,400,000	1,400,000
42						
43 O&M Ending balance	823,000	1,080,000	1,273,000	1,270,000	2,379,000	3,399,000
44						
45 Minimum balance target [4]	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 - 4 months O&M expenses

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

Avg Bill (13 ccf/month)

\$49.40 \$52.75 \$55.40 \$58.13 \$61.05 \$64.16
 7% 5% 5% 5% 5%

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	\$22.30	\$23.42	\$24.59	\$25.82	\$27.11
3/4 Inch Meter	\$20.06	\$22.30	\$23.42	\$24.59	\$25.82	\$27.11
1 Inch Meter	\$20.06	\$22.30	\$23.42	\$24.59	\$25.82	\$27.11
1 1/2 Inch Meter	\$39.16	\$43.55	\$45.73	\$48.02	\$50.42	\$52.94
2 Inch Meter	\$62.04	\$69.05	\$72.50	\$76.13	\$79.94	\$83.94
3 Inch Meter	\$123.06	\$137.05	\$143.90	\$151.10	\$158.66	\$166.59
4 Inch Meter	\$191.71	\$213.55	\$224.23	\$235.44	\$247.21	\$259.57
6 Inch Meter	\$382.43	\$426.05	\$447.35	\$469.72	\$493.21	\$517.87
Irrigation Account Charge:						
5/8 Inch Meter	\$18.92	\$19.98	\$20.98	\$22.03	\$23.13	\$24.29
3/4 Inch Meter	\$18.92	\$19.98	\$20.98	\$22.03	\$23.13	\$24.29
1 Inch Meter	\$18.92	\$19.98	\$20.98	\$22.03	\$23.13	\$24.29
1 1/2 Inch Meter	\$36.87	\$38.91	\$40.86	\$42.90	\$45.05	\$47.30
2 Inch Meter	\$58.38	\$61.63	\$64.71	\$67.95	\$71.35	\$74.92
3 Inch Meter	\$115.73	\$122.20	\$128.31	\$134.73	\$141.47	\$148.54
4 Inch Meter	\$180.27	\$190.35	\$199.87	\$209.86	\$220.35	\$231.37
6 Inch Meter	\$359.54	\$379.65	\$398.63	\$418.56	\$439.49	\$461.46
Metered Usage Charge:						
All Usage (\$/ccf)	\$2.257	\$2.342	\$2.460	\$2.580	\$2.710	\$2.850
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>1,603,900</u>	<u>2,742,100</u>	<u>669,700</u>	<u>610,700</u>
3	Beginning Balance	1,962,400	2,804,300	3,942,500	1,870,100	1,558,200
4						
5	Revenues					
6	Capacity Fees (\$4,850/EDU)	164,900	48,500	48,500	48,500	48,500
7	Transfer from Operating	1,710,000	500,000	1,500,000	1,500,000	1,600,000
8	New Debt Proceeds	<u>0</u>	<u>3,000,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
9	Total Revenues	1,874,900	3,548,500	1,548,500	1,548,500	1,648,500
10						
11	Capital Improvements					
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	0	530,500	819,500	1,125,500
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>309,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
31	Total Distribution/Pipeline Replacements	400,000	865,200	530,500	819,500	1,125,500
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	Admin Projects					
45	Cyber Security	0	61,800	0	0	45,000
46	New Truck	<u>0</u>	<u>0</u>	<u>21,200</u>	<u>0</u>	<u>0</u>
47	Total Admin	0	61,800	21,200	0	45,000
48						
49	Total Capital Improvements	1,033,000	2,410,300	3,620,900	1,860,400	1,395,600
50						
51	Total Net Revenues	841,900	1,138,200	(2,072,400)	(311,900)	252,900
52						
53	Ending Balance	2,804,300	3,942,500	1,870,100	1,558,200	1,811,100
54						

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 – Revised 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 Beginning Operating Balance	\$756,000	\$823,000	\$1,791,000	\$1,677,000	\$1,644,000	\$1,661,000
2						
3 Proposed Increase		5.0%	5.0%	5.0%	5.0%	5.0%
4						
5 Revenues						
6 Rate Revenue	4,191,000	4,401,000	4,621,000	4,852,000	5,095,000	5,350,000
7 New Customers	<u>20,000</u>	<u>27,000</u>	<u>35,000</u>	<u>44,000</u>	<u>53,000</u>	<u>64,000</u>
8 Rate Rev Subtotal	4,211,000	4,428,000	4,656,000	4,896,000	5,148,000	5,414,000
9 Less Delinquency (2%)	(91,000)	(88,000)	(92,000)	(97,000)	(102,000)	(107,000)
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 Total Revenues	4,490,000	4,715,000	4,939,000	5,174,000	5,421,000	5,682,000
14						
15 % increase in operating expenses		budget	3.0%	3.0%	3.0%	3.0%
16 Expenses						
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	1,727,000	1,856,000	1,935,000	2,086,000	2,247,000
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>210,000</u>	<u>210,000</u>	<u>210,000</u>	<u>210,000</u>
33 Total Debt Service	258,000	259,000	470,000	468,000	469,000	466,000
34						
35 Debt Service Coverage	7.89	6.67	3.95	4.13	4.45	4.82
36						
37 Total O&M + Debt	2,713,000	3,247,000	3,553,000	3,707,000	3,804,000	3,901,000
38						
39 Total Net Revenues	1,777,000	1,468,000	1,386,000	1,467,000	1,617,000	1,781,000
40						
41 Transfer to Capital	1,710,000	500,000	1,500,000	1,500,000	1,600,000	1,600,000
42						
43 O&M Ending balance	823,000	1,791,000	1,677,000	1,644,000	1,661,000	1,842,000
44						
45 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 - 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