



# **Town of Discovery Bay Community Services District**

**Water Rate Study  
Draft Report  
May 6, 2016**



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Town of Discovery Bay Community Services District  
1800 Willow Lake Road  
Discovery Bay, CA 94505-9376

Re: Water Rate Study

Bartle Wells Associates (BWA) is pleased to submit to the Town of Discovery Bay Community Services District (Town) the attached Water Rate Study. The report presents BWA's analysis of the capital and operating costs of the water utility. It lists the assumptions and rate design objectives used in BWA's analysis. The report recommends updating rates and charges to more accurately recover the costs of providing service to the Town's customers. Recommendations were developed with substantial input from Town staff.

BWA finds that the water rates and charges proposed in our report to be based on the cost of service, follow generally accepted rate design criteria, and adhere to the substantive requirements of Proposition 218. BWA believes that the proposed rates are fair and reasonable to the Town's customers.

I enjoyed working with you on the rate study and appreciate the assistance and cooperation of Town staff throughout the project. Please contact me if you ever have any future questions about this study and the rate recommendations.

Yours truly,

Alison Lechowicz  
Vice President  
Bartle

Wells

Associates

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## Executive Summary

Bartle Wells Associates (BWA) was engaged by the Town of Discovery Bay Community Services District (Town) to review the rates and charges of the water enterprise fund and to recommend updates to better reflect the cost of providing service to the Town's customers. Throughout this report, BWA makes a number of recommendations and conclusions which are provided below. Ultimately, BWA recommends increasing the typical single family monthly bill by 15% in fiscal years (FY) 2017 and 2018 and 12% annually in FY2019 to FY2021. These rate increases are based on the cost of service, are fair to customers, and meet the substantive requirements of Proposition 218. A schedule of recommended rates is provided as Table ES-1.

### Key Findings

- The Town is in adequate financial shape, has positive net revenues, and has healthy fund reserves.
- The Town has made efforts to comply with mandatory water reductions set forth by the State Water Resource Control Board. The Town is required to reduce potable water usage by 29%. Drought water use is reflected in this report.
- The Town is planning to convert about 3,700 unmetered customers to metered customers in FY2016 and FY2017.

### Key Recommendations

- The typical single family monthly bill is recommended to increase by 15% in fiscal years (FY) 2017 and 2018 and 12% annually in FY2019 to FY2021 to fund capital projects and recoup revenues lost due to the drought.
- Proposition 218 allows agencies to implement rates and charges that are lower than those approved via the Prop 218 hearing process. If actual Town water utility costs are lower than the projected costs included in this rate study or water use is higher than projected, the Town has the legal authority to implement lower rates without conducting public noticing or a public hearing.
- This rate study assumes that the Town will install approximately 3,700 meters in FY2017 on currently unmetered parcels. BWA recommends that the Town provide water usage data from the newly installed meters to these customers throughout FY2017 but continue to charge these customers the unmetered rate. In FY2018, BWA recommends that the Town charge all customers the metered rates and eliminate the unmetered rate schedule.
- BWA finds the Town's rate setting methodology to be reasonable, aside from one proposed adjustment. BWA recommends updating fire protection costs based on guidelines set forth by the American Water Works Association. This change results in higher fixed meter charges for irrigation customers.
- The Town should continue to meet or exceed debt coverage legal requirements.
- The Town should maintain an operating reserve of four months of operating expenses.
- The Town should continue to fund repair and replacement capital improvements to maintain and upgrade the water system.

**TABLE ES-1  
PROPOSED WATER RATE INCREASES**

Avg Bill Increase (1 Inch Meter, 15 ccf/mo)

\$32.66                      15%                      15%                      12%                      12%                      12%

\$37.55                      \$43.19                      \$48.25                      \$53.92                      \$60.27

WATER	Current		Proposed FY 2016/17		Proposed FY 2017/18		Proposed FY 2018/19		Proposed FY 2019/20		Proposed FY 2020/21	
	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)
<b>Residential Unmetered</b>												
Parcel Size (Square Fee/DU)												
Condos w/irrigation	\$32.86	\$394.28	\$36.55	\$438.60								
Condos w/o irrigation	\$21.52	\$258.18	\$23.91	\$286.92								
Under 5,000	\$32.86	\$394.28	\$36.55	\$438.60								
5,000 - 10,000	\$41.56	\$498.66	\$46.03	\$552.36								
10,001 - 15,000	\$50.25	\$603.02	\$55.51	\$666.12								
Over 15,000,	\$50.25	\$603.02	\$55.51	\$666.12								
Vacant	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00
Plus Each Additional 1,000	\$2.90	\$34.80	\$3.21	\$38.54								
<b>WATER All Metered</b>	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)
Non-irrigation Account Charge:												
5/8" Inch Meter	\$9.98		\$13.85		\$16.20		\$18.02		\$20.06		\$22.35	
1 Inch Meter	\$9.98		\$13.85		\$16.20		\$18.02		\$20.06		\$22.35	
1 1/2 Inch Meter	\$19.98		\$26.73		\$31.43		\$35.07		\$39.16		\$43.74	
2 Inch Meter	\$31.96		\$42.15		\$49.68		\$55.50		\$62.04		\$69.37	
3 Inch Meter	\$63.91		\$83.29		\$98.34		\$109.99		\$123.06		\$137.72	
4 Inch Meter	\$99.86		\$129.58		\$153.09		\$171.30		\$191.71		\$214.63	
6 Inch Meter	\$199.72		\$258.15		\$305.18		\$341.60		\$382.43		\$428.26	
Irrigation Account Charge:												
5/8" Inch Meter	\$3.02		\$13.08		\$15.29		\$17.00		\$18.92		\$21.07	
1 Inch Meter	\$3.02		\$13.08		\$15.29		\$17.00		\$18.92		\$21.07	
1 1/2 Inch Meter	\$6.04		\$25.18		\$29.60		\$33.03		\$36.87		\$41.18	
2 Inch Meter	\$9.67		\$39.68		\$46.76		\$52.23		\$58.38		\$65.27	
3 Inch Meter	\$19.34		\$78.35		\$92.50		\$103.45		\$115.73		\$129.52	
4 Inch Meter	\$30.21		\$121.86		\$143.97		\$161.08		\$180.27		\$201.81	
6 Inch Meter	\$60.42		\$242.73		\$286.93		\$321.17		\$359.54		\$402.62	
Metered Usage Charge:												
All Usage		\$1.512		\$1.580		\$1.799		\$2.015		\$2.257		\$2.528
Newly Metered Customers Meter Install Fee (10-year payback)					\$9.00		\$9.00		\$9.00		\$9.00	

DU = Dwelling Unit  
ccf = 100 cubic feet = 748 gallons



## Rate Setting Legislation and Principles

In conducting this water rate study, BWA adheres to the Proposition 218 requirements as described in this section. Subsequent sections provide the detailed, cost of service basis for BWA's rate recommendations.

### 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 or increasing property related taxes, assessments, fees and charges. For many years, there was no legal consensus on whether water rates met the definition of "property related fees". In July 2006, the California Supreme Court essentially confirmed that Proposition 218 applies to water rates.

BWA recommends that the Town follow the procedural requirements of Proposition 218 for all water rate changes. These requirements include:

- **Noticing Requirement:** - The Town must mail a notice of proposed rate increases to all affected property owners. The notice must specify the basis of the fee, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
- **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.
- **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 submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established a number of substantive requirements that are generally deemed to apply to utility service charges, including:

- **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".
- **Intended Purpose** - Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
- **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.
- 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. Standby charges shall be classified as "assessments" which are governed by Article 13D Section 4.

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

## Rate Development Principles

In reviewing the Town's current water rates and finances, BWA used the following criteria in developing our recommendations:

1. *Revenue Sufficiency:* Rates should recover the annual cost of service and provide revenue stability.
2. *Rate Impact:* While rates are calculated to generate sufficient revenue to cover operating and capital costs, they should be designed to minimize, as much as possible, the impacts on ratepayers.
3. *Equitable:* Rates should be fairly allocated among all customer classes based on their estimated demand characteristics. Each user class only pays its proportionate share.
4. *Practical:* Rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer and easy to understand.
5. *Provide Incentive:* Rates provide price signals which serve as indicators to conserve water and to use water efficiently.

## Background

The Town provides water supply, treatment, and delivery to approximately 14,000 residents. The Town last conducted a water rate study in June 2013 which set rates through FY2017. This report provides recommended rates through FY2021.

The Town provides service to about 6,100 single family, condominium, commercial, irrigation, and vacant parcels or accounts within the Town. About 2,200 parcels are metered and about 3,900 are unmetered. Metered customers are billed monthly for water use and are also charged a fixed fee which is billed on the annual property tax roll. Unmetered water customers are billed annual fixed charges on the property tax roll.

## Current Rates and Revenues

The Town is projected to collect about \$2.76 million in revenues (not accounting for delinquencies) from water service charges, see Table 1. In recent years, water use has decreased due to drought and metered water rate revenues have declined. For example, the 2013 Water Rate Study estimated annual metered water use of 686,000 hundred cubic feet (ccf, one ccf is 748 gallons). Water use in calendar year 2015 was about 462,000.<sup>1</sup> For FY2016, water use charges are projected to make up about 25% of water utility rate revenues.

Metered customers also pay fixed monthly charges based on the size of their water meters. Meter charges are projected to make up about 10% of the FY2016 water rate revenues. The base meter size is 1 inch, which is the typical residential meter size. The Town provides service to commercial and irrigation meters up to 4 inches. The vast majority of the Town's metered customers are residential; about 2,100 of the 2,200 meters in the Town serve residential customers. Most of the non-residential customers are irrigation customers. Irrigation customers pay lower monthly meter charges than commercial customers because they do not receive fire protection water service.

The Town collects about \$1.8 million, or about 65% of the water rate revenue, from unmetered customer charges. The Town has about 3,900 unmetered parcels that are charged for water service on the annual property tax bill. Unmetered customers are charged based on parcel type: condos with and without irrigation, vacant, and unmetered parcels based on lot size. In FY2017, the Town intends to meter 3,500 existing unmetered customers plus about 210 new customers from the Sand Bay Isle development. The remaining 370 vacant parcels would be metered by the developer when those parcels develop. Thus, vacant parcel metering is not included in this rate study.

Due to drought conditions and the meter roll out, the Town could face revenue volatility. As discussed above, about 25% of current rate revenues are collected from metered water rates. Due to the meter roll out program the percent of revenues collected from water rates will increase to about 65%.

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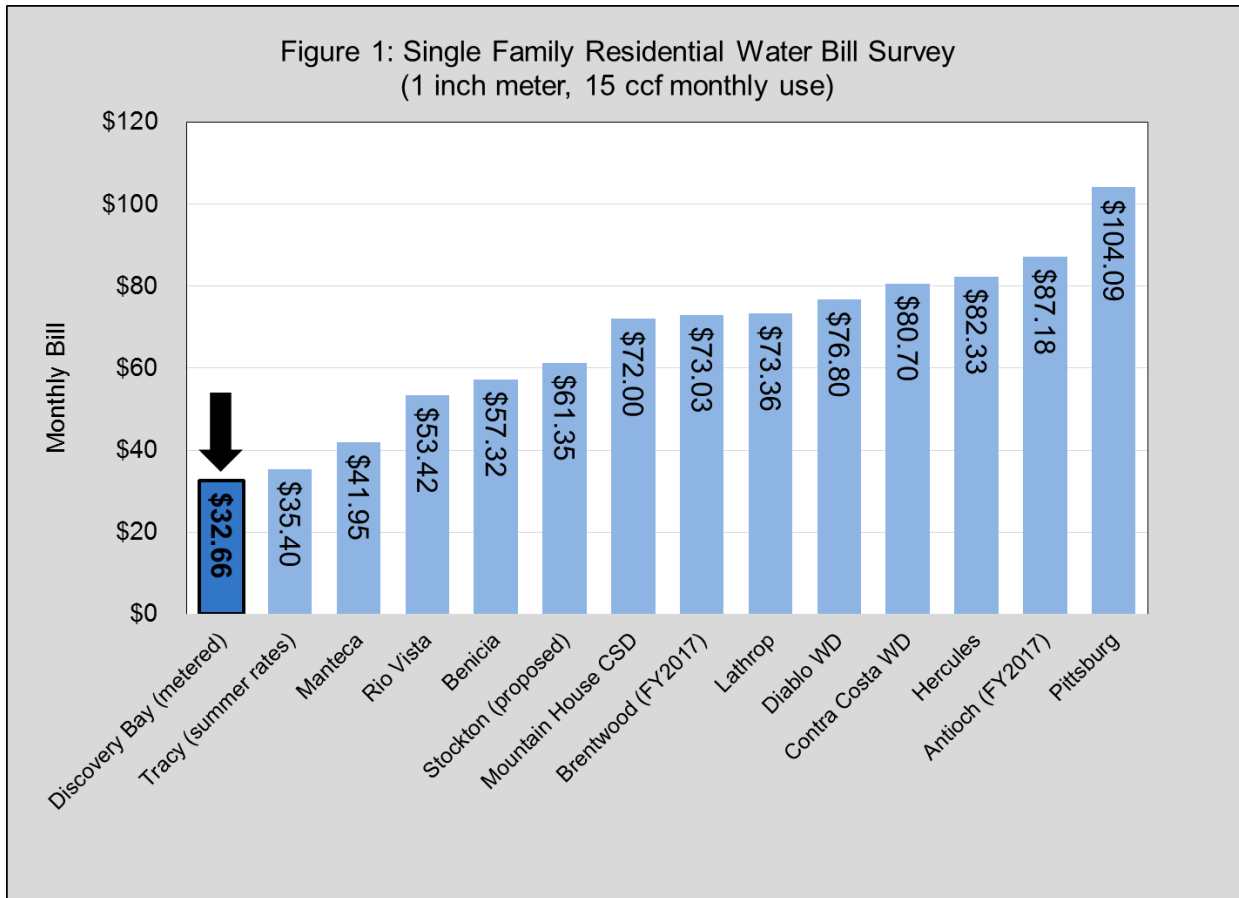
<sup>1</sup> The Town reduced its metered water use to 462,000 ccf annually with the addition of 200 new customers.

**Table 1: Current FY2016 Service Charge Revenues  
Town of Discovery Bay  
Water Rate Study**

<b>Meter Size</b>	<b>No/ of Meters</b>	<b>Monthly Fee</b>	<b>Meter Fee Annual Revenue</b>	<b>Metered Rate (\$/ccf) Estimated Annual Water Use (ccf)</b>	<b>\$1.512 Annual Water Use Fees</b>
Residential					
1"	<u>2,089</u>	\$9.98	\$250,179	309,418	\$468,000
Subtotal					
Residential	2,089				
Nonresidential					
Sandy Cove Shop. Center					
1"	1	\$9.98	\$120		
2"	7	\$31.96	\$2,685		
Lakeview Business Plaza					
4"	1	\$99.86	\$1,198		
Other Metered					
1"	6	\$9.98	\$719		
1.5"	7	\$19.98	\$1,678		
2"	2	\$31.96	\$767		
3"	3	\$63.91	\$2,301		
4"	1	\$99.86	\$1,198		
Irrigation					
5/8"	1	\$3.02	\$36		
1"	19	\$3.02	\$689		
1.5"	15	\$6.04	\$1,087		
2"	25	\$9.67	\$2,901		
3"	2	\$19.34	\$464		
4"	<u>5</u>	\$30.21	<u>\$1,813</u>		
Subtotal					
Nonresidential	95		\$17,655	152,266	\$230,000
Total Metered Customers	<b>2,184</b>		<b>\$267,834</b>	<b>461,684</b>	<b>\$698,000</b>
<b>Unmetered Water</b>	<b>Number of Parcels</b>	<b>Annual Fee</b>	<b>Total Annual Revenues</b>		
Condos w/irrigation	50	\$394.28	\$20,000		
Condos w/o irrigation	174	\$258.18	\$45,000		
Vacant & Waterways	372	\$176.00	\$65,000		
Unmetered Water					
<5,000 SF	87	\$394.28	\$34,302		
5,001 to 10,000 SF	2,867	\$498.66	\$1,429,658		
>10,000 SF	<u>340</u>	\$603.02	<u>\$205,027</u>		
<b>Total</b>	<b>3,890</b>		<b>\$1,798,987</b>		
			<b>Summary</b>		
		Metered	\$965,834		
		Unmetered	\$1,798,987		
		2% Delinquency	<u>(\$55,000)</u>		
		<b>Total</b>	<b>\$2,709,822</b>		

Typical water use and metered customer bills vary by season. In calendar year 2015, average metered residential summer water use peaked at 27 ccf per month and dipped to a low of 10 ccf per month during the winter. To illustrate bill impacts, BWA assumes typical residential water use of 15 ccf per

month. Under current rates, the typical residential customer would pay a \$9.98 fixed charge plus \$22.68 in water usages charges resulting in a total monthly bill of \$32.66. Figure 1 provides a residential bill survey comparing typical bills across the region. The Town of Discovery Bay currently has the lowest residential water bill.



## Cost of Service

Under Proposition 218, the Town’s water rates and charges must be based on the cost of providing water service. Water service costs consist of the following:

- Operating costs including administration, maintenance, the service contract with Veolia, and meter reading
- Capital costs including water meters, wells, treatment improvements and pipelines replacements
- Debt service costs on the Town’s 2012 Revenue Bonds and projected new debt
- Maintaining adequate operating and capital reserves

The Town’s budgeted operating and capital reserves are provided in Table 2. In FY2016, the water utility has about \$2.9 million in reserves. It is recommended that the Town accumulate additional water fund reserves over the next five years to account for uncertainty regarding water use due to drought and unforeseen capital improvement projects that may arise from the Town’s upcoming water master plan.

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

<b>Reserves</b>	<b>FY2015/16 Budget</b>	<b>Water</b>	<b>Wastewater</b>
Water & Wastewater Operating Reserves [1]	\$4,180,213	\$1,672,085	\$2,508,128
Sewer Infrastructure Replacement Fund	\$950,000	\$0	\$950,000
Pumps/Motors Replacement Fund	\$240,000	\$240,000	\$0
Water Infrastructure Replacement Fund	\$859,143	\$859,143	\$0
Generators Replacement Fund [1]	\$75,000	\$30,000	\$45,000
Facilities & Vehicles Replacement Fund [1]	\$252,204	\$100,882	\$151,322
<b>Operating Reserves Total</b>	<b>\$4,180,213</b>	<b>\$1,672,085</b>	<b>\$2,508,128</b>
<b>Infrastructure Replacement Total</b>	<b>\$2,376,347</b>	<b>\$1,230,025</b>	<b>\$1,146,322</b>
<b>Total Reserves</b>	<b>\$6,556,560</b>	<b>\$2,902,110</b>	<b>\$3,654,450</b>

1 - 40% of funds allocated to the water enterprise

Table 3 establishes the Town’s water capital costs. Major projects include the water meter roll out (\$3 million), Well 8 (\$2.1 million) and SCADA system upgrades (\$0.5 million). It is envisioned that the Town will finance the meter roll out program in FY2017 and Well 8 in FY2020. All other projects will be cash funded from available revenues including capacity fee revenues from new customers connecting to the water system, water rate revenues (expressed as a transfer from operating), and capital reserves.

The water fund capital cash flow over the next five years is provided in Table 3. Historically, the Town has maintained water capital reserves of over \$1 million and the rate plan developed in this report would meet that target. Beginning of FY2016, the Town had about \$1.2 million in water infrastructure reserves. By the end of FY2021, the Town is projected to accumulate about \$3.7 million in capital

reserves, an increase of about \$2.5 million. This additional reserve can be used to fund Plant 1 improvements or projects that may be identified in the upcoming water master plan. Alternatively, the reserve can be used to cash fund Well 8 instead of debt financing or could be used to defease (pay off) the 2012 Revenue Bonds.

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

	Current FY2016	Projected FY2017	Projected FY2018	Projected FY2019	Projected FY2020	Projected FY2021
<b>Beginning Balance</b>	\$1,230,000	\$1,139,000	\$1,196,000	\$1,449,000	\$2,304,000	\$5,062,000
<b>Revenues</b>						
Capacity Fees	40,000	20,000	53,000	55,000	56,000	56,000
Transfer from Operating	0	500,000	500,000	800,000	800,000	800,000
Debt Proceeds [1]	0	<u>3,000,000</u>	0	0	<u>2,100,000</u>	0
<b>Total revenues</b>	40,000	3,520,000	553,000	855,000	2,956,000	856,000
<b>Capital Improvements</b>						
Meter Equipment & Installation		3,000,000	0	0	0	0
Truck for Meter Reading	0	30,000	0	0	0	0
Repair and Replacement Projects						
Well 8	0	0	0	0	198,000	1,936,000
Portable Light Trailer [2]	6,000	0	0	0	0	0
Vehicle Storage [2]	0	80,000	0	0	0	0
Storm Drain repairs at Newport WTP	0	8,000	0	0	0	0
Newport WTP Filter (2)	0	0	50,000	0	0	0
Willow Lake WTP Filter (3)	0	75,000	0	0	0	0
SCADA	0	250,000	250,000	0	0	0
Willow Lake WTP Stabilization - soils	0	<u>20,000</u>	0	0	0	0
<b>Total Repair and Replacement Projects</b>	6,000	433,000	300,000	0	198,000	1,936,000
Veolia Recommended Projects						
Newport WTP PLC	125,000	0	0	0	0	0
Willow Lk WTP PLC	0	0	0	0	0	0
Newport WTP Filter Replacements	0	0	0	0	0	0
Willow Lk WTP Filter Replacements	0	0	0	0	0	<u>259,000</u>
<b>Total Veolia Projects</b>	125,000	0	0	0	0	259,000
<b>Total Capital Improvements</b>	131,000	3,463,000	300,000	-	198,000	2,195,000
<b>Total net revenues</b>	(91,000)	57,000	253,000	855,000	2,758,000	(1,339,000)
<b>Ending Balance</b>	1,139,000	1,196,000	1,449,000	2,304,000	5,062,000	3,723,000

1 - Debt proceeds for Meter Installation in FY2017 and Well 8 in FY2020  
2 - Water Fund share 40%

Table 4 provides the debt service estimates for the water meter roll out and Well 8. It is assumed that the water meters will be financed over ten years at 3% interest and Well 8 will be financed over fifteen years at 3.5% interest. These estimates include high interest rates and issuance costs that reflect a worst case scenario for financial planning purposes. The Town could also consider cash funding the projects or financing over a shorter term. This rate study does not commit the Town to financing the water meters.

Table 4 also provides the calculation of the monthly meter installation fee for newly metered customers. To avoid cross subsidies in which currently metered customers would pay debt service costs for newly metered customers, the Town should charge newly metered customers a separate meter installation fee. Based on a ten year financing, the meter installation fee would be \$9.00 monthly. After the ten year payback period, the installation fee would be eliminated. As stated above, the meter financing is based on worst case terms and conditions. If Town secures more favorable financing, the Town could implement a lower meter installation fee.

<b>Table 4: Estimated Annual Debt Service Town of Discovery Bay Water Rate Study</b>		
	<b>Water Meters</b>	<b>Well 8</b>
Project Cost	3,000,000	2,100,000
Issuance Costs	<u>100,000</u>	<u>100,000</u>
Total Financing	3,100,000	2,200,000
Term	10	15
Rate	3.00%	3.50%
Annual Debt Service	\$363,415	\$191,015
Annual Debt Service	\$363,415	
Number of Meters	3,728	
Monthly Meter Installation Fee	\$8.13	
Rounded Up	\$9.00	

Table 5 provides the water fund operating cash flow including rate and non-rate revenues, operating costs, debt service costs, and transfers to the capital fund. Non-rate revenues include Zone 9 reimbursements and miscellaneous revenues for items such as delinquency fees and service calls. Non-rate revenues are estimated at \$101,000 annually and are used to offset rate increases. Total current revenues are budgeted at \$2.8 million and are proposed to increase to about \$4.9 million by FY2021.

Table 5 also presents the water utility’s operating costs consisting of staffing, maintenance, the operations contract with Veolia, utilities (electricity), and meter reading. Operating costs are projected to increase from about \$2.6 million (current budgeted) to about \$3.1 million over the next five years.

The financial goal for the Town’s water fund is to meet operating and capital costs while maintaining a good credit rating and adequate reserves for emergencies. The debt service coverage ratio for the water utility is provided below. Debt service coverage is calculated as net operating revenues divided by the annual debt service payment. At minimum, BWA recommends that public agencies maintain a coverage ratio of at least 1.25 times the annual debt payment. Ideally, the Town should target a coverage ratio of 1.5 times the annual payment to maintain a strong credit rating. As shown below, the proposed revenue plan is projected to exceed this goal for the upcoming five years. The rate plan is also proposed to maintain an operating reserve in excess of the minimum targeted amount of four months of operating expenses.



**Table 5: Water Operating Cash Flows**  
**Town of Discovery Bay**  
**Water Rate Study**

	Current FY2016	Projected FY2017	Projected FY2018	Projected FY2019	Projected FY2020	Projected FY2021
<b>Beginning Operating Balance</b>	\$1,672,000	\$1,819,000	\$1,788,400	\$1,642,200	\$1,479,200	\$1,450,200
<b>Revenues</b>						
Rate Revenue	2,700,000	3,134,000	3,094,000	3,470,000	3,893,000	4,368,000
Less Delinquency (2%)	(54,000)	(63,000)	(62,000)	(69,000)	(78,000)	(87,000)
Vacant Parcel	65,000	64,000	62,000	60,000	58,000	57,000
Meter Reading (\$1/mo)	0	26,000	71,000	71,000	71,000	71,000
Meter Install Fees	0	0	364,000	364,000	364,000	364,000
Zone 9 Reimbursement	11,000	11,000	11,000	11,000	11,000	11,000
Other & Misc	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>
<b>Total Revenues</b>	2,812,000	3,262,000	3,630,000	3,997,000	4,409,000	4,874,000
% increase in operating expenses	budget	estimate	3.0%	3.0%	3.0%	3.0%
<b>Expenses</b>						
Operating Expenses						
Admin & Inter Govt. & Board	306,000	306,000	315,000	324,000	334,000	344,000
Staffing & Consulting Serv	676,000	684,000	705,000	726,000	748,000	770,000
New Water Technician [1]	0	41,600	83,200	86,000	89,000	92,000
Operations & Maint	674,000	667,000	687,000	708,000	729,000	751,000
Utilities	320,000	320,000	330,000	340,000	350,000	361,000
Service Contract [2]	600,000	645,000	664,000	684,000	705,000	726,000
Meter Reading [3]	<u>0</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>	<u>40,000</u>
Total Operating Expenses	2,576,000	2,703,600	2,824,200	2,908,000	2,995,000	3,084,000
Net Operating Revenues	236,000	558,400	805,800	1,088,000	1,413,000	1,788,000
Debt Service						
2012 Rev. Bonds Debt Service	89,000	89,000	89,000	89,000	89,000	89,000
New Debt Service	<u>0</u>	<u>0</u>	<u>363,000</u>	<u>363,000</u>	<u>554,000</u>	<u>554,000</u>
Total Debt Service	89,000	89,000	452,000	452,000	643,000	643,000
Debt Service Coverage	2.65	6.27	1.78	2.41	2.20	2.78
<b>Total Expenses</b>	2,665,000	2,792,600	3,276,200	3,360,000	3,638,000	3,727,000
<b>Total Net Revenues</b>	147,000	469,400	353,800	637,000	770,000	1,145,000
<b>Transfer to Capital</b>	0	500,000	500,000	800,000	800,000	800,000
<b>O&amp;M Ending balance</b>	1,819,000	1,788,400	1,642,200	1,479,200	1,450,200	1,797,200
<b>Minimum balance target [4]</b>	859,000	901,000	941,000	969,000	998,000	1,028,000

1 - Additional water technician staff. FY2017: 20 hrs per week at \$40/hr (fully burdened); FY2018: 40 hrs per week at \$40/hr (fully burdened); FY2019-2021 escalated by 3% annually

2 - Assumed increase in FY2016 due to contract renegotiation

3 - \$0.89/month per meter (newly metered customers)

4 - 4 months O&M expenses

## Cost Allocation

The prior section of this report develops the cost of service and total rate revenue needed to provide safe and reliable water service. This section reviews the allocation of costs to fixed and volume rates and the allocation of costs to fire protection service and irrigation water service.

## Fixed and Variable Costs

The Town bills its metered customers a fixed charge based on the size of the water meter and a volume rate charged to each hundred cubic foot of water used. As a first step in calculating the rates, Table 6 allocates water utility costs to fixed and variable (volume) cost centers. Meter reading costs are not included in Table 6 because meter reading costs will be recovered from a separate \$1 per month charge. Fixed costs include staffing, debt service, capital projects, and 75% of operations and maintenance and the Veolia service contract. These costs are incurred regardless of how much water the Town consumes. Variable costs are dependent on water consumption and include budgeted items such as utilities (electricity) and 25% of operations and maintenance and the Veolia service contract. Based on this first round of cost allocation, about \$648,000, 20%, in expenses are identified as variable costs.

In the second round of cost allocation, BWA reviewed water consumption patterns and assigned some fixed costs to be recovered from the volume rate. The Town’s base indoor/winter water use makes up about 55% of total metered water use under drought conditions. The Town makes water system operations, management, repair, and maintenance decisions based on long-term stable demand. Thus, 55% of fixed costs can be collected from the volume rate to reflect the costs associated with long-term, stable water use. The final proposed allocation is 36% cost recovery from fixed charges and 64% cost recovery from the volume rate. For comparison, in FY2016, the Town is projected to collect about \$700,000 in water volume charges (72%) and about \$268,000 in meter charges (28%) from currently metered customers (see Table 1). The cost allocation shown in Table 6 would increase cost recovery from fixed charges for metered customers.

BWA proposes a two year transition from the current cost allocation to the proposed cost to mitigate impacts on ratepayers. Table 7 provides the cost allocation transition and proposed rate revenue requirement for FY2017 and FY2018. Current FY2016 rate revenues are projected to be about \$2.7 million. Rate revenues are proposed to increase to about \$3.1 million for FY2017 and FY2018. Although revenues are not proposed to increase in FY2018, there is a proposed rate increase in FY2018. In FY2018, all customers will be fully transitioned to metered rates and will be billed for actual water use. Due to this billing change, customers will be incentivized to reduce their water use. BWA estimates that the typical customer will reduce use from 21 ccf to 15 ccf monthly following installation of the meter. The Town must then recover variable costs over a smaller base of water use resulting in a higher rate.

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**Table 6: Allocation to Fixed and Variable Cost Centers  
Town of Discovery Bay  
Water Rate Study**

<b>Cost</b>	<b>FY2017 Estimated</b>	<b>Fixed</b>	<b>Variable</b>
Operating Expenses			
Admin & Inter Govt. & Board	306,000	100%	0%

Staffing & Consulting Services	684,000	100%	0%
New Water Technician	41,600	100%	0%
Operations & Maintenance	667,000	75%	25%
Utilities	320,000	0%	100%
Service Contract	<u>645,000</u>	<u>75%</u>	<u>25%</u>
Total Operating Expenses [1]	2,663,600	2,015,600	648,000
Debt Service			
2012 Revenue Bonds Debt Service	<u>89,000</u>	<u>100%</u>	<u>0%</u>
Total Debt Service	89,000	89,000	0
Transfer to Capital	<u>500,000</u>	<u>100%</u>	<u>0%</u>
	500,000	500,000	0
Subtotal Expenses	3,252,600	2,604,600	648,000
Cost recovery adjustment based on maintenance and management of long- term water demand		<u>-55%</u>	
		(1,432,500)	1,432,500
Total	3,252,600	1,172,000	2,080,500
<b>Proposed Cost Allocation</b>		<b>36%</b>	<b>64%</b>

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1 – Does not include meter reading costs which will be funded from a separate \$1/month charge.

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**Table 7: Revenue Requirement  
Town of Discovery Bay  
Water Rate Study**

	Estimated FY2016	FY2017	FY2018
<b>Non-rate Revenues</b>			
Use of Reserves		29,300	145,000
Vacant Parcel Charge		64,000	62,000
Meter Reading		26,000	71,000
Meter Reimbursements		0	364,000
Other Non-Rate Revenue		<u>101,000</u>	<u>101,000</u>
<b>Total Non-rate Revenues</b>		<b>220,300</b>	<b>743,000</b>
<b>Expenses</b>			
Operating Costs		2,703,600	2,824,200
Debt Service Costs		89,000	452,000
Capital Costs		500,000	500,000
Contribution to Reserves		<u>0</u>	<u>0</u>
<b>Total Costs</b>		<b>3,292,600</b>	<b>3,776,200</b>
<b>Net</b>		<b>(3,072,300)</b>	<b>(3,033,200)</b>
<b>Revenue Requirement</b>		<b>3,072,300</b>	<b>3,033,200</b>
<b>Rate Revenue Requirement w/2% delinquency</b>	<b>2,710,000</b>	<b>3,135,000</b>	<b>3,095,000</b>
% increase		15.68%	-1.28%
Fixed (30%)		941,000	
Volume (70%)		2,194,000	
Fixed (35%)			1,115,000
Volume (65%)			1,980,000

## Fire Protection

The Town provides water service to irrigation customers and residential and commercial customers. Residential and commercial customers benefit from the water system via both the provision of water and from fire protection service. In the engineering and construction of the water system, the Town upsized its water infrastructure to meet fire flow water demands. Irrigation customers do not require fire service and should not pay infrastructure costs associated with fire protection.

In recent years, the American Water Works Association (AWWA) has revised its recommended methodology for calculating fire protection costs. The AWWA M1 Manual provides a formula from the National Board of Fire Underwriters for determining the required fire flow of the Town based on population. Based on the formula, BWA calculates a fire flow of 3,674 gallons per minute (gpm). The Town's 2012 Water Master Plan provides a peak hour demand of 9,150 gpm. The ratio of the peak hour demand to fire flow demand is 2.49. Based on this ratio, the AWWA methodology suggest fire protection service costs equal to 6% of gross revenues (AWWA M1 Manual, Sixth Edition, page 143). Because the Town recovers infrastructure costs from fixed charges (instead of total gross revenues), BWA's proposed rate design deducts 6% from irrigation meter charges for fire protection.

## Rate Design

This section calculates fixed meter charges, water volume rates, and unmetered customer charges. It is envisioned that unmetered customers will continue to be charged the unmetered rates throughout FY2017. By FY2018, the Town projects that all customers will be metered and the unmetered rate schedule will be eliminated. The following subsections calculate the proposed fixed meter charges, volume rates, and FY2017 unmetered customer charges.

### Fixed Meter Charges

Consistent with the Town’s historical rate design and AWWA recommended methodology, fixed meter charges are scaled based on the capacity of the water meter. Capacity of the water meter represents the total amount of water that can pass through the meter at a given time. Capacity of the meter is proxy for the customer benefit derived from water infrastructure. Table 8 provides the AWWA recommended meter capacity ratios. The Town’s base water meter is 1 inch<sup>2</sup> and larger meter sizes are scaled to the capacity of the 1 inch meter. For example, a 6 inch meter can deliver 20 times the amount of water as a 1 inch meter. For irrigation customers, fire service costs are deducted from the meter ratios.

**Table 8: Water Meter Capacity Ratios  
Town of Discovery Bay  
Water Rate Study**

Meter Size	Ratio [1]	Less Fire Service (94%)
Up to 1 Inch	1.00	0.94
1 1/2 Inch	2.00	1.88
2 Inch	3.20	3.01
3 Inch	6.40	6.02
4 Inch	10.00	9.41
6 Inch	20.00	18.81

1 - AWWA meter capacity ratio

Tables 9 and 10 use the meter capacity ratios shown above to calculate the base (1 inch) meter charge for FY2017 and FY2018, respectively. The proposed meter capacity ratios are multiplied by the number of customers to calculate a total number of equivalent meters. It is assumed that all unmetered customers will be served by 1 inch meters. The fixed charge revenue requirement is divided by the total number of meter equivalents to calculate the 1 inch meter charge. The charges for larger meters are calculated as the meter ratio multiplied by the 1 inch meter charge, see Table 11. The rates for FY2019 to FY2021 include 12% annual increases over the FY2018 rates. By FY2019, the cost allocation transition is complete and all rates are increased by the same percent.

**Table 9: FY2017 Fixed Meter Charge Calculation**

<sup>2</sup> A small number of commercial customers are served by 5/8 inch meters. Per Town policy, 5/8 inch meters are charged the 1 inch meter rate.

**Town of Discovery Bay  
Water Rate Study**

<b>Customer</b>	<b>No. of Customers [1]</b>	<b>Water Meter Capacity</b>	<b>Fire Service</b>	<b>Proposed Ratio</b>	<b>FY2017 Total Equivalents [2]</b>
<b>Metered</b>					
Residential & Commercial					
1"	2,101	0.94	0.06	1.00	2,101.00
1.5"	7	1.88	0.12	2.00	14.01
2"	9	3.01	0.19	3.20	28.82
3"	3	6.02	0.38	6.40	19.21
4"	2	9.41	0.60	10.01	20.01
6"	0	18.81	1.20	20.01	0.00
<b>Total</b>	<b>2,122</b>				<b>2,183.06</b>
Irrigation					
5/8"	6	0.94		0.94	5.64
1"	24	0.94		0.94	22.56
1.5"	15	1.88		1.88	28.23
2"	25	3.01		3.01	75.26
3"	2	6.02		6.02	12.04
4"	5	9.41		9.41	47.03
6"	0	18.81		18.81	0.00
<b>Total</b>	<b>77</b>				<b>190.75</b>
<b>Unmetered</b>					
Condos w/irrigation	50	0.94	0.06	1.00	50.00
Condos w/o irrigation	174	0.94	0.06	1.00	174.00
Unmetered Water					
<5,000 SF	87	0.94	0.06	1.00	87.00
5,001 to 10,000 SF	2,867	0.94	0.06	1.00	2,867.00
Sand Bay Isle (new)	210	0.94	0.06	1.00	210.00
>10,000 SF	340	0.94	0.06	1.00	340.00
	3,728				3,728.00
<b>Total</b>	<b>5,927</b>				<b>6,102</b>
FY2017 Fixed Charge Revenue Requirement (see Table 7)					\$941,000
Rate (\$/mo)					\$12.85

1 – The Town is projected to add ten new irrigation customers and five new residential customers in FY2017.

2 – Proposed ratio multiplied by the number of customers

**Table 10: FY2018 Fixed Meter Charge Calculation  
Town of Discovery Bay  
Water Rate Study**

<b>Customer</b>	<b>No. of Customers [1]</b>	<b>Water Meter Capacity</b>	<b>Fire Service</b>	<b>Proposed Ratio</b>	<b>FY2018 Total Equivalents [2]</b>
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<b>Metered</b>					
Residential & Commercial					
1"	5,834	0.94	0.06	1.00	5,834.00
1.5"	7	1.88	0.12	2.00	14.01
2"	9	3.01	0.19	3.20	28.82
3"	3	6.02	0.38	6.40	19.21
4"	2	9.41	0.60	10.01	20.01
6"	0	18.81	1.20	20.01	0.00
<b>Total</b>	<b>5,855</b>				<b>5,916.06</b>
Irrigation					
5/8"	11	0.94		0.94	10.34
1"	24	0.94		0.94	22.56
1.5"	15	1.88		1.88	28.23
2"	25	3.01		3.01	75.26
3"	2	6.02		6.02	12.04
4"	5	9.41		9.41	47.03
6"	0	18.81		18.81	0.00
<b>Total</b>	<b>82</b>				<b>195.45</b>
<b>Unmetered [2]</b>					
Condos w/irrigation	0	0.94	0.06	1.00	0.00
Condos w/o irrigation	0	0.94	0.06	1.00	0.00
Unmetered Water					
<5,000 SF	0	0.94	0.06	1.00	0.00
5,001 to 10,000 SF	0	0.94	0.06	1.00	0.00
Sand Bay Isle (new)	0	0.94	0.06	1.00	0.00
>10,000 SF	0	0.94	0.06	1.00	0.00
	0				0
<b>Total Fixed Charge Eq</b>	<b>5,937</b>				<b>6,112</b>
FY2018 Fixed Charge Revenue Requirement (see Table 7)					\$1,115,000
Rate (\$/mo)					\$15.20

1 – It is projected that the Town will add five new residential and five new irrigation customers annually in FY2018 and beyond.  
2 – By FY2018, it is projected that the Town will be fully metered and the unmetered rate schedule will be eliminated.

**Table 11: Water Meter Capacity Charges  
Town of Discovery Bay  
Water Rate Study**

<b>Meter Size</b>	<b>FY2017</b>	<b>FY2018</b>
Residential and Commercial		
Up to 1 Inch	\$12.85	\$15.20
1 1/2 Inch	\$25.73	\$30.43
2 Inch	\$41.15	\$48.68
3 Inch	\$82.29	\$97.34

4 Inch	\$128.58	\$152.09
6 Inch	\$257.15	\$304.18
Irrigation		
Up to 1 Inch	\$12.08	\$14.29
1 1/2 Inch	\$24.18	\$14.29
2 Inch	\$38.68	\$28.60
3 Inch	\$77.35	\$45.76
4 Inch	\$120.86	\$91.50
6 Inch	\$241.73	\$142.97

Note: charges do not include \$1/month meter reading fee

### Volume Rate

Table 12 calculates the volume rate for FY2017 and FY2018. The volume revenue requirement developed in Table 7 is divided by estimated water use to calculate a \$/ccf rate. FY2017 metered water use is estimated as the FY2016 water use plus the water use of ten new customers assumed to use 15 ccf monthly. The unmetered water use is developed in the following subsection.

**Table 12: Volume Rate Calculation  
Town of Discovery Bay  
Water Rate Study**

	FY2017	FY2018
Volume Revenue Requirement (see Table 7)	\$2,194,000	\$1,980,000
Estimated Water Use		
Metered	463,484	1,100,495
Unmetered	<u>924,840</u>	<u>0</u>
Total Water Use (ccf)	1,388,324	1,100,495
Rate (\$/ccf)	\$1.580	\$1.799

The volume rate for subsequent years is proposed to increase by 12% annually over the FY2018 rate to meet variable cost increases.

### Unmetered Customer Charges

Table 13 provides estimated unmetered water use and calculates the unmetered charges for FY2017. By FY2018 it is projected that all customers will be metered and the unmetered rate schedule will be eliminated. Unmetered customers pay the same embedded rates as metered customers. It is assumed that all unmetered customers use the same capacity in the system as a 1 inch metered customer and are thus charged the base capacity meter charge. The proposed unmetered customer charge also includes water consumption charges based on assumed water use.

**Table 13: FY2017 Unmetered Charges  
Town of Discovery Bay  
Water Rate Study**



<b>Customer Group</b>	<b>Ratio</b>	<b>Monthly Fixed Charge</b>	<b>Estimated Monthly Water Use (ccf)</b>	<b>Monthly Volume Charge</b>	<b>Total Monthly Bill</b>	<b># of Cust.</b>	<b>Equivalents [1]</b>	<b>Unmetered Estimated Annual Water Use (ccf)</b>
Rate		\$12.85		\$1.580				
Condos w/irrigation	1.00	\$12.85	15.00	\$23.70	\$36.55	50	40	9,000
Condos w/o irrigation	1.00	\$12.85	7.00	\$11.06	\$23.91	174	90	14,616
Parcel Size								
<5,000 SF	1.00	\$12.85	15.00	\$23.70	\$36.55	87	69	15,660
5,001 to 10,000 SF	1.00	\$12.85	21.00	\$33.18	\$46.03	2,867	2,867	722,484
Sand Bay Isle (new)	1.00	\$12.85	21.00	\$33.18	\$46.03	210	210	52,920
>10,000 SF	1.00	\$12.85	27.00	\$42.66	\$55.51	<u>340</u>	<u>410</u>	<u>110,160</u>
						3,728	3,686	924,840

1 – The base unmetered customer is the 5,001 to 10,000 square foot (SF) parcel. The unmetered equivalents are calculated as the total monthly bill compared to the 5,0001 to 10,000 square foot parcel bill multiplied by the number of customers.

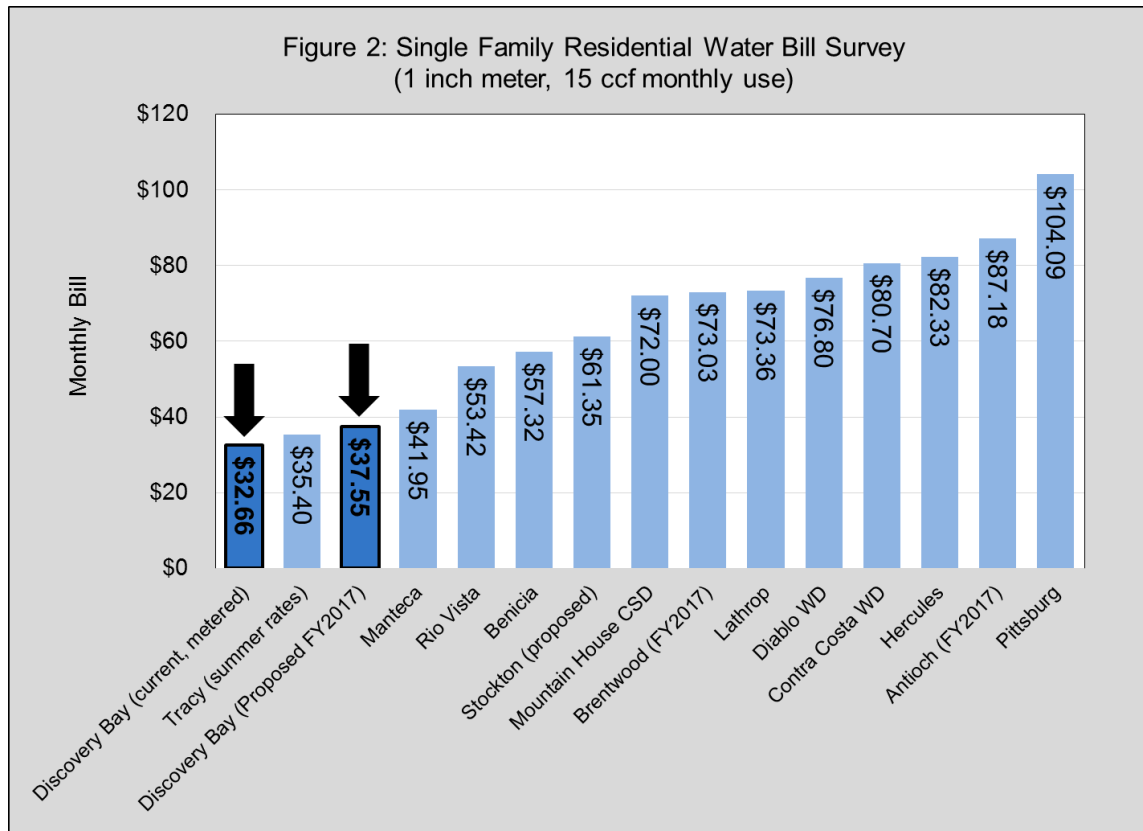
Table 14 compares the unmetered water use assumed in this study compared with the unmetered water use assumed in prior rate studies. Water use is assumed to be slightly lower in FY2016 due to drought conditions. Although unmetered customers are not charged for each unit of water, they are members of the community and receive public messaging regarding conservation.

**Table 14: Unmetered Water Use Comparison  
Town of Discovery Bay  
Water Rate Study**

<b>Unmetered Customers</b>	<b>Assumed Monthly Water Use per Parcel (ccf)</b>	
	<b>2011 &amp; 2013 Rate Study</b>	<b>2016 Rate Study</b>
Condos w/irrigation	17	15
Condos w/o irrigation	10	7
Parcel Size		
<5,000 SF	17	15
5,001 to 10,000 SF	23	21
>10,000 SF	29	27

## Service Charge Projection

Table 15 provides the water utility service charge projection for the next five years including rates and revenues from metered and unmetered customers. Total rate revenues are projected to increase from about \$2.7 million in FY2016 to about \$4.4 million in FY2021. Table 15 also provides the typical single family residential bill over the next five years. The typical bill is projected to increase from \$32.66 to \$60.27 by FY2021. Even with the proposed FY2017 rate increase, the Town’s typical water bill will remain amongst the lowest in the region, see Figure 2. A full schedule of rates and charges is provided in Table 16. The total fixed charges shown in Table 16 include both the meter capacity charges plus a \$1 per month meter reading fee.



**Table 15: Service Charge Projection  
Town of Discovery Bay  
Water Rate Study**

	<b>Current FY2016</b>	<b>FY2017</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>
Increase in typical monthly bill (metered)		15%	15%	12%	12%	12%
Typical Bill (15 ccf/month)	\$32.66	\$36.55	\$42.19	\$47.25	\$52.92	\$59.27
Meter Reading Fee		\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
<b>Total Bill</b>	<b>\$32.66</b>	<b>\$37.55</b>	<b>\$43.19</b>	<b>\$48.25</b>	<b>\$53.92</b>	<b>\$60.27</b>
<b>Water Use</b>						
Metered Consumption (ccf) [1]	461,684	463,484	1,100,495	1,102,295	1,104,095	1,105,895
Rate	\$1.512	\$1.580	\$1.799	\$2.015	\$2.257	\$2.528
<b>Total Water Use Revenue</b>	<b>\$698,000</b>	<b>\$732,000</b>	<b>\$1,980,000</b>	<b>\$2,221,000</b>	<b>\$2,492,000</b>	<b>\$2,796,000</b>
<b>Water Meter Fixed Charge</b>						
Residential and Commercial						
New Development [2]		5	5	5	5	5
Newly Metered Customers		0	3,728	0	0	0
Existing Customers	2,178	2,178	2,183	5,916	5,921	5,926
Total Equivalents	2,178	2,183	5,916	5,921	5,926	5,931
Monthly Charge	\$9.98	\$12.85	\$15.20	\$17.02	\$19.06	\$21.35
Annual Revenue	\$261,000	\$337,000	\$1,079,000	\$1,209,000	\$1,355,000	\$1,520,000
Irrigation						
New Customers		5	5	5	5	5
Existing	193	193	198	203	208	213
Monthly Charge	\$3.02	\$12.08	\$14.29	\$16.00	\$17.92	\$20.07
Annual Revenue	\$7,000	\$29,000	\$35,000	\$40,000	\$46,000	\$52,000
<b>Meter Fixed Charge Revenue</b>	<b>\$268,000</b>	<b>\$366,000</b>	<b>\$1,114,000</b>	<b>\$1,249,000</b>	<b>\$1,401,000</b>	<b>\$1,572,000</b>
<b>Unmetered Customers</b>						
Number of Unmetered Equivalents	3,477	3,686				
Unmetered Charge 5,001 to 10,000 SF	\$41.56	\$46.03				
Unmetered Water Charge Revenue	\$1,734,000	\$2,036,000				
<b>Total Water Service Revenue</b>	<b>\$2,700,000</b>	<b>\$3,134,000</b>	<b>\$3,094,000</b>	<b>\$3,470,000</b>	<b>\$3,893,000</b>	<b>\$4,368,000</b>
Vacant Parcels [2]						
Vacant Parcel Charge	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67	\$14.67
Vacant Parcel Revenue	\$65,000	\$64,000	\$62,000	\$60,000	\$58,000	\$57,000

Note: Revenues shown in this table do not have a delinquency factor included. A delinquency factor is added into the revenues in subsequent tables.

1 - Each new customer is assumed to use 15 ccf monthly.

2 - It is assumed that each new connection will occupy a previously vacant parcel

**Table 16: Recommended Water Rates and Charges  
Town of Discovery Bay  
Water Rate Study**

Avg Bill Increase (1 Inch Meter, 15 ccf/mo)                      \$32.66                      15%                      \$37.55                      15%                      \$43.19                      12%                      \$48.25                      12%                      \$53.92                      12%                      \$60.27

WATER	Current		Proposed FY 2016/17		Proposed FY 2017/18		Proposed FY 2018/19		Proposed FY 2019/20		Proposed FY 2020/21	
	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)	Monthly (\$/DU)	Yearly (\$/DU)
<b>Residential Unmetered</b>												
Parcel Size (Square Feet/DU)												
Condos w/irrigation	\$32.86	\$394.28	\$36.55	\$438.60								
Condos w/o irrigation	\$21.52	\$258.18	\$23.91	\$286.92								
Under 5,000	\$32.86	\$394.28	\$36.55	\$438.60								
5,000 - 10,000	\$41.56	\$498.66	\$46.03	\$552.36								
10,001 - 15,000	\$50.25	\$603.02	\$55.51	\$666.12								
Over 15,000,	\$50.25	\$603.02	\$55.51	\$666.12								
Vacant	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00	\$14.67	\$176.00
Plus Each Additional 1,000	\$2.90	\$34.80	\$3.21	\$38.54								
<b>WATER All Metered</b>	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)
Non-irrigation Account Charge:												
5/8 Inch Meter	\$9.98		\$13.85		\$16.20		\$18.02		\$20.06		\$22.35	
1 Inch Meter	\$9.98		\$13.85		\$16.20		\$18.02		\$20.06		\$22.35	
1 1/2 Inch Meter	\$19.98		\$26.73		\$31.43		\$35.07		\$39.16		\$43.74	
2 Inch Meter	\$31.96		\$42.15		\$49.68		\$55.50		\$62.04		\$69.37	
3 Inch Meter	\$63.91		\$83.29		\$98.34		\$109.99		\$123.06		\$137.72	
4 Inch Meter	\$99.86		\$129.58		\$153.09		\$171.30		\$191.71		\$214.63	
6 Inch Meter	\$199.72		\$258.15		\$305.18		\$341.60		\$382.43		\$428.26	
Irrigation Account Charge:												
5/8" Inch Meter	\$3.02		\$13.08		\$15.29		\$17.00		\$18.92		\$21.07	
1 Inch Meter	\$3.02		\$13.08		\$15.29		\$17.00		\$18.92		\$21.07	
1 1/2 Inch Meter	\$6.04		\$25.18		\$29.60		\$33.03		\$36.87		\$41.18	
2 Inch Meter	\$9.67		\$39.68		\$46.76		\$52.23		\$58.38		\$65.27	
3 Inch Meter	\$19.34		\$78.35		\$92.50		\$103.45		\$115.73		\$129.52	
4 Inch Meter	\$30.21		\$121.86		\$143.97		\$161.08		\$180.27		\$201.81	
6 Inch Meter	\$60.42		\$242.73		\$286.93		\$321.17		\$359.54		\$402.62	
Metered Usage Charge:												
All Usage		\$1.512		\$1.580		\$1.799		\$2.015		\$2.257		\$2.528
Newly Metered Customers												
Meter Install Fee (10-year payback)					\$9.00		\$9.00		\$9.00		\$9.00	

DU = Dwelling Unit  
ccf = 100 cubic feet = 748 gallons