

# MIDWAY HEIGHTS COUNTY WATER DISTRICT

P.O. Box 596

Meadow Vista, CA 95722

(530) 878-8096

## Notice of Proposed Rate Increases and Public Hearing Date September 19, 2019 at 7 p.m.

### Notice of Proposed Water Rate Increases

Notice is given that the Midway Heights County Water District Board of Directors will be considering water rate increases that will be effective September 1, 2019. **A public hearing will be conducted on September 19, 2019 at 7 p.m. in the Broadwell room at the Meadow Vista Community Center, located at 1101 Meadow Vista Road, Meadow Vista, CA 95722, to consider adopting the proposed rate increase.**

Upon close of the public hearing the Board of Directors will establish the rates. If written protests against any of the proposed rates or charges shown are presented by a majority of the property owners, the District will not impose the increases.

### Why is a Rate Increase Necessary?

The District hired a consultant to evaluate the current and future adequacy of rates to meet revenue needs and compliance with California law. The water rate study recommends changes to the water rate structure to better meet cost of service, including eliminating tiered water rates for treated water customers. The proposed rates will increase rate revenues to the District to pay for increased cost of service provision, an additional employee, and necessary improvements to water infrastructure. Rates have not increased since July 1, 2016.

### What are the Current and Proposed Water Rates?

**Table 1** on the backside of this notice shows current and proposed water rates for both the treated and irrigation water customers. Currently, treated water customers are charged a higher rate for bi-monthly water use greater than 8 units (one unit is one hundred cubic feet). Under the proposed rates, all water will be charged the same rate per unit. The Board of Directors cannot adopt rates any higher than those shown in **Table 1**.

### You Have a Right to Protest the Proposed Rate Increases

If you oppose the proposed rate increase, your protest must be submitted in writing even if you attend the public hearing. All written protests must either be received in writing at the District office via mail no later than close of business (5 p.m.) Thursday September 19, 2019, or alternatively handed in before the close of the public hearing on Thursday September 19, 2019. **Per California law, emails, phone calls and other forms of protest are not allowed.** Written protests must include:

- Your full name
- Your service street address or assessor's parcel number
- A statement of protest
- Signature of the property owner or the account holder (only one protest can be recorded per property)

Mail written protests to: Midway Heights County Water District, PO Box 596, Meadow Vista, CA 95722. You may also deliver protests to the District's office located at 16717 Placer Hills Road, Meadow Vista, CA 95722.

If you have any questions regarding this notice, please call the District at (530) 878-8096. A copy of the water rate study is available for viewing at the District office, or is available for pickup on request. The water rate study can also be downloaded from [http://www.mhcwd.org/docs/rate\\_hearing\\_9-19-2019.pdf](http://www.mhcwd.org/docs/rate_hearing_9-19-2019.pdf).

# MIDWAY HEIGHTS COUNTY WATER DISTRICT

P.O. Box 596

Meadow Vista, CA 95722

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**Table 1**  
**Summary of Calculated Fees**

Customer	Current	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
	<i>New Rates Effective ----&gt;</i>	9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Treated Water</b>		<b>COST OF SERVICE FEES</b>				
Service Charge (Bi-Monthly)	\$103.92					
5/8-inch		\$121.70	\$124.43	\$129.87	\$133.31	\$136.75
3/4-inch		\$182.55	\$186.65	\$194.81	\$199.97	\$205.13
1-inch		\$304.25	\$311.08	\$324.68	\$333.28	\$341.88
1.5-inch		\$608.50	\$622.15	\$649.35	\$666.55	\$683.75
2-inch		\$973.60	\$995.44	\$1,038.96	\$1,066.48	\$1,094.00
Use Charge (All Units)		\$3.61	\$3.69	\$3.87	\$3.98	\$4.08
Tier A (0-8 units)	\$2.15					
Tier B (>8 units)	\$4.20					
<b>Irrigation Water Metered</b>						
11.22 gpm rate, Bi-Monthly	\$43.44	\$87.81	\$105.19	\$112.32	\$119.38	\$126.39
16.83 gpm rate, Bi-Monthly	\$59.34	\$131.72	\$157.79	\$168.48	\$179.07	\$189.59
22.44 gpm rate, Bi-Monthly	\$75.22	\$175.62	\$210.38	\$224.64	\$238.76	\$252.78
28.05 gpm rate, Bi-Monthly	\$91.12	\$219.53	\$262.98	\$280.80	\$298.45	\$315.98
33.66 gpm rate, Bi-Monthly	\$107.02	\$263.43	\$315.57	\$336.96	\$358.14	\$379.17
39.27 gpm rate, Bi-Monthly	\$122.92	\$307.34	\$368.17	\$393.12	\$417.83	\$442.37
44.88 gpm rate, Bi-Monthly	\$138.82	\$351.24	\$420.76	\$449.28	\$477.52	\$505.56
50.49 gpm rate, Bi-Monthly	\$154.72	\$395.15	\$473.36	\$505.44	\$537.21	\$568.76
56.10 gpm rate, Bi-Monthly	\$170.62	\$439.05	\$525.95	\$561.60	\$596.90	\$631.95
61.71 gpm rate, Bi-Monthly	\$186.50	\$482.96	\$578.55	\$617.76	\$656.59	\$695.15
67.32 gpm rate, Bi-Monthly	\$202.40	\$526.86	\$631.14	\$673.92	\$716.28	\$758.34
72.93 gpm rate, Bi-Monthly	\$218.30	\$570.77	\$683.74	\$730.08	\$775.97	\$821.54
78.54 gpm rate, Bi-Monthly	\$234.20	\$614.67	\$736.33	\$786.24	\$835.66	\$884.73
Irrigation usage, per unit	\$0.23	\$0.50	\$0.60	\$0.64	\$0.67	\$0.71
<b>Irrigation Water Flat Rate (Bi-Monthly)</b>						
Miner Inch, year-round	\$119.98	\$137.57	\$166.34	\$179.24	\$192.26	\$205.39
Seasonal Miners Inch (May 1-Oct 1)	\$73.44	\$120.38	\$145.55	\$156.84	\$168.23	\$179.72
<b>Coyote Hills Estates</b>						
Pumped Water Surcharge, per unit [1]	\$0.23	\$0.28	\$0.30	\$0.31	\$0.33	\$0.34

Source: HEC 2019 rate study.

[1] Charged to both treated and untreated water customers.

**Midway Heights  
County Water District**

**Final Water Rate Study**

**July 30, 2019**

The following report was prepared by Hansford Economic Consulting LLC.

The analyses and findings contained within this report are based on primary data provided by Midway Heights County Water District, as well as additional secondary sources of data available as of the date of this report. Updates to information used in this report could change or invalidate the findings contained herein. While it is believed that the primary and secondary sources of information are accurate, this is not guaranteed.

This Water Rate Study should not be relied upon as sole input for decision-making; it should be utilized strictly for the purposes of the scope and objectives of the commissioned study. Revenue and expense projections are estimates only to be used generally for planning purposes; there are many factors that can cause actual revenues and expenses to deviate from the projections shown in the report. Any applications for financing, or bond sales analyses, should re-evaluate the financial health and projection of revenues and expenses at the time of the application or preparation for bond sale.

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# Section 1: INTRODUCTION

## 1.1 STUDY BACKGROUND AND BEST PRACTICES

### Background

The Midway Heights County Water District (District or Midway Heights CWD) provides treated and untreated water services within its service territory, which is located northwest of Interstate 80 north of the community of Meadows Vista and to the west and south of the community of Weimar. The District’s service territory is generally split by Placer Hills Road, with service to the east and west of the road. The District contracted with Hansford Economic Consulting (HEC) to perform a Water Rates Study (Study) for all (treated and untreated) customers within the District. The purpose of this Study is to determine the level of funding required over the next five years to sufficiently fund service provision.

The bi-monthly property-related fees (also called “rates” in the Study) are exempt from Proposition 26 but are subject to California Constitution Article XIII D (commonly referred to as Proposition 218) requirements for water, wastewater, and solid waste property-related fees.

This Study provides an explanation of, and justification for, calculated bi-monthly water rates by customer type through June 30, 2024 (a five-year period), and documents adherence to the law regarding the setting of property-related fees by a special district. Specifically, the California Constitution requires that the fees for water service shall not be extended, imposed, or increased by any agency unless they meet all of the following requirements:

- (1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
- (2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- (3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- (4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted.
- (5) No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.

The water financial model projects revenues and expenses, and calculates bi-monthly property-related fees for the next five years. To adopt the calculated fees, the District would have to proceed with public notification and a public hearing, as required by Proposition 218.

In addition to calculating bi-monthly rates, the water financial model calculates connection fees which are one-time, non-recurring, fees. Currently, the District only charges a connection fee for the treated water system. This Study calculates updated connection fees for the treated water system (including a new lower fee for Accessory Dwelling Units (ADUs)) and a connection fee per lot for the untreated water system, should the District choose to adopt it. Connection fees are adopted and collected pursuant to the Mitigation Fee Act (California Code 66013), which is a different process than adopting rates. Connection fees can be adopted or updated at a different time from the water rates.

### **Best Practices**

Fee studies are typically conducted every three to five years to ensure revenue sufficiency. A cost of service analysis, which not only allows for revenue sufficiency, but also examines whether customers are paying for their share of system costs and adjusts rates and customer classifications to achieve equity to the maximum extent practicable, is advisable whenever there has been a shift in the economic base of the community, and whenever proportional cost of service is in question.

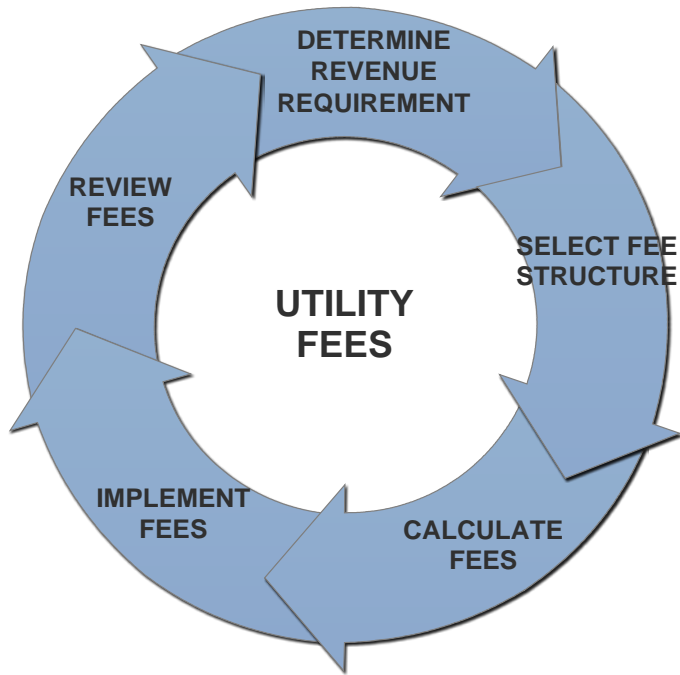
This Study incorporates all the major elements of cost-based rate making using the principles established by the American Water Works Association Manual 1. **Figure 1** on the following page illustrates the fee-setting process.

As part of the regular periodic reviews of the utility fees, best practices include maintaining financially self-sustaining utilities, setting policies on reserve levels for utility funds, including setting an amount aside every year into a special reserve account (or “sinking fund”) to pay for system rehabilitation, and conducting regular customer outreach/communications to educate the community on their utility system(s) and value of the service(s) provided.

**Table 1** on the next page shows utility best practices and the District’s current practices. The District is very well run and cost-efficient; the key reasons for needing rate increases include rate increases by Weimar Water and Placer County Water Agency (PCWA), which supply wholesale treated and untreated water to the District, the need to fund capital improvements, the addition of an employee, and the need to keep up with inflationary costs increases and competitive pay.



**Figure 1**  
**Fee-Setting Process**



**Table 1**  
**Water Utility Best Practices**

<b>Best Practice</b>	<b>Midway Heights CWD</b>
Rate study every 3 to 5 years	Last rate study conducted in 2011
Collect for system rehabilitation (for upkeep of existing infrastructure) in rates	Rehabilitation was included in the rates but has been eroded by rising costs; currently rates are only sufficient to cover operating costs
Regular customer communications to educate on the utility systems and value of service	The District uses bill inserts to communicate with customers
Meet bond covenants	The District has had a loan with the State since 2015; it has met all requirements; however, it is currently close to falling short of the debt service coverage requirement
Self-sufficient enterprise fund	Revenues cover operating costs and the District has healthy cash reserves; however, there are several large capital improvement projects to complete in the next 5 to 10 years
Meet target cash balance	District policy is that undesignated cash must be at least 2 months of operating expenses, which it is meeting

## 1.2 KEY FINDINGS AND CALCULATED FEES

### Key Findings

This Study makes the following key findings:

#### Bi-Monthly Fees

- Current reserves are healthy and can be put toward priority capital improvements over the next five years. The priority capital improvements are upgrades to the raw water storage reservoir, including security upgrades, and replacement of the Hillsdale irrigation main.
- The cost-of-service analysis demonstrates that there should be a shift in cost recovery from flat-rate year-round miner's inch untreated customers to metered untreated customers. In addition, slightly more treated water system costs should be recovered in use rates.
- The 2015 San Juan Capistrano decision reaffirmed that rates must be proportional to the costs of service received. Water conservation pricing with higher cost paid for greater levels of consumption is only defensible if the cost of water is greater at higher levels of consumption. The District purchases all treated water from WWC at the same cost per unit; therefore, the second-tier pricing is removed in this Study.
- Service charges should be collected from all water connections bi-monthly, whether the service is actively taking water through their service pipe or not.
- Bi-monthly rates need to be increased for all customers (treated and untreated). The rates are assumed to be effective September 1, 2019 in the Study. Untreated customers need a greater increase in rates than treated customers because of the necessary capital improvements to that system. The calculated rates are adequate to fund service cost and to stay compliant with the District's SRF loan with the State for the debt service coverage ratio bar any unforeseen circumstances or major drought.

#### Calculated Rates

Current and calculated cost-of-service rates are shown in **Table 2** on the following page.

**Table 2**  
**Calculated 5-Year Schedule of Bi-Monthly Rates**

Customer	Current	2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
<i>New Rates Effective ----&gt;</i>		9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Treated Water</b>		<b>COST OF SERVICE FEES</b>				
Service Charge (Bi-Monthly)	\$103.92					
5/8-inch		\$121.70	\$124.43	\$129.87	\$133.31	\$136.75
3/4-inch		\$182.55	\$186.65	\$194.81	\$199.97	\$205.13
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2-inch		\$973.60	\$995.44	\$1,038.96	\$1,066.48	\$1,094.00
Use Charge (All Units)		\$3.61	\$3.69	\$3.87	\$3.98	\$4.08
Tier A (0-8 units)	\$2.15					
Tier B (>8 units)	\$4.20					
<b>Irrigation Water Metered</b>						
11.22 gpm rate, Bi-Monthly	\$43.44	\$87.81	\$105.19	\$112.32	\$119.38	\$126.39
16.83 gpm rate, Bi-Monthly	\$59.34	\$131.72	\$157.79	\$168.48	\$179.07	\$189.59
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50.49 gpm rate, Bi-Monthly	\$154.72	\$395.15	\$473.36	\$505.44	\$537.21	\$568.76
56.10 gpm rate, Bi-Monthly	\$170.62	\$439.05	\$525.95	\$561.60	\$596.90	\$631.95
61.71 gpm rate, Bi-Monthly	\$186.50	\$482.96	\$578.55	\$617.76	\$656.59	\$695.15
67.32 gpm rate, Bi-Monthly	\$202.40	\$526.86	\$631.14	\$673.92	\$716.28	\$758.34
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78.54 gpm rate, Bi-Monthly	\$234.20	\$614.67	\$736.33	\$786.24	\$835.66	\$884.73
Irrigation usage, per unit	\$0.23	\$0.50	\$0.60	\$0.64	\$0.67	\$0.71
<b>Irrigation Water Flat Rate (Bi-Monthly)</b>						
Miner Inch, year-round	\$119.98	\$137.57	\$166.34	\$179.24	\$192.26	\$205.39
Seasonal Miners Inch (May 1-Oct 1)	\$73.44	\$120.38	\$145.55	\$156.84	\$168.23	\$179.72
<b>Coyote Hills Estates</b>						
Pumped Water Surcharge, per unit [1]	\$0.23	\$0.28	\$0.30	\$0.31	\$0.33	\$0.34

Source: HEC 2019 rate study.

[1] Charged to both treated and untreated water customers.

**Connection Fees**

- The treated water connection fee should be increased to pay for buy-in to the existing system and necessary new capital facilities. A new fee for ADUs should be added to the fee schedule. California Senate Bill 229 requires that detached ADUs with a separate water connection pay connection fees for water but that the fee must be proportional to water use compared to standard sized dwelling units.
- An untreated water connection fee should be considered, particularly because this water system provides fire suppression service. The largest capital costs in the next ten years are for the irrigation and fire suppression water system.

**Table 3** presents the calculated updated connection fees, which are the maximum justifiable fees for each system in 2019. At the July 18, 2019 Board of Directors meeting, the Board chose to move forward with the calculated treated water connection fees and a reduced untreated water connection fee of \$2,000 per lot. If successfully adopted, both connection fees would be updated July 1 every fiscal year by the change in the preceding March to March Engineering News Record (ENR) construction cost index (CCI).

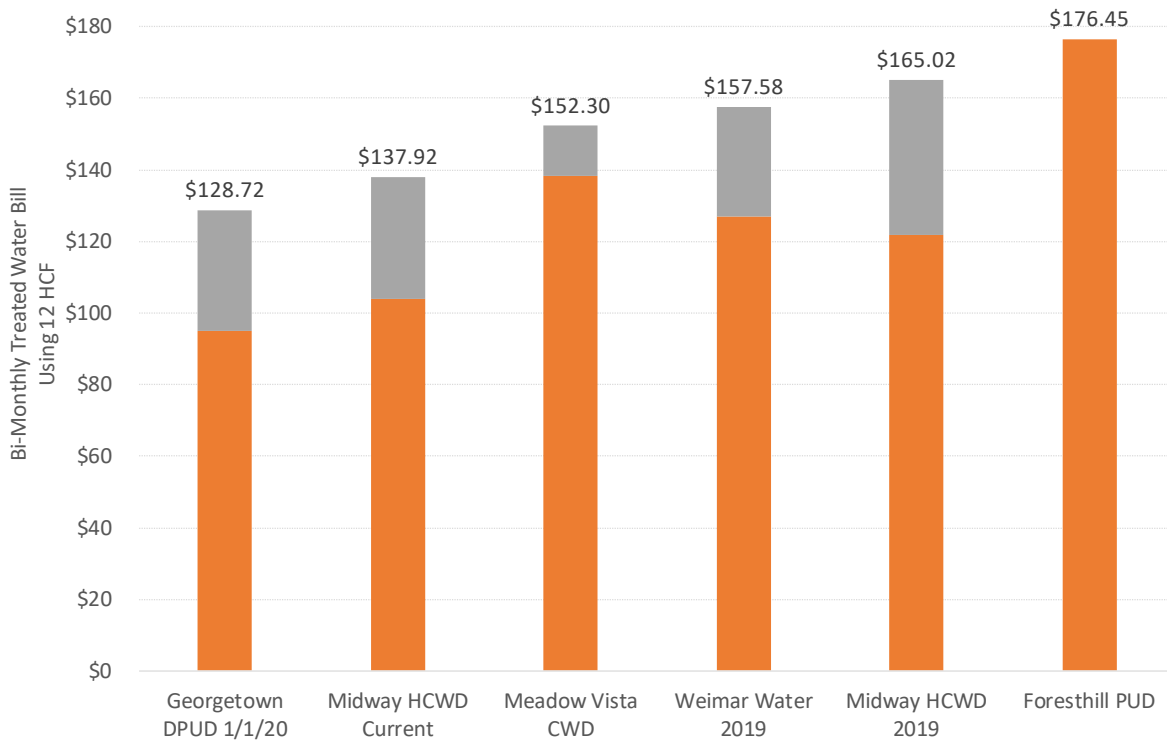
**Table 3**  
**Calculated Connection Fees**

Connection Fee	Treated	Untreated
	<i>per building</i>	<i>per lot</i>
<b>Current</b>		
Main Building	\$3,620.28	\$0.00
ADU	\$0.00	n/a
<b>Calculated</b>		
Main Building	\$5,584.92	\$4,057.68
ADU	\$3,384.80	n/a

### 1.3 COMPARISON OF CURRENT AND CALCULATED RATES WITH OTHER WATER PROVIDERS

**Figure 2** compares the District’s current and calculated treated water rates under scenarios A and B with those of other regional water providers. The comparison is made with a bi-monthly bill of 12 hundred cubic feet (HCF or ‘units’). The treated water bill is comparable to Weimar Water Company at the same level of usage, lower than Foresthill PUD, and higher than Georgetown Divide PUD and Meadow Vista CWD.

**Figure 2**  
**Comparison of Bi-Monthly Treated Water Bill**

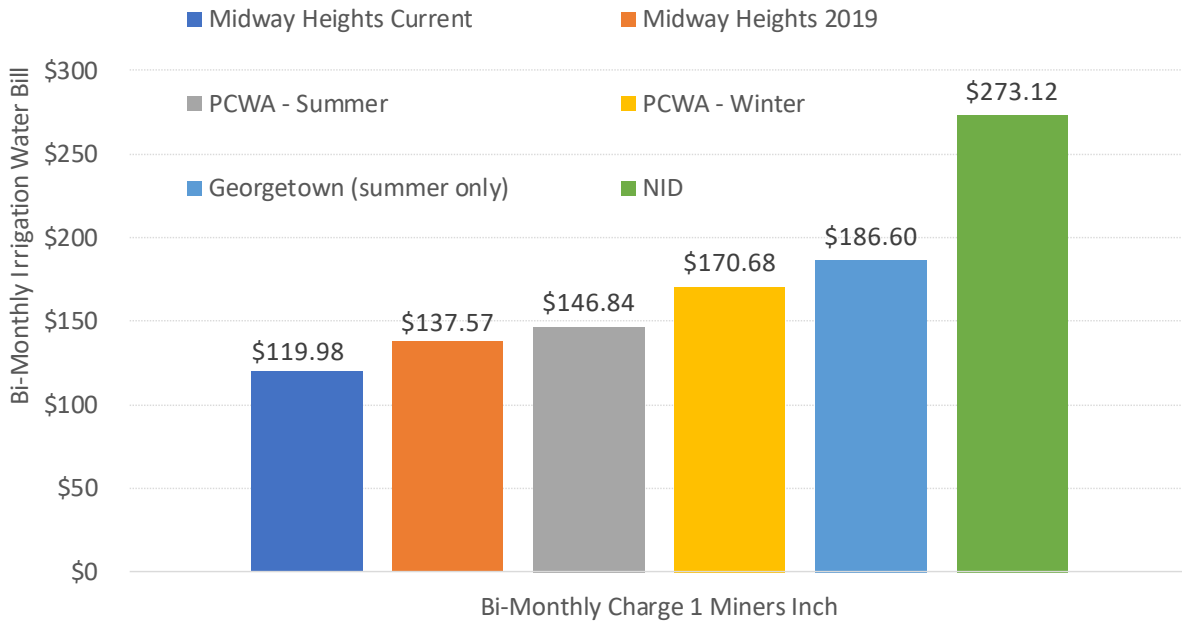


**Figures 3 and 4** compare the District’s current and calculated untreated water rates with other regional water providers.

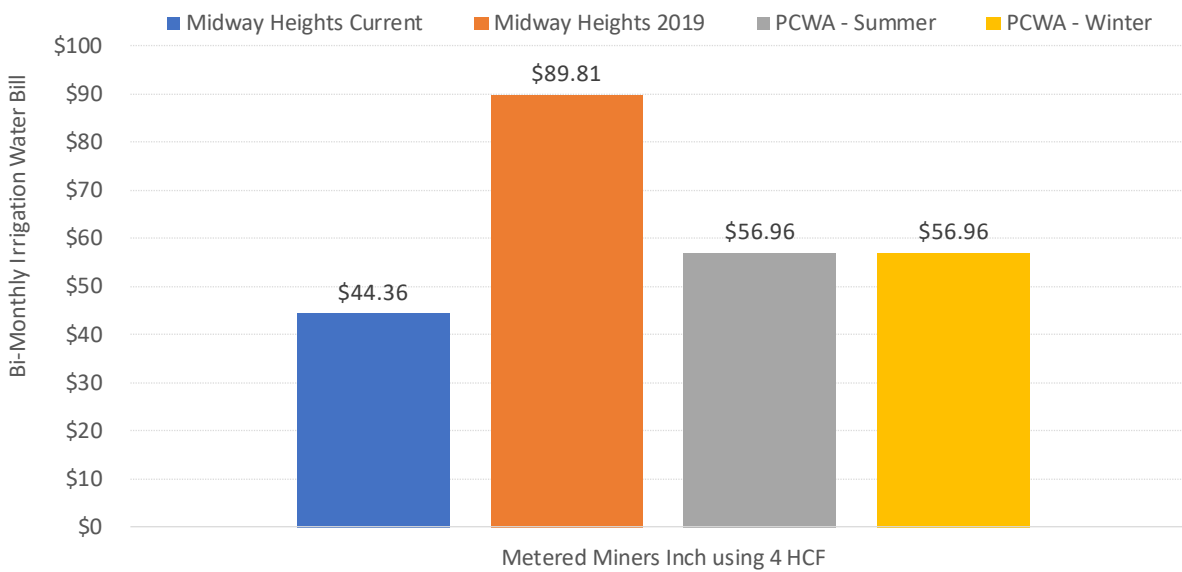
**Figure 3** shows the comparison for a flat-rate account with one miner’s inch service. The untreated water bill is lower than those of other agencies in the region (Nevada Irrigation District, Placer County Water Agency, and Georgetown PUD) even with the rate increase.

**Figure 4** shows a bill for metered untreated water. The customer is using 4 HCF. Currently, District customers pay less than PCWA customers. With the rate increase, the Midway Heights CWD customer would pay more than PCWA customers would pay.

**Figure 3**  
**Comparison of Bi-Monthly Irrigation Water Bill for One Miner's Inch (Flat-Rate)**



**Figure 4**  
**Comparison of Bi-Monthly Irrigation Water Bill for a Metered Miner's Inch using 4HCF**

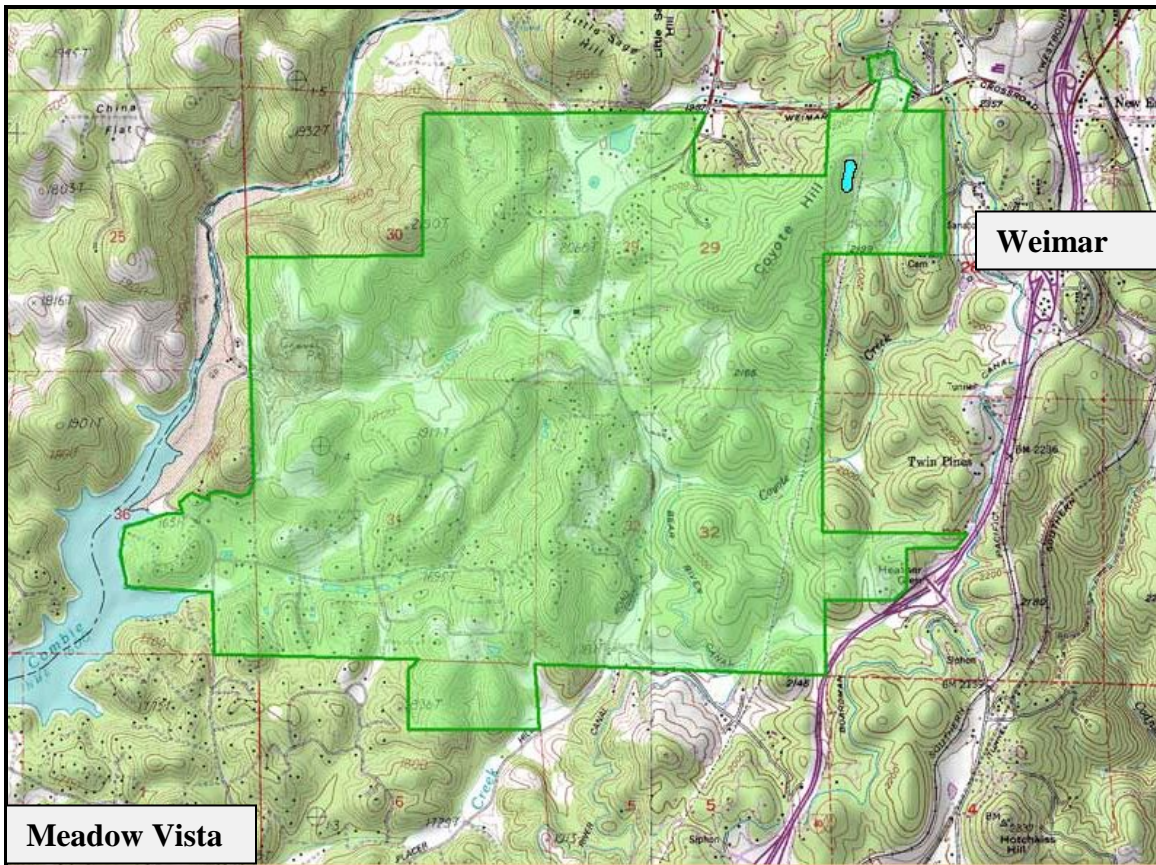


## Section 2: WATER SYSTEMS

### 2.1 WATER FACILITIES

The District provides treated and untreated water services within its service territory, which is located northwest of Interstate 80 north of the community of Meadows Vista and to the west and south of the community of Weimar. The District's service territory is generally split by Placer Hills Road, with service to the east and west of the road. It is shown in light green in **Map 1** below. The service area is approximately 4.1 square miles. Land use is predominantly residential.

**Map 1**  
**Midway Heights CWD Service Territory**



The treated water system provides water for domestic use. The District buys the potable water from the Weimar Water Company and distributes it to treated water customers. The untreated water system provides raw water for irrigation and fire suppression. Raw water is purchased from PCWA.

## 2.2 CUSTOMER BASE

**Table 4** shows the number of customers the District has by water system, and potential total number of customers at District buildout. The District is currently 75% built-out. There are more treated water customers than irrigation water customers.

**Table 4**  
**Number of Lots by Customer Type**

<b>Water Customer Type</b>	<b>2019 (Current)</b>	<b>Future</b>	<b>Estimated Buildout</b>	<b>2019 % Built</b>
	<i>No. Customers</i>			<i>rounded</i>
Treated Water [1]	438	149	587	75%
Irrigation Water [2]	349	116	465	75%
<b>Total</b>	<b>787</b>	<b>265</b>	<b>1,052</b>	<b>75%</b>

Source: MHCWD customer records and Kennedy/Jenks 2009 study.

build

[1] Page 3 Kennedy/Jenks Consultants.

[2] Page 14 Kennedy/Jenks Consultants.

## 2.3 FINANCIAL HEALTH OF THE DISTRICT

**Table A-1 of Appendix A** summarizes District historical financial audited statements for fiscal years ending 2017 and 2018 and the budgeted financials for fiscal years ending 2019 and 2020. Operating expenditures are anticipated to increase from approximately \$560,000 in 2017 to approximately \$620,000 in 2020. Capital expenditures fluctuate from year to year and may increase or decrease from one year to the next. Without a rate increase, the District would be drawing on reserves of approximately \$70,700 in fiscal year ending 2020. This is not unusual, and it is appropriate to use reserves. In 2017, the District used \$130,000 in reserves.

**Table A-2 in Appendix A** shows the approved 2020 budget for the treated and untreated water systems. The treated water system accounts for two-thirds of total budgeted expenditures and the untreated water system accounts for one-third. Costs that are considered ‘fixed’ are shown with two asterisks. For the treated water system about 70% of costs are fixed. For the untreated water system, about 77% of costs are fixed. Fixed costs are recouped in service charges. Variable costs are recouped in use charges.



Excluding Assessment District funds, the District currently has approximately \$508,000 in unrestricted reserves, or the equivalent of about 10 months of operating expenditures. Per the existing financing agreement with the State Water Resources Control Board, the District must restrict approximately \$55,000 (one year of debt service). Reserves are necessary for several reasons, to:

- Serve cash flow needs
- Pay for emergency and unplanned necessary repairs
- Accumulate for system rehabilitation (planned improvements)
- Provide rate stabilization

While each utility needs to assess its risks on an individual basis using knowledge of the current status of infrastructure, regulatory requirements, cash flow “bumps” and so forth, there are some general guidelines to measure what a prudent reserve would be for the District. The Government Finance Officers Association (GFOA) best practice is to start with a baseline of 90 days of operating expenses and adjust depending on local circumstance. For a small utility system, it is most typical to have an amount equal to between 3 and 6 months of operating expenses available in undesignated or unrestricted cash.

For Midway Heights CWD, arguments in favor of a higher than 90-day reserve include:

- Unpredictable weather events – emergency work may be needed; major assets could be compromised.
- Enterprise fund – all revenue from fees, no general fund transfer potential, small amount of revenue from property taxes.
- Rate stabilization – raising rates is unappealing; especially with a small customer base.

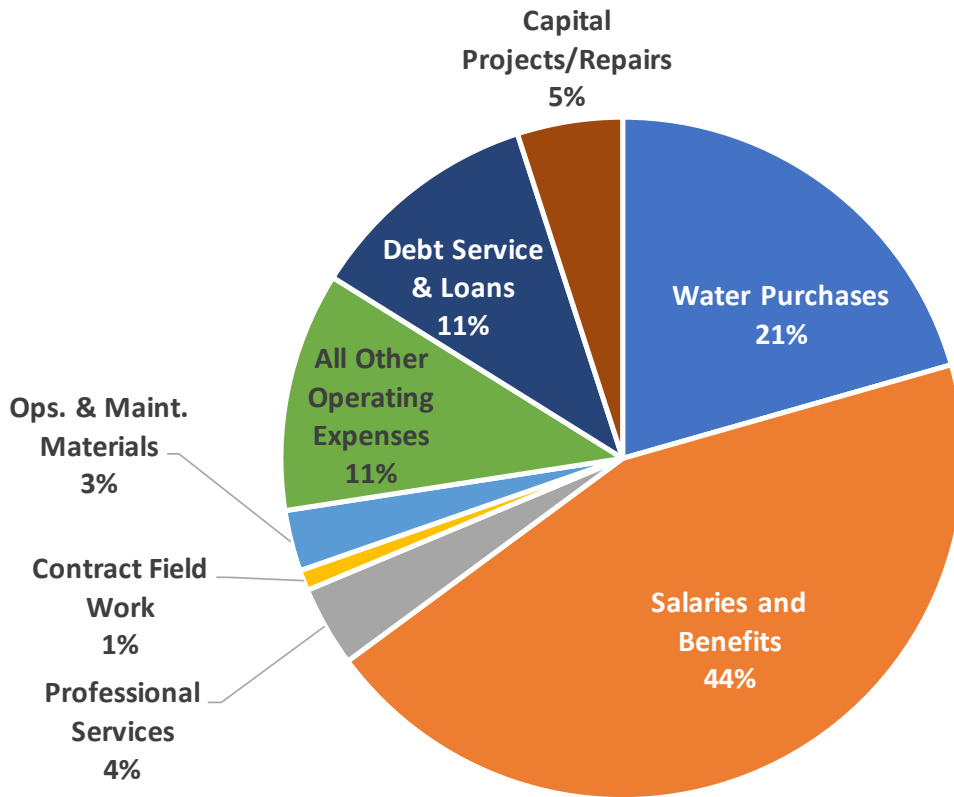
Given the above considerations, the fee Study targets six months of operating expenses to be held in cash reserve over the next five years.

## Section 3: PROJECTED COSTS AND REVENUES

### 3.1 OPERATING COSTS

Projected operating costs are based on the fiscal year 2020 budget, with the addition of a new employee. The largest operating costs are for personnel (salaries and benefits), and the second largest is water purchases. The District purchases all of the water it sells. Treated water is purchased from Weimar Water Company. Untreated water is purchased from PCWA. **Figure 5** below shows a breakdown of budgeted expenses for fiscal year 2020.

**Figure 5**  
**Budgeted Fiscal Year 2020 Expenses**



### 3.2 EXISTING FACILITIES SYSTEM REHABILITATION COSTS

Customers of the treated and untreated water systems are responsible for the upkeep of existing system facilities, as well as capital costs (and associated soft costs) of new facilities.

**Table A-3 in Appendix A** lists all of the major water system assets. Depreciation of the assets is used as a proxy for the amount that should be collected each year to fund system rehabilitation. The depreciation calculation uses the replacement cost method. The calculated annual depreciation is \$131,834 for the treated water system and \$61,262 for the untreated water system, as summarized in **Table 5** below.

**Table 5**  
**Summary of Depreciation Costs**

System and Asset Group	Treated System	Irrigation System	Annual Depreciation
	<i>See Table A-3</i>		
Buildings [1]	\$1,666	\$1,309	\$2,975
Field Equipment [1]	\$79	\$62	\$142
Office Equipment [1]	\$0	\$0	\$0
Distribution Equipment	\$130,089	\$59,890	\$189,979
<b>Total All Assets</b>	<b>\$131,834</b>	<b>\$61,262</b>	<b>\$193,096</b>

Source: Midway Height CWD and HEC, June 2019.

depr

[1] Asset depreciation allocated between treated and irrigation systems by number of customers.

The District has identified several projects that need to be completed to address vulnerabilities, deficiencies, and the addition of new services. This list of projects has been summarized in a capital improvement projects (CIP) table. While all of the projects are listed within the next five-year timeframe, it is not expected that the District will complete all the projects within this time period. **Table 6** on the next page shows the CIP. Total projects costs are \$1.7 million in today's dollars at the planning stage of project cost estimation. Priority projects include the Hillsdale irrigation main replacement and improvements at the raw water reservoir. It is estimated that \$800,000 of the CIP costs can be funded over the next five years with the rate and fee increases calculated in the next section of this report.

**Table 6** also allocates total CIP costs to current and future users as well as treated and untreated water customers. The cost allocation is used for calculating rates and connection fees. The majority of the costs, 74%, is the responsibility of the untreated (irrigation) water customers. To fund the entire \$800,000 from rate and fee increases would be a very large increase. The financing plan uses \$284,000 of District reserves to pay for a portion of the costs.

**Table 6  
Capital Improvement Projects**

Improvement Project Name	Estimated Cost	Funding Source			Estimated Desired Completion					
		Treated Rates	Treated Conn. Fees	Irrig. Rates	Irrig. Conn. Fees	2020	2021	2022	2023	2024
<b>A</b> Treated Master Meter Installation & PRV Replacement	2019 \$ \$150,000	100%					\$50,000	\$100,000		
<b>B</b> Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$110,000	[1]	14%	33%	12%		\$55,000	\$55,000		\$55,000
<b>C</b> Proposed 2.5 Mile Fire Break with Fire Hydrants from West Weimar Cross Rd to Crother Rd	\$140,000	[1]	14%	33%	12%		\$70,000	\$70,000		\$70,000
<b>D</b> Blackberry Irrigation & Fire Loop	\$495,000	[1]	75%	25%			\$295,000	\$200,000		\$200,000
<b>E</b> 6" Irrigation PRV	\$90,000		100%			\$90,000				
<b>F</b> Hillsdale Irrigation Main Replacement	\$690,000		100%			\$172,500	\$172,500	\$172,500	\$172,500	\$172,500
<b>TOTAL Improvements Estimated Cost (2019 \$)</b>	<b>\$1,675,000</b>	<b>\$254,087</b> 15%	<b>\$35,000</b> 2%	<b>\$1,234,187</b> 74%	<b>\$153,750</b> 9%	<b>\$0</b>	<b>\$262,500</b>	<b>\$692,500</b>	<b>\$692,500</b>	<b>\$497,500</b>
<b>Funded By</b>										
Treated Rates	\$46,000					\$0	\$0	\$12,000	\$16,000	\$18,000
Treated Connection Fees	\$25,000					\$0	\$0	\$0	\$12,500	\$12,500
Irrigated Rates	\$445,000					\$0	\$142,000	\$91,000	\$101,000	\$111,000
Reserves	\$284,000					\$0	\$30,500	\$69,500	\$98,000	\$86,000
<b>Total Funded (Projects B and F Only)</b>	<b>\$800,000</b>	<b>48%</b>				<b>\$0</b>	<b>\$172,500</b>	<b>\$227,500</b>	<b>\$227,500</b>	<b>\$227,500</b>
Unfunded	\$875,000	52%				\$0	\$90,000	\$50,000	\$465,000	\$270,000

Source: PCWA County Wide Master Plan and HEC. cip

[1] Percentages derived from Table 4

### 3.3 REVENUE REQUIREMENT

The revenue requirement is the amount of money that must be raised through bi-monthly fees each year to achieve revenue sufficiency. The projected revenue requirement through the next five years for the two water systems combined is provided in **Table 7**. **Appendix Tables A-4** and **A-5** show the revenue requirement for the treated and untreated water systems separately.

Currently the District raises about \$589,000 annually from rates. It is projected that the District will need to raise about \$772,000 in fiscal year ending 2020, increasing to \$940,000 over five years. The capital expenses shown in **Table 7** exclude the amount of the CIP that would be funded with reserves.

**Table 7**  
**Projected Revenue Requirement**

Revenue Requirement Elements	Fiscal Year Ending				
	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
<i>New Rates Effective ----&gt;</i>	9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
Operating Expenses	\$697,160	\$736,006	\$759,051	\$782,834	\$807,379
Capital Expenses	\$67,961	\$86,150	\$108,305	\$122,464	\$134,628
SRF Debt Service [1]	\$54,786	\$54,786	\$54,786	\$54,786	\$54,786
Truck Loan	\$27,691	\$27,691	\$27,691	\$27,691	\$27,691
<b>Total Costs</b>	<b>\$847,598</b>	<b>\$904,633</b>	<b>\$949,832</b>	<b>\$987,774</b>	<b>\$1,024,484</b>
Total Credits	\$75,762	\$77,790	\$79,901	\$82,097	\$84,383
<b>Revenue Requirement</b>	<b>\$771,836</b>	<b>\$826,843</b>	<b>\$869,932</b>	<b>\$905,677</b>	<b>\$940,101</b>
Current Water Sales	\$589,404	\$589,404	\$589,404	\$589,404	\$589,404
<b>Additional Water Sales Needed</b>	<b>\$182,432</b>	<b>\$237,439</b>	<b>\$280,528</b>	<b>\$316,273</b>	<b>\$350,697</b>
<b>Annual Change in Water Sales Needed</b>	<b>\$182,432</b>	<b>\$55,007</b>	<b>\$43,088</b>	<b>\$35,746</b>	<b>\$34,424</b>
Percent Increase in Rate Revenue	31%	7%	5%	4%	4%

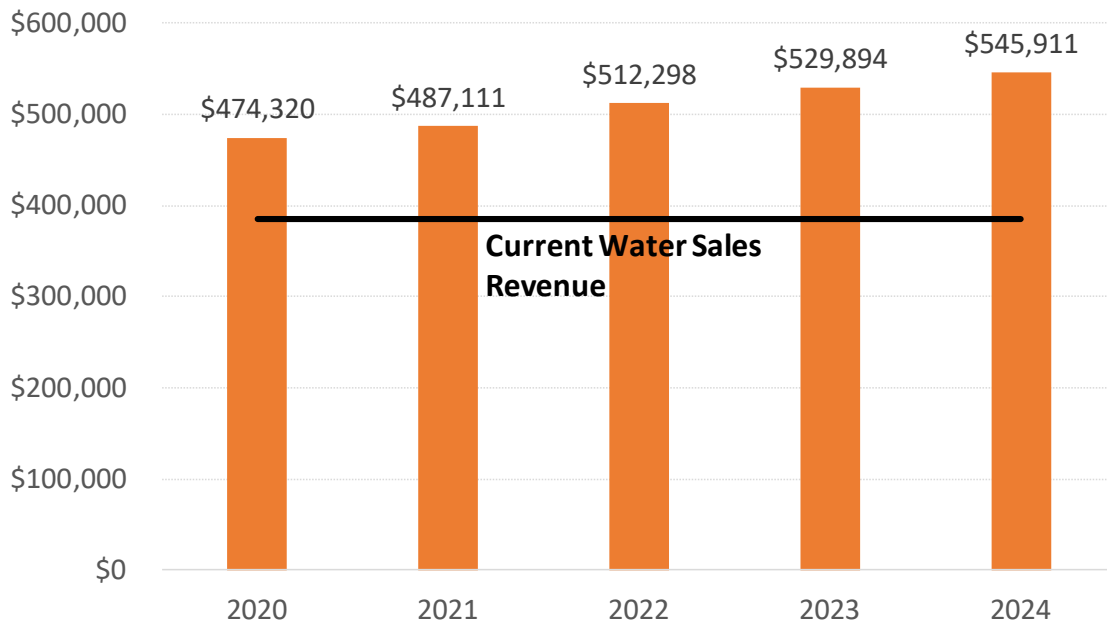
Source: HEC 2019 Rate Study.

rev req

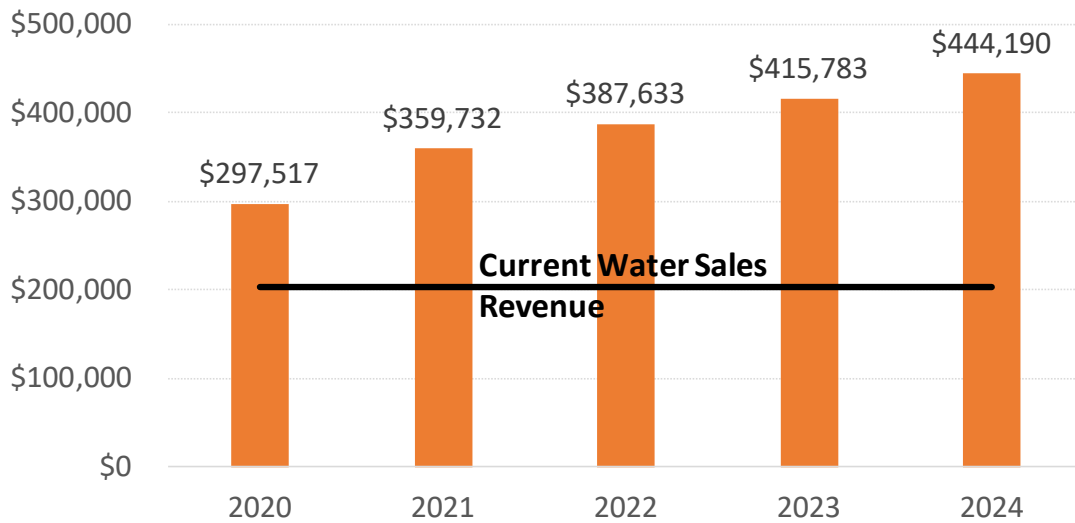
[1] The District's DWR Loan is repaid with property owner assessments and therefore not shown.

The treated water revenue requirement projection is illustrated in **Figure 6**. The untreated water revenue requirement projection is illustrated in **Figure 7**.

**Figure 6**  
**Treated Water System Revenue Requirement Projection**



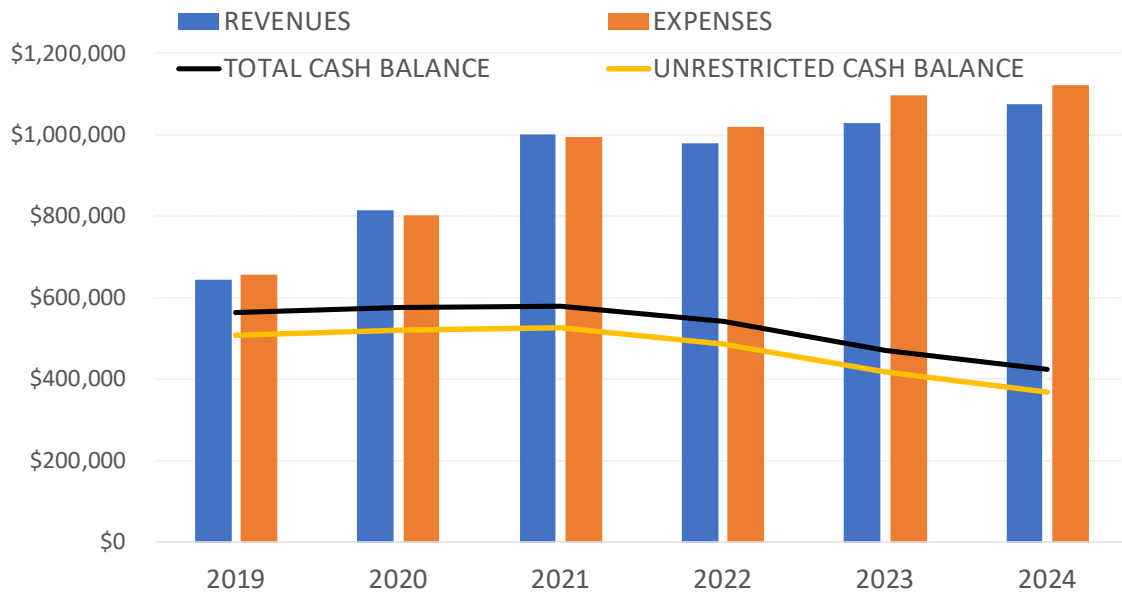
**Figure 7**  
**Untreated Water System Revenue Requirement Projection**



### 3.4 CASH FLOW PROJECTION

If the bi-monthly fees are adjusted to generate the projected five-year revenue requirements, total unrestricted cash is projected to decrease from ten months to five months of operating expenses as illustrated in **Figure 8**. The detailed projected cash flow is provided in **Table 8** on the next page.

**Figure 8**  
**Projected Cash Balances**



Under the terms of the Drinking Water State Revolving Fund (SRF) loan, the District must maintain a minimum 1.2 debt service coverage ratio each year. The District is currently close to falling short of the State’s requirement; a rate increase is also necessary to ensure the District stays in compliance.

In addition, under the terms of the SRF loan, the District must restrict one year of debt service (almost \$55,000) in reserves. The amount of unrestricted cash is projected to be reduced from approximately \$508,200 to approximately \$367,600 over the next five years. Revenues in fiscal year 2021 receive a one-time boost of \$75,000 from the disbursement of remaining money in the assessment district (formed to repay a loan with the California Department of Water Resources).

**Table 8**  
**Projected Cash Flow**

Revenues and Expenses	Fiscal Year Ending					
	2019 Budget	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
	<i>New Rates Effective ----&gt;</i>	<i>9/1/2019</i>	<i>7/1/2020</i>	<i>7/1/2021</i>	<i>7/1/2022</i>	<i>7/1/2023</i>
<b>REVENUES</b>						
Treated Water Sales	\$374,423	\$457,670	\$487,111	\$512,298	\$529,894	\$545,911
Irrigation Water Sales	\$199,548	\$281,625	\$360,433	\$388,348	\$415,821	\$444,270
All Other Revenues	\$69,758	\$75,762	\$77,790	\$79,901	\$82,097	\$84,383
<b>Total Revenues</b>	<b>\$643,729</b>	<b>\$815,057</b>	<b>\$925,334</b>	<b>\$980,547</b>	<b>\$1,027,812</b>	<b>\$1,074,563</b>
<b>EXPENSES</b>						
Operating - Treated Water		\$443,627	\$457,347	\$471,503	\$486,107	\$501,174
Operating - Irrigation Water		\$253,533	\$278,659	\$287,548	\$296,727	\$306,205
Truck Loan		\$27,691	\$27,691	\$27,691	\$27,691	\$27,691
<b>Total Expenses</b>	<b>\$573,849</b>	<b>\$724,851</b>	<b>\$763,697</b>	<b>\$786,742</b>	<b>\$810,525</b>	<b>\$835,070</b>
<b>Net Revenue</b>	<b>\$69,880</b>	<b>\$90,206</b>	<b>\$161,636</b>	<b>\$193,805</b>	<b>\$217,288</b>	<b>\$239,493</b>
Debt Service	\$60,531	\$54,786	\$54,786	\$54,786	\$54,786	\$54,786
Debt Service Coverage Ratio [1]	1.15	1.65	2.95	3.54	3.97	4.37
<b>Net Revenues</b>	<b>\$9,350</b>	<b>\$35,420</b>	<b>\$106,850</b>	<b>\$139,020</b>	<b>\$162,502</b>	<b>\$184,707</b>
Beginning Cash Balance [2a]	\$574,972	\$562,972	\$575,431	\$580,016	\$541,231	\$470,769
Add Net Revenues	\$9,350	\$35,420	\$106,850	\$139,020	\$162,502	\$184,707
Capital Improvement Projects [3]	(\$10,000)	(\$16,000)	(\$172,500)	(\$172,500)	(\$227,500)	(\$227,500)
Other Capital Expenses	(\$11,350)	(\$6,961)	(\$5,150)	(\$5,305)	(\$5,464)	(\$5,628)
Assessment District Disbursement	\$0	\$0	\$75,385	\$0	\$0	\$0
<b>Ending Cash Balance</b>	<b>\$562,972</b>	<b>\$575,431</b>	<b>\$580,016</b>	<b>\$541,231</b>	<b>\$470,769</b>	<b>\$422,349</b>
Restricted Cash Balance [2b]	\$54,786	\$54,786	\$54,786	\$54,786	\$54,786	\$54,786
<b>Unrestricted Cash Balance</b>	<b>\$508,186</b>	<b>\$520,645</b>	<b>\$525,230</b>	<b>\$486,445</b>	<b>\$415,983</b>	<b>\$367,563</b>
<b>Target Cash Balance [4]</b>	<b>\$286,924</b>	<b>\$362,426</b>	<b>\$381,849</b>	<b>\$393,371</b>	<b>\$405,262</b>	<b>\$417,535</b>
Months of Op. Expenses in Cash	10.6	8.6	8.3	7.4	6.2	5.3

Source: HEC 2019 rate study.

flow

[1] Per terms of the SRF financing agreement, debt service coverage must be at least 1.2x annual gross revenues.

[2a] Excludes assessment district restricted funds. [2b] One year of SRF debt service.

[3] Includes \$16,000 in fiscal year 2020 for installation of mainline meters and replacement of existing pressure regulating valves.

[4] Six months of operating expenses. The District policy is that the minimum undesignated reserve fund balance be at least 15% (2 months) of operating expenses.



## SECTION 4: BI-MONTHLY FEE CALCULATIONS

### 4.1 TREATED WATER RATES

The bi-monthly treated water fee calculations are shown in **Table 9** below.

**Table 9**  
**Treated Water Customers Rates Calculation**

Cost Classification	Cost Share	Cost of Service Current	Fiscal Year Ending				
			2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
			9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Total Revenue Requirement</b>		<b>\$374,423</b>	<b>\$474,320</b>	<b>\$487,111</b>	<b>\$512,298</b>	<b>\$529,894</b>	<b>\$545,911</b>
<i>Percentage Change</i>			26.7%	2.7%	5.2%	3.4%	3.0%
<b>Calculated Charges</b>							
<b>Fixed Charges</b>	<b>70%</b>	<b>\$261,099</b>	<b>\$330,761</b>	<b>\$339,681</b>	<b>\$357,245</b>	<b>\$369,516</b>	<b>\$380,685</b>
Number of Customers/Meters [1]		438	450	452	454	456	458
5/8-inch		436	448	450	451	452	454
3/4-inch		0	0	0	0	0	0
1-inch		2	2	2	3	4	4
1.5-inch		0	0	0	0	0	0
2-inch		0	0	0	0	0	0
Meter Equivalentents		441	453	455	459	462	464
<b>Fixed Charges per Customer [2]</b>							
5/8-inch		\$98.68	\$121.70	\$124.43	\$129.87	\$133.31	\$136.75
3/4-inch		\$148.02	\$182.55	\$186.65	\$194.81	\$199.97	\$205.13
1-inch		\$246.70	\$304.25	\$311.08	\$324.68	\$333.28	\$341.88
1.5-inch		\$493.40	\$608.50	\$622.15	\$649.35	\$666.55	\$683.75
2-inch		\$789.44	\$973.60	\$995.44	\$1,038.96	\$1,066.48	\$1,094.00
<b>Use Charges</b>	<b>30%</b>	<b>\$113,323</b>	<b>\$143,558</b>	<b>\$147,430</b>	<b>\$155,053</b>	<b>\$160,378</b>	<b>\$165,226</b>
Total Use (in cubic feet)		3,980,784	3,980,784	3,998,476	4,016,169	4,033,861	4,051,553
<b>Use Charge per HCF (per unit)</b>		<b>\$2.85</b>	<b>\$3.61</b>	<b>\$3.69</b>	<b>\$3.87</b>	<b>\$3.98</b>	<b>\$4.08</b>

Source: HEC.

rev alloc

[1] Number of customers estimated to grow 2 per year. In year 1, total number of customers is increased by 12 ADUs.

[2] Fixed charges per customer based on ratios by meter size established by AWWA as follows:

	<u>Flow (gpm)</u>	<u>Ratio</u>		<u>Flow (gpm)</u>	<u>Ratio</u>
5/8-inch	10	1.00	1.5-inch	50	5.00
3/4-inch	15	1.50	2-inch	80	8.00
1-inch	25	2.50			

The fee calculations follow these steps:

**Step 1:** Allocate the revenue requirement to be collected from fixed charges versus use charges. Seventy percent of costs were allocated to fixed charges and 30% to use charges. The percentage allocation was calculated in **Appendix Table A-2**.

**Step 2:** Divide the amount to be collected from service charges by the number of meter equivalents. Each 5/8" meter is one meter equivalent. There are two customers with 1" meters. Each one-inch meter equals 2.5 meter equivalents. Then, divide the annual amount to be collected from each meter equivalent by six to determine the bi-monthly service charge by meter size.

**Step 3:** Divide the amount to be collected from use charges by the estimated annual treated water delivery.

The 2015 San Juan Capistrano decision reaffirmed that rates must be proportional to the costs of service received. Water conservation pricing with higher cost paid for greater levels of consumption is only defensible if the cost of water is greater at higher levels of consumption. The District purchases all treated water from WWC at the same cost per unit; therefore, the second-tier pricing is removed in this Study.

#### **4.2 UNTREATED (IRRIGATION) WATER RATES**

The bi-monthly fee calculations for untreated water shown in **Table 10** on the next page follow these steps:

**Step 1:** Allocate the revenue requirement to be collected between metered untreated water customers and flat-rate untreated water customers. The costs were allocated 49% to metered customers and 51% to flat-rate customers based on capacity and flow calculations shown in **Appendix Table A-6**.

**Step 2:** For metered untreated water customers, allocate the revenue requirement between fixed charges and use charges using the calculations shown in **Appendix Table A-2**. Then divide the costs between the total number of equivalent users. The calculation of the number of equivalent units is shown in footnote two. It is assumed that the number of equivalents grows by eight over the five-year period (the equivalent of two new lots taking untreated water each year).

**Step 3:** Divide the annual amount per equivalent user by six to determine the bi-monthly fixed charge per equivalent user. Multiply the charge per equivalent user by the ratio of miner's inches to one miner's inch to determine the fixed fee by miner's inch size service.

**Step 4:** For flat-rate untreated water customers, divide the allocated revenue requirement to this customer group by the number of calculated equivalent users. Then, divide the amount per equivalent user by six to determine the bi-monthly fee per miner's inch. For seasonal miner's inches, multiply the bi-monthly fee per miner's inch by the calculated ratio of seasonal miner's inches to one miner's inch as calculated in **Appendix Table A-7**.

**Table 10  
Untreated Water Customers Rates Calculation**

Customer Group	% Allocation	Cost of Service Current	Fiscal Year Ending				
			2020	2021	2022	2023	2024
			Year 1	Year 2	Year 3	Year 4	Year 5
			9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Total Revenue Requirement</b>		<b>\$199,548</b>	<b>\$297,517</b>	<b>\$359,732</b>	<b>\$387,633</b>	<b>\$415,783</b>	<b>\$444,190</b>
<i>Percentage Change</i>			49.1%	20.9%	7.8%	7.3%	6.8%
<b>Metered Rev. Requirement [1]</b>	<b>49%</b>	<b>\$98,654</b>	<b>\$147,088</b>	<b>\$177,847</b>	<b>\$191,641</b>	<b>\$205,558</b>	<b>\$219,601</b>
<b>Fixed Charges Alloc. Rev. Requirement</b>	<b>77%</b>	<b>\$75,970</b>	<b>\$113,268</b>	<b>\$136,954</b>	<b>\$147,576</b>	<b>\$158,293</b>	<b>\$169,108</b>
Equivalent Users [2]		215	215	217	219	221	223
Fixed Charge Annually per Equivalent User		\$353	\$527	\$631	\$674	\$716	\$758
<b>Bi-Monthly Fixed Charge</b>							
11.22 gpm rate, Bi-Monthly		\$58.89	\$87.81	\$105.19	\$112.32	\$119.38	\$126.39
16.83 gpm rate, Bi-Monthly		\$88.34	\$131.72	\$157.79	\$168.48	\$179.07	\$189.59
22.44 gpm rate, Bi-Monthly		\$117.78	\$175.62	\$210.38	\$224.64	\$238.76	\$252.78
28.05 gpm rate, Bi-Monthly		\$147.23	\$219.53	\$262.98	\$280.80	\$298.45	\$315.98
33.66 gpm rate, Bi-Monthly		\$176.67	\$263.43	\$315.57	\$336.96	\$358.14	\$379.17
39.27 gpm rate, Bi-Monthly		\$206.12	\$307.34	\$368.17	\$393.12	\$417.83	\$442.37
44.88 gpm rate, Bi-Monthly		\$235.57	\$351.24	\$420.76	\$449.28	\$477.52	\$505.56
50.49 gpm rate, Bi-Monthly		\$265.01	\$395.15	\$473.36	\$505.44	\$537.21	\$568.76
56.10 gpm rate, Bi-Monthly		\$294.46	\$439.05	\$525.95	\$561.60	\$596.90	\$631.95
61.71 gpm rate, Bi-Monthly		\$323.90	\$482.96	\$578.55	\$617.76	\$656.59	\$695.15
67.32 gpm rate, Bi-Monthly		\$353.35	\$526.86	\$631.14	\$673.92	\$716.28	\$758.34
72.93 gpm rate, Bi-Monthly		\$382.80	\$570.77	\$683.74	\$730.08	\$775.97	\$821.54
78.54 gpm rate, Bi-Monthly		\$412.24	\$614.67	\$736.33	\$786.24	\$835.66	\$884.73
<b>Use Charges Alloc. Rev. Requirement</b>	<b>23%</b>	<b>\$22,684</b>	<b>\$33,820</b>	<b>\$40,893</b>	<b>\$44,064</b>	<b>\$47,264</b>	<b>\$50,493</b>
Total Use (in cubic feet)		68,661	68,661	69,300	69,939	70,578	71,216
<b>Use Charge per HCF (per unit)</b>		<b>\$0.33</b>	<b>\$0.50</b>	<b>\$0.60</b>	<b>\$0.64</b>	<b>\$0.67</b>	<b>\$0.71</b>
<b>Flat Customers Alloc. Rev. Requirement [1]</b>	<b>51%</b>	<b>\$100,894</b>	<b>\$150,429</b>	<b>\$181,886</b>	<b>\$195,993</b>	<b>\$210,226</b>	<b>\$224,589</b>
Equivalent Users [3]		182	182	182	182	182	182
Miner Inch, year-round, Bi-Monthly		\$92.27	\$137.57	\$166.34	\$179.24	\$192.26	\$205.39
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly		\$80.73	\$120.38	\$145.55	\$156.84	\$168.23	\$179.72

Source: Midway Heights CWD, and HEC.

irr users

[1] Average of capacity and estimated water use calculations in Table A-6.

[2] Equivalent Users Calculation		Ratio to 1	Total	Projected increase 2 per year				
		Miners "	Equivalents					
11.22 gpm rate, Bi-Monthly	11.22	1.00	97.00	99.00	101.00	103.00	105.00	
16.83 gpm rate, Bi-Monthly	16.83	1.50	114.00	114.00	114.00	114.00	114.00	
22.44 gpm rate, Bi-Monthly	22.44	2.00	4.00	4.00	4.00	4.00	4.00	
28.05 gpm rate, Bi-Monthly	28.05	2.50	-	-	-	-	-	
33.66 gpm rate, Bi-Monthly	33.66	3.00	-	-	-	-	-	
39.27 gpm rate, Bi-Monthly	39.27	3.50	-	-	-	-	-	
44.88 gpm rate, Bi-Monthly	44.88	4.00	-	-	-	-	-	
50.49 gpm rate, Bi-Monthly	50.49	4.50	-	-	-	-	-	
56.10 gpm rate, Bi-Monthly	56.10	5.00	-	-	-	-	-	
61.71 gpm rate, Bi-Monthly	61.71	5.50	-	-	-	-	-	
67.32 gpm rate, Bi-Monthly	67.32	6.00	-	-	-	-	-	
72.93 gpm rate, Bi-Monthly	72.93	6.50	-	-	-	-	-	
78.54 gpm rate, Bi-Monthly	78.54	7.00	-	-	-	-	-	
<b>Total Metered Equivalent Users</b>			<b>215.00</b>	<b>217.00</b>	<b>219.00</b>	<b>221.00</b>	<b>223.00</b>	

[3] Flat Rate Customers Equivalent Users

Year-Round Miner Inches		177.00	1.00	177.00
Seasonal Miner Inches	See Table A-7	6.00	0.88	5.25
<b>Total Flat Rate Equivalent Users</b>				<b>182.25</b>

### 4.3 COYOTE HILLS PUMPING CHARGE

Treated and untreated water customers in the Coyote Hills pump zone pay the electric charges for pumping to that zone only. Currently, customers pay \$0.23 per unit of water. **Appendix Table A-8** shows the calculation of the Coyote Hills pumping charge for the next five years. The fees are based on electric bills increasing 5.0% per year, and no change in the quantity of water used (expressed in units, or hundreds of cubic feet).

Both **Table 9** and **Table 10** show the calculated cost of service fees for the current fiscal year (2019). The cost of service fees and actual current fees are compared in **Table 11**. The table shows that the untreated metered water customers should be paying more than they currently are. Flat-rate year-round miner’s inch untreated water customers should be paying less than they currently do. The table also shows that more of the treated water costs should be recovered through use charges.

**Table 11**  
**Comparison of Cost-of-Service and Current Fees**

Fee Schedule	Current	Cost of Service
<b>Treated Water Metered</b>		
Service Charge, Bi-Monthly	\$103.92	\$98.68
Tier A (0-8 units)	\$2.15	-
Tier B (>8 units)	\$4.20	-
All Units		\$2.85
<b>Irrigation Water Metered</b>		
Service Charge 1", 11.22 gpm rate, Bi-Monthly	\$43.44	\$58.89
Service Charge 2", 16.83 gpm rate, Bi-Monthly	\$59.34	\$88.34
Service Charge 3", 22.44 gpm rate, Bi-Monthly	\$75.22	\$117.78
Irrigation usage, per hundred cubic feet	\$0.23	\$0.33
<b>Irrigation Water Flat Rate</b>		
Miner Inch, year-round, Bi-Monthly	\$119.98	\$92.27
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly	\$73.44	\$80.73

Source: MHCWD and HEC.

cos

Table 12 shows the resulting new rates schedule.

**Table 12**  
**Calculated New Rates**

Customer	Current	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
	<i>New Rates Effective ----&gt;</i>	<i>9/1/2019</i>	<i>7/1/2020</i>	<i>7/1/2021</i>	<i>7/1/2022</i>	<i>7/1/2023</i>
<b>Treated Water</b>		<b>COST OF SERVICE FEES</b>				
Service Charge (Bi-Monthly)	\$103.92					
5/8-inch		\$121.70	\$124.43	\$129.87	\$133.31	\$136.75
3/4-inch		\$182.55	\$186.65	\$194.81	\$199.97	\$205.13
1-inch		\$304.25	\$311.08	\$324.68	\$333.28	\$341.88
1.5-inch		\$608.50	\$622.15	\$649.35	\$666.55	\$683.75
2-inch		\$973.60	\$995.44	\$1,038.96	\$1,066.48	\$1,094.00
Use Charge (All Units)		\$3.61	\$3.69	\$3.87	\$3.98	\$4.08
Tier A (0-8 units)	\$2.15					
Tier B (>8 units)	\$4.20					
<b>Irrigation Water Metered</b>						
Service Charge 1", 11.22 gpm rate, Bi-Monthly	\$43.44	\$87.81	\$105.19	\$112.32	\$119.38	\$126.39
Service Charge 2", 16.83 gpm rate, Bi-Monthly	\$59.34	\$131.72	\$157.79	\$168.48	\$179.07	\$189.59
Service Charge 3", 22.44 gpm rate, Bi-Monthly	\$75.22	\$175.62	\$210.38	\$224.64	\$238.76	\$252.78
Irrigation usage, per unit	\$0.23	\$0.50	\$0.60	\$0.64	\$0.67	\$0.71
<b>Irrigation Water Flat Rate</b>						
Miner Inch, year-round, Bi-Monthly	\$119.98	\$137.57	\$166.34	\$179.24	\$192.26	\$205.39
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly	\$73.44	\$120.38	\$145.55	\$156.84	\$168.23	\$179.72
<b>Coyote Hills Estates</b>						
Pumped Water Surcharge, per unit [1]	\$0.23	\$0.28	\$0.30	\$0.31	\$0.33	\$0.34

Source: HEC 2019 rate study.

summ

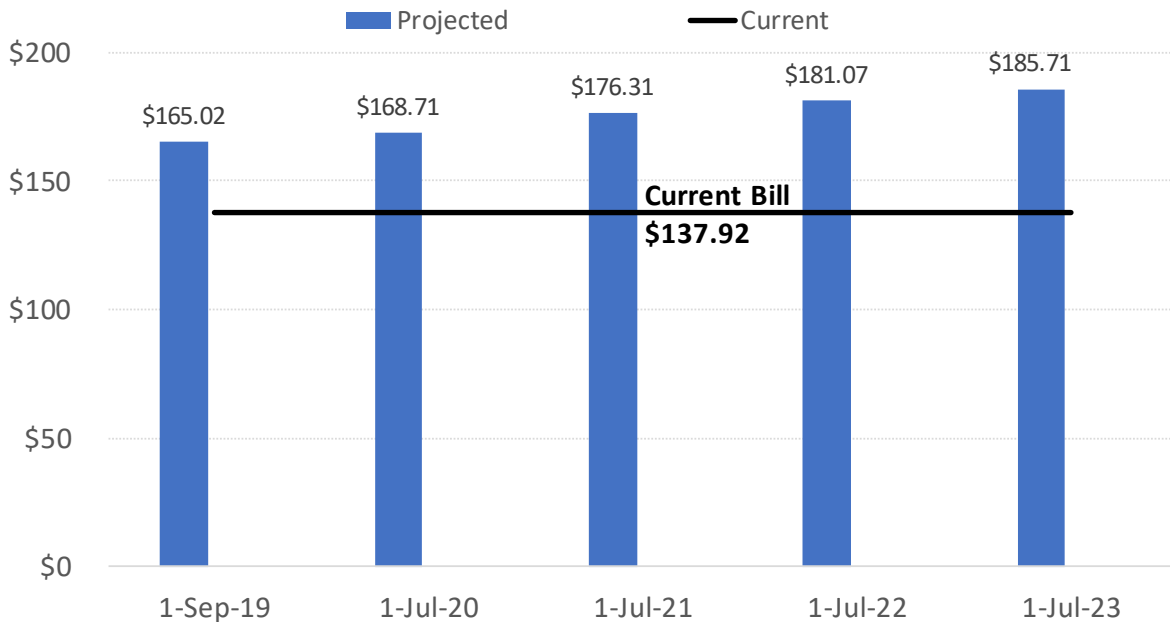
[1] Charged to both treated and untreated water customers.

#### 4.4 BILL IMPACTS

**Figure 9** illustrates the projected bill impact for a residential customer using 12 HCF of treated water. Currently, at this level of use, the treated water bill would be \$137.92. With the first rate increase, the bill would increase to \$165.02 September 1, 2019.

The impact to treated water bills at different levels of water use for the first increase September 1, 2019 is shown in **Table 13** on the next page. Almost three-quarters of treated water bills fall in the range of 4 to 16 units of water use bi-monthly. One-quarter of bills are for 12 units of water. At higher levels of water use the total bill would decrease because the second tier is removed and all water use billed at the same rate.

**Figure 9**  
**Projected Bi-Monthly Fees for 12 HCF**



Metered irrigation customer bill impacts September 1, 2019 are shown in **Table 14** on page 26. About one-fifth of bills are for use of 4 units of water for two months. At this level of use, the untreated water bill would increase from \$44.36 to \$89.81.

**Table 13**  
**Treated Water Customer Bill Impact**

Use (HCF)	No. of Bills	% of Bills	Current			Sep-19			Bi-Month Bill Change
			Service Charge	Use Charge	Total	Service Charge	Use Charge	Total	
			<i>Bi-Monthly Bill</i>			<i>Bi-Monthly Bill</i>			
0	31	1%	\$103.92	\$0.00	\$103.92	\$121.70	\$0.00	\$121.70	\$17.78
4	280	11%	\$103.92	\$8.60	\$112.52	\$121.70	\$14.44	\$136.14	\$23.62
8	568	22%	\$103.92	\$17.20	\$121.12	\$121.70	\$28.88	\$150.58	\$29.46
12	637	25%	\$103.92	\$34.00	\$137.92	\$121.70	\$43.32	\$165.02	\$27.10
16	380	15%	\$103.92	\$50.80	\$154.72	\$121.70	\$57.76	\$179.46	\$24.74
20	209	8%	\$103.92	\$67.60	\$171.52	\$121.70	\$72.20	\$193.90	\$22.38
24	133	5%	\$103.92	\$84.40	\$188.32	\$121.70	\$86.64	\$208.34	\$20.02
28	75	3%	\$103.92	\$101.20	\$205.12	\$121.70	\$101.08	\$222.78	\$17.66
32	55	2%	\$103.92	\$118.00	\$221.92	\$121.70	\$115.52	\$237.22	\$15.30
36	30	1%	\$103.92	\$134.80	\$238.72	\$121.70	\$129.96	\$251.66	\$12.94
40	34	1%	\$103.92	\$151.60	\$255.52	\$121.70	\$144.40	\$266.10	\$10.58
80	114	4%	\$103.92	\$319.60	\$423.52	\$121.70	\$288.80	\$410.50	(\$13.02)
120	19	1%	\$103.92	\$487.60	\$591.52	\$121.70	\$433.20	\$554.90	(\$36.62)
160	6	0%	\$103.92	\$655.60	\$759.52	\$121.70	\$577.60	\$699.30	(\$60.22)
240	4	0%	\$103.92	\$991.60	\$1,095.52	\$121.70	\$866.40	\$988.10	(\$107.42)
320	4	0%	\$103.92	\$1,327.60	\$1,431.52	\$121.70	\$1,155.20	\$1,276.90	(\$154.62)
400	1	0%	\$103.92	\$1,663.60	\$1,767.52	\$121.70	\$1,444.00	\$1,565.70	(\$201.82)
> 400	1	0%							

Source: HEC.

tr bill

**Table 14**  
**Metered Irrigation Customer Bill Impact**

Use (HCF)	No. of Bills	% of Bills	Current			Sep-19			Bi-Month Bill Change
			Service Charge	Use Charge	Total	Service Charge	Use Charge	Total	
			<i>One Miner Inch Bi-Monthly Bill</i>			<i>One Miner Inch Bi-Monthly Bill</i>			
0	141	13%	\$43.44	\$0.00	\$43.44	\$87.81	\$0.00	\$87.81	\$44.37
4	221	21%	\$43.44	\$0.92	\$44.36	\$87.81	\$2.00	\$89.81	\$45.45
8	64	6%	\$43.44	\$1.84	\$45.28	\$87.81	\$4.00	\$91.81	\$46.53
12	49	5%	\$43.44	\$2.76	\$46.20	\$87.81	\$6.00	\$93.81	\$47.61
16	43	4%	\$43.44	\$3.68	\$47.12	\$87.81	\$8.00	\$95.81	\$48.69
20	36	3%	\$43.44	\$4.60	\$48.04	\$87.81	\$10.00	\$97.81	\$49.77
24	21	2%	\$43.44	\$5.52	\$48.96	\$87.81	\$12.00	\$99.81	\$50.85
28	28	3%	\$43.44	\$6.44	\$49.88	\$87.81	\$14.00	\$101.81	\$51.93
32	23	2%	\$43.44	\$7.36	\$50.80	\$87.81	\$16.00	\$103.81	\$53.01
36	25	2%	\$43.44	\$8.28	\$51.72	\$87.81	\$18.00	\$105.81	\$54.09
40	11	1%	\$43.44	\$9.20	\$52.64	\$87.81	\$20.00	\$107.81	\$55.17
80	142	13%	\$43.44	\$18.40	\$61.84	\$87.81	\$40.00	\$127.81	\$65.97
120	84	8%	\$43.44	\$27.60	\$71.04	\$87.81	\$60.00	\$147.81	\$76.77
160	47	4%	\$43.44	\$36.80	\$80.24	\$87.81	\$80.00	\$167.81	\$87.57
240	52	5%	\$43.44	\$55.20	\$98.64	\$87.81	\$120.00	\$207.81	\$109.17
320	25	2%	\$43.44	\$73.60	\$117.04	\$87.81	\$160.00	\$247.81	\$130.77
400	15	1%	\$43.44	\$92.00	\$135.44	\$87.81	\$200.00	\$287.81	\$152.37
600	15	1%	\$43.44	\$138.00	\$181.44	\$87.81	\$300.00	\$387.81	\$206.37
800	3	0%	\$43.44	\$184.00	\$227.44	\$87.81	\$400.00	\$487.81	\$260.37
1,000	4	0%	\$43.44	\$230.00	\$273.44	\$87.81	\$500.00	\$587.81	\$314.37
1,200	0	0%	\$43.44	\$276.00	\$319.44	\$87.81	\$600.00	\$687.81	\$368.37
1,400	1	0%	\$43.44	\$322.00	\$365.44	\$87.81	\$700.00	\$787.81	\$422.37
1,600	0	0%	\$43.44	\$368.00	\$411.44	\$87.81	\$800.00	\$887.81	\$476.37
>1,600	2	0%							

Source: HEC.

irr bill



## SECTION 5: CONNECTION FEES CALCULATIONS

### 5.1 TREATED WATER CONNECTION FEE

The treated water connection fee should be increased to pay for the remaining undeveloped lots' share of facilities constructed to service all treated water lots plus the costs allocated to new treated water customers in the CIP, **Table 6**.

The estimated net book value of existing treated water facilities, which uses the replacement cost method and deducts accumulated depreciation, (detailed in **Appendix A, Table A-3**) is \$3.1 million. Of this total, 25% (the remaining development potential shown in **Table 4**) is allocated to new customers.

The cost of new facilities to be borne by new treated water customers is \$35,000. The total cost to future treated water customers is just over \$832,000. Divided by the total number of expected new users the connection fee is \$5,584.92 per building.

A new fee per ADU has also been calculated. California Senate Bill 229 requires that detached ADUs with a separate water connection pay connection fees for water but that the fee must be proportional to water use compared to standard sized dwelling units. The fee per ADU is calculated as 60.6% of the fee for a standard residential building. The percentage is calculated as 2 persons per unit divided by 3.33 persons per unit. There are 3.33 persons per building on average within the District's service territory, per State Water Resources Control Board records. It is assumed there are on average two persons per ADU. On July 18, 2019, the District Board of Directors voted to move forward with the calculated updated fees as presented in this Study. The treated water connection fees will be changed each fiscal year based on the preceding March to March twelve month change in the ENR CCI.

### 5.2 UNTREATED WATER CONNECTION FEE

The District currently does not charge a connection fee for the untreated water system. An untreated water connection fee should be considered, particularly because this water system provides fire suppression service. This Study calculates that the maximum justifiable untreated water connection fee is \$4,057.68 per lot. This fee was presented and discussed at the July 18, 2019 Board of Directors meeting. The District voted to move forward with an untreated water connection fee of \$2,000. The fee will be changed each fiscal year based on the preceding March to March twelve month change in the ENR CCI. The new fee is not included in the updated water rate calculations; because typically only one or two new connections are made to the irrigation system each year the amount of potential additional revenue to the District is insignificant.

The calculated updated connection fees are shown in **Table 15** on the next page.

**Table 15**  
**Calculated Connection Fees**

Projects	Connection Fee Type	
	Treated	Irrigation
<b>New Projects</b>	<i>See Table 6</i>	
Treated Master Meter Installation & PRV Replacement	\$0	\$0
Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$15,400	\$13,200
Proposed 2.5 Mile Fire Break with Fire Hydrants from West Weimar Cross Rd to Crother Rd	\$19,600	\$16,800
Blackberry Irrigation & Fire Loop	\$0	\$123,750
6" Irrigation PRV	\$0	\$0
Hillsdale Irrigation Main Replacement	\$0	\$0
<b>New Projects Cost Estimate</b>	<b>\$35,000</b>	<b>\$153,750</b>
<b>Buy-In</b>		
Net Book Value of System	\$2,926,729	\$1,101,184
Net Book Value of Shared Assets (both systems) [1]	\$213,731	\$169,310
<b>Total Net Book Value</b>	<b>\$3,140,459</b>	<b>\$1,270,494</b>
<i>Percentage Share Future Customers -- See Table 4</i>	<i>25%</i>	<i>25%</i>
<b>Buy-In Costs</b>	<b>\$797,152</b>	<b>\$316,940</b>
<b>Total Cost to Future Users</b>	<b>\$832,152</b>	<b>\$470,690</b>
Number of Undeveloped Properties	149	116
<b>Calculated Connection Fee per Standard Building (treated) or per Lot (untreated)</b>	<b>\$5,584.92</b>	<b>\$4,057.68</b>
<b>New Connection Fee per ADU [2]</b>	<b>\$3,384.80</b>	
<b>Current Connection Fee</b>	<b>\$3,620.28</b>	<b>\$0.00</b>
Increase/Decrease Connection Fee	\$1,964.64	\$4,057.68

Source: MHCWD and HEC.

conn fee

[1] Cost allocation based on number of lots at buildout.

Lots at Buildout	Table 4
587	56%
465	44%
<u>1,052</u>	

[2] 60.6% of a standard dwelling unit assuming 2 persons per ADU and a District average of 3.3 persons per standard dwelling unit (per State Water Resources Control Board sanitation reports).

## **APPENDIX A**

### **BI-MONTHLY FEES SUPPORT TABLES**



**Table A-1**  
**Midway Heights CWD 2019 Fee Study**  
**District Financials**

Revenues and Expenses	Actual 2017	Actual 2018	Approved 2019	Approved 2020
<b>Revenues</b>				
<b>Treated Water</b>				
Treated Water Sales	\$201,256	\$379,434	\$374,423	\$385,653
Reconnection Fees	\$150	\$250	\$125	\$125
Installations	\$5,225	\$3,631	\$3,000	\$4,000
<b>Subtotal Treated Water Revenue</b>	<b>\$206,631</b>	<b>\$383,315</b>	<b>\$377,548</b>	<b>\$389,778</b>
<b>Irrigation Water Revenues</b>				
Irrigation Water Sales	\$361,795	\$202,522	\$199,548	\$203,751
Reconnection Fees	\$950	\$550	\$600	\$600
Installations	\$6,499	\$394	\$3,000	\$4,000
<b>Subtotal Irrigation Water Revenue</b>	<b>\$369,244</b>	<b>\$203,466</b>	<b>\$203,148</b>	<b>\$208,351</b>
Late Charges / Fees	\$7,109	\$8,434	\$8,656	\$7,551
<b>Total Revenues</b>	<b>a \$582,985</b>	<b>\$595,215</b>	<b>\$589,352</b>	<b>\$605,680</b>
<b>Expenses</b>				
Irrigation Water Purchase	\$25,036	\$23,832	\$34,878	\$29,123
Treated Water Purchase	\$96,834	\$101,705	\$100,042	\$123,469
Salaries and Benefits	\$260,389	\$267,962	\$273,432	\$296,594
Social Security, PERS, Medicare, CA Employee Training	\$22,039	\$25,341	\$28,003	\$31,894
Professional Services	\$21,570	\$16,328	\$24,244	\$28,310
Contract Field Work	\$9,709	\$6,640	\$8,440	\$7,240
Office	\$4,751	\$4,423	\$5,234	\$4,850
Postage	\$2,439	\$1,482	\$2,499	\$2,803
Telephone, pagers & alarms	\$8,250	\$8,328	\$8,945	\$6,757
Utilities (Electric & Telemetry)	\$2,886	\$3,385	\$3,308	\$3,691
Dues and fees	\$6,590	\$5,717	\$6,124	\$6,168
Election expense	\$250	\$0	\$250	\$0
Directors' Costs	\$4,871	\$5,285	\$7,770	\$7,968
Insurance	\$17,213	\$13,038	\$18,553	\$22,072
Ops. & Maint. Materials - Irrig. System	\$40,124	\$4,254	\$11,250	\$13,250
Ops. & Maint. Materials - Treated System	\$9,088	\$9,760	\$5,800	\$8,150
Mileage Reimbursement	\$363	\$0	\$500	\$500
Travel, meetings & training	\$1,697	\$845	\$3,000	\$3,000
Safety equipment	\$2,301	\$3,620	\$3,000	\$3,000
DHS water system fee	\$2,526	\$2,556	\$2,592	\$2,622
Vehicle/mobile equipment	\$13,436	\$14,403	\$15,700	\$9,500
Rentals	\$6,193	\$6,630	\$8,630	\$9,009
Bank charges	\$946	\$392	\$250	\$966
Administrative Fees	\$1,714	\$808	\$1,405	\$1,225
<b>Total Expenses</b>	<b>b \$561,213</b>	<b>\$526,734</b>	<b>\$573,849</b>	<b>\$622,161</b>

**Table A-1**  
**Midway Heights CWD 2019 Fee Study**  
**District Financials**

Revenues and Expenses		Actual 2017	Actual 2018	Approved 2019	Approved 2020
<b>Net Operating Revenues</b>	<b>c = a-b</b>	<b>\$21,772</b>	<b>\$68,481</b>	<b>\$15,503</b>	<b>(\$16,481)</b>
<b>Non-Operating Revenues</b>					
Treated Water Connection Fees		\$4,300	\$4,816	\$5,000	\$5,000
Property Taxes		\$43,802	\$45,711	\$45,977	\$47,600
Interest		\$2,904	\$4,195	\$3,300	\$4,300
Miscellaneous		\$36,035	\$585	\$100	\$100
<b>Subtotal Non-Operating Revenues</b>	<b>d</b>	<b>\$87,041</b>	<b>\$55,307</b>	<b>\$54,377</b>	<b>\$57,000</b>
<b>Non-Operating Expenses</b>					
Treated Capital Facilities Fund costs		\$4,300	\$4,816	\$5,000	\$5,000
Irrigation Rate Shift Fund costs		\$18,500	\$0	\$0	\$1,961
<b>Subtotal Non-Operating Expenses</b>	<b>e</b>	<b>\$22,800</b>	<b>\$4,816</b>	<b>\$5,000</b>	<b>\$6,961</b>
<b>Capital Expenses</b>					
Vehicle/Mobile Equipment Reserve costs		\$10,000	\$4,891	\$6,350	\$27,691
Emergency Reserve costs		\$2,950	\$0	\$0	\$0
Debt Service (tank)		\$60,527	\$59,626	\$60,531	\$60,584
Capital Improvements		\$130,435	\$4,068	\$10,000	\$16,000
<b>Total Capital Expenses</b>	<b>f</b>	<b>\$203,912</b>	<b>\$68,585</b>	<b>\$76,881</b>	<b>\$104,275</b>
<b>Net Revenues</b>	<b>g = c+d-e-f</b>	<b>(\$117,899)</b>	<b>\$50,387</b>	<b>(\$12,000)</b>	<b>(\$70,717)</b>
<b>Funded by Reserves</b>					
Future Occurrences Reserve costs		\$83,193	\$0	\$0	\$13,070
Treated Capital Facilities Fund		\$47,242	\$4,068	\$12,000	\$17,599
Rate Stabilization Reserve		\$0	\$0	\$0	\$15,538
Current FY Operation Fund		\$0	\$0	\$0	\$18,511
<b>Total Funded by Reserves</b>	<b>h</b>	<b>\$130,435</b>	<b>\$4,068</b>	<b>\$12,000</b>	<b>\$64,718</b>
<b>Budget</b>	<b>i = g+h</b>	<b>\$12,535</b>	<b>\$54,455</b>	<b>(\$0)</b>	<b>(\$5,999)</b>

Source: Midway Heights CWD financial documents.

budget

**Table A-2**  
**Midway Heights CWD 2019 Fee Study**  
**Fiscal Year 2020 Budget by System**

Revenues and Expenses	Treated Water		Irrigation Water	
<b>REVENUES</b>				
<b>Operating Revenues</b>				
Water Sales	65%	\$385,653	35%	\$203,751
Reconnection Fees	17%	\$125	83%	\$600
Installations	63%	\$5,000	38%	\$3,000
Late Charges / Fees	67%	\$5,094	33%	\$2,457
<b>Subtotal Operating Revenues</b>	<b>65%</b>	<b>\$395,872</b>	<b>35%</b>	<b>\$209,808</b>
<b>Non-Operating Revenues</b>				
Connection Fees	100%	\$5,000	0%	\$0
Property Taxes	56%	\$26,656	44%	\$20,944
Interest	56%	\$2,408	44%	\$1,892
Miscellaneous	56%	\$56	44%	\$44
<b>Subtotal Non-Operating Revenues</b>	<b>60%</b>	<b>\$34,120</b>	<b>40%</b>	<b>\$22,880</b>
<b>Total Revenues</b>	<b>65%</b>	<b>\$429,992</b>	<b>35%</b>	<b>\$232,688</b>
<b>EXPENSES</b>				
<b>Operating Expenses</b>				
Water Purchases	81%	\$123,469	19%	\$29,123
Salaries and Benefits **	61%	\$200,415	39%	\$128,073
Professional Services **	62%	\$17,421	38%	\$10,889
Contract Field Work	19%	\$1,370	81%	\$5,870
Ops. & Maint. Materials	38%	\$8,150	62%	\$13,250
DHS Water System Fee **	100%	\$2,622	0%	\$0
All Other Operating Expenses **	54%	\$44,421	46%	\$37,087
<b>Subtotal Operating Expenses</b>	<b>64%</b>	<b>\$397,868</b>	<b>36%</b>	<b>\$224,292</b>
<b>Non-Operating Expenses</b>				
Treated Capital Facilities Fund costs	100%	\$5,000	0%	\$0
Irrigation Rate Shift Fund	0%	\$0	100%	\$1,961
<b>Capital Expenses</b>				
Trucks Loan **	56%	\$15,507	44%	\$12,184
Debt Service (tank) **	100%	\$60,584	0%	\$0
Capital Improvements	63%	\$10,000	38%	\$6,000
<b>Total Expenses</b>	<b>67%</b>	<b>\$488,959</b>	<b>33%</b>	<b>\$244,437</b>
<b>Net Revenues</b>		<b>(\$58,967)</b>		<b>(\$11,749)</b>
Funded by Reserves		\$58,967		\$5,751
<b>Budget</b>		<b>\$0</b>		<b>(\$5,998)</b>
<b>FIXED COSTS **</b>				
	70%	\$340,970	77%	\$188,233
<b>VARIABLE COSTS</b>				
	30%	\$147,989	23%	\$56,204
<b>TOTAL COSTS</b>		<b>\$488,959</b>		<b>\$244,437</b>
<b>Percentage of Total Costs</b>		<b>67%</b>		<b>33%</b>

Source: Midway Heights CWD May 2019.

2020 fin

**Table A-3**  
**Midway Heights CWD 2019 Fee Study**  
**Estimated Net Book Value of Assets**

Asset Type	Cost Basis Year	Original Cost	Inflator	Replacement Cost	Life (Years)	Annual Depreciation	Years Depreciated	Accumulated Depreciation	Net Book Value
<b>Buildings (G/L17500)</b>									
Shed, 12' x 20', Mini-Barn	1987	\$2,600	2.54	\$6,591	20	\$0	20	\$0	\$6,591
Shed, 12' x 20', Quality Craftsman	1991	\$3,300	2.31	\$7,624	20	\$0	20	\$0	\$7,624
Carport, 21X21	2005	\$1,979	1.50	\$2,969	20	\$148	14	\$2,079	\$891
concrete improvements	2005	\$7,300	1.50	\$10,951	30	\$365	14	\$5,110	\$5,841
30X30 Garage	2005	\$39,543	1.50	\$59,319	30	\$1,977	14	\$27,682	\$31,637
asphalt	2005	\$6,450	1.50	\$9,676	20	\$484	14	\$6,773	\$2,903
10x8 "Strong Hold Shed" @ treated tank	2008	\$802	1.34	\$1,078	5	\$0	5	\$0	\$1,078
<b>Total Buildings</b>		<b>\$61,974</b>		<b>\$98,209</b>		<b>\$2,975</b>		<b>\$41,644</b>	<b>\$56,564</b>
<b>Field Equipment (G/L 17300)</b>									
Pipe Locator, Fisher M Scope, TW6 w/ Handle	1987	\$620	2.54	\$1,572	10	\$0	10	\$0	\$1,572
Weed Eater, Homelite, String Trimmer, HBC - 30	1988	\$196	2.47	\$484	5	\$0	5	\$0	\$484
Walkie - Talkies, Radio Shack, TRC - 207	1988	\$185	2.47	\$457	5	\$0	5	\$0	\$457
Soil Pipe Cutter, Ridged	1989	\$232	2.42	\$562	10	\$0	10	\$0	\$562
Check Valve Test Kit, Mid West 890	1987	\$625	2.54	\$1,584	10	\$0	10	\$0	\$1,584
Pump, Honda, WB20X	1990	\$546	2.36	\$1,289	5	\$0	5	\$0	\$1,289
Electrical Service To Shed	1990	\$649	2.36	\$1,532	20	\$0	20	\$0	\$1,532
Metal Locator, Fisher M-65	1990	\$343	2.36	\$810	10	\$0	10	\$0	\$810
Tapping Machine	1991	\$925	2.31	\$2,137	10	\$0	10	\$0	\$2,137
Tool Boxes (for service truck), 2-Weather Guard R184	1991	\$545	2.31	\$1,259	5	\$0	5	\$0	\$1,259
Sales tax on Truck	1991	\$899	2.31	\$2,077	5	\$0	5	\$0	\$2,077
Cutoff saw, Hasqvarna 272k-12"	1992	\$965	2.24	\$2,162	5	\$0	5	\$0	\$2,162
Leak Locator, Pinpoint HL-90 , SN-2512	1992	\$1,521	2.24	\$3,408	10	\$0	10	\$0	\$3,408
Kubota, Backhoe/Loader	1993	\$32,183	2.14	\$68,999	15	\$0	15	\$0	\$68,999
Pronovost Dump Trailer, Model P-503	1994	\$2,055	2.07	\$4,244	15	\$0	15	\$0	\$4,244
Dickson Weather Proof Recorder 4"	1995	\$466	2.04	\$951	5	\$0	5	\$0	\$951
Tractor Port	1995	\$652	2.04	\$1,331	20	\$0	20	\$0	\$1,331
Weed Eater 225R	1995	\$421	2.04	\$860	5	\$0	5	\$0	\$860
Chainsaw Husky 340 16"	1995	\$295	2.04	\$602	5	\$0	5	\$0	\$602
Fork Set, capacity 2500 lbs (for Kubota)	1996	\$778	1.99	\$1,546	10	\$0	10	\$0	\$1,546
Milltronics Miniranger Plus, Level Monitor	1997	\$1,385	1.92	\$2,655	10	\$0	10	\$0	\$2,655
Truck, 2001 Dodge Dakota 4x4, Pickup	1997	\$23,853	1.92	\$45,733	5	\$0	5	\$0	\$45,733
Tool Boxes (for service truck)	1997	\$1,233	1.92	\$2,363	5	\$0	5	\$0	\$2,363
Invertor (Yamaha 2800)	1999	\$1,634	1.84	\$3,012	5	\$0	5	\$0	\$3,012
Truck, Ford F350	2002	\$38,786	1.71	\$66,265	5	\$0	5	\$0	\$66,265
Check Valve Test Kit, Mid West 835	2004	\$707	1.57	\$1,110	10	\$0	10	\$0	\$1,110
Metal Locator, Fisher M-97	2004	\$616	1.57	\$967	10	\$0	10	\$0	\$967
Split shaft trimmer and attachments, Husqvarna	2005	\$874	1.50	\$1,311	5	\$0	5	\$0	\$1,311
Radiodetection line locator	2005	\$5,767	1.50	\$8,651	10	\$0	10	\$0	\$8,651
Engine for Kubota	2005	\$10,295	1.50	\$15,444	10	\$0	10	\$0	\$15,444
Safty Cabinet Flamable Liquid	2007	\$1,517	1.40	\$2,126	15	\$142	12	\$1,701	\$425
Panisonic lap top for field	2007	\$4,374	1.40	\$6,133	5	\$0	5	\$0	\$6,133
2001 equipment trailer	2007	\$1,634	1.40	\$2,291	10	\$0	10	\$0	\$2,291
Eye Wash station	2008	\$1,676	1.34	\$2,253	10	\$0	10	\$0	\$2,253
4x8x1" trench plate	2009	\$1,635	1.30	\$2,131	10	\$0	10	\$0	\$2,131
Dump trailer 2013	2009	\$6,414	1.30	\$8,360	10	\$0	10	\$0	\$8,360
1996 Ford truck	2012	\$8,094	1.20	\$9,713	5	\$0	5	\$0	\$9,713
Ranger handheld and belt clip transceiver	2012	\$11,886	1.20	\$14,263	5	\$0	5	\$0	\$14,263
Honda generator EU3000IS	2012	\$1,782	1.20	\$2,138	5	\$0	5	\$0	\$2,138
<b>Total Field Equipment</b>		<b>\$169,260</b>		<b>\$294,786</b>		<b>\$142</b>		<b>\$1,701</b>	<b>\$293,085</b>



**Table A-3**  
**Midway Heights CWD 2019 Fee Study**  
**Estimated Net Book Value of Assets**

Asset Type	Cost Basis Year	Original Cost	Inflator	Replacement Cost	Life (Years)	Annual Depreciation	Years Depreciated	Accumulated Depreciation	Net Book Value
<b>Office Equipment (G/L 17400)</b>									
File Cabinets, (3), Four Drawer	1984	\$270	2.69	\$727	15	\$0	15	\$0	\$727
Computer , Performa 6205CD & Apple LaserWriter 4/600PS	1991	\$3,004	2.31	\$6,940	5	\$0	5	\$0	\$6,940
Placer PC Computer System	1995	\$2,664	2.04	\$5,439	5	\$0	5	\$0	\$5,439
Continental Computer Billing System	1995	\$3,420	2.04	\$6,983	5	\$0	5	\$0	\$6,983
HP Computer Pavilion 250Y	2000	\$1,370	1.80	\$2,460	5	\$0	5	\$0	\$2,460
HP Officejet printer	2000	\$770	1.80	\$1,383	5	\$0	5	\$0	\$1,383
Samsung monitor	2000	\$220	1.80	\$395	5	\$0	5	\$0	\$395
Office chairs(6)	2002	\$372	1.71	\$636	5	\$0	5	\$0	\$636
office desk	2002	\$1,080	1.71	\$1,845	5	\$0	5	\$0	\$1,845
Gateway Computer and monitor	2002	\$1,388	1.71	\$2,371	5	\$0	5	\$0	\$2,371
Compaq Laptop computer	2004	\$704	1.57	\$1,105	5	\$0	5	\$0	\$1,105
Vizo 37 inch monitor	2004	\$900	1.57	\$1,413	5	\$0	5	\$0	\$1,413
Desk Top Computer	2006	\$655	1.44	\$944	5	\$0	5	\$0	\$944
Desk Top Computer	2007	\$535	1.40	\$750	5	\$0	5	\$0	\$750
<b>Total Office Equipment</b>		<b>\$17,352</b>		<b>\$33,391</b>		<b>\$0</b>		<b>\$0</b>	<b>\$33,391</b>
<b>Distribution Equipment - Irrigation Water (G/L 17200)</b>									
Distribution Facility	1956	\$170,000	16.14	\$2,744,075	75	\$36,588	63	\$2,305,023	\$439,052
Reservoir	1957	\$24,500	15.43	\$377,990	100	\$3,780	62	\$234,354	\$143,636
Mainline Extensions (AC)	1973	\$87,460	5.89	\$515,529	75	\$6,874	46	\$316,191	\$199,338
Mainline Extensions (PVC)	1992	\$10,475	2.24	\$23,472	40	\$587	27	\$15,843	\$7,628
CHE Tank	1996	\$140,050	1.99	\$278,356	50	\$5,567	23	\$128,044	\$150,312
6-in mainline valve	2007	\$909	1.40	\$1,275	50	\$26	12	\$306	\$969
irrigation meter replacement	2009	\$33,807	1.30	\$44,064	10	\$0	10	\$0	\$44,064
irrigation meter install 2014	2010	\$17,323	1.27	\$21,983	10	\$2,198	9	\$19,785	\$2,198
Hillsdale Irrigation line	2011	\$67,190	1.23	\$82,747	50	\$1,655	8	\$13,240	\$69,508
irrigation PRV and Lids	2011	\$53,113	1.23	\$65,410	25	\$2,616	8	\$20,931	\$44,479
<b>Total Distribution Equipment - Irrigation</b>		<b>\$604,828</b>		<b>\$4,154,901</b>		<b>\$59,890</b>		<b>\$3,053,717</b>	<b>\$1,101,184</b>
<b>Distribution Equipment - Treated Water (G/L 17100)</b>									
Land	1988	\$38,643							
Distribution Facility	1986	\$1,791,949	2.60	\$4,660,319	50	\$93,206	33	\$3,075,811	\$1,584,508
Auto Dialer Tank Alarm	1991	\$7,290	2.31	\$16,842	15	\$0	15	\$0	\$16,842
PRV (Peaceful Valley Zone)	1991	\$4,000	2.31	\$9,241	30	\$308	28	\$8,625	\$616
CHE	1996	\$69,050	1.99	\$137,240	50	\$2,745	23	\$63,130	\$74,110
LVH	1998	\$81,383	1.89	\$153,555	50	\$3,071	21	\$64,493	\$89,062
Hillsdale PRV drain	1999	\$1,992	1.84	\$3,672	50	\$73	20	\$1,469	\$2,203
Backup generator/pump for CHE	2000	\$707	1.80	\$1,269	10	\$0	10	\$0	\$1,269
Tank level transducer CHE treated tank	2006	\$3,118	1.44	\$4,493	10	\$0	10	\$0	\$4,493
Tank level alarm 0.14 MG main tank	2007	\$1,602	1.40	\$2,247	10	\$0	10	\$0	\$2,247
radio read meter replacement program 2011	2007	\$31,423	1.40	\$44,062	10	\$0	10	\$0	\$44,062
radio read meter replacement program 2012	2008	\$53,826	1.34	\$72,351	10	\$0	10	\$0	\$72,351
8 inch master meter	2008	\$3,961	1.34	\$5,325	10	\$0	10	\$0	\$5,325
radio read meter replacement program 2013	2009	\$1,399	1.30	\$1,823	10	\$0	10	\$0	\$1,823
0.33 MG treated tank and site improvements	2010	\$884,968	1.27	\$1,123,051	50	\$22,461	9	\$202,149	\$920,902
0.14 MG treated tank and site improvements	2012	\$137,066	1.20	\$164,485	20	\$8,224	7	\$57,570	\$106,915
<b>Distribution Equipment - Treated Water</b>		<b>\$3,112,378</b>		<b>\$6,399,976</b>		<b>\$130,089</b>		<b>\$3,473,247</b>	<b>\$2,926,729</b>
<b>TOTAL Assets</b>		<b>\$3,965,792</b>		<b>\$10,981,263</b>		<b>\$193,096</b>		<b>\$6,570,310</b>	<b>\$4,410,953</b>

Source: Midway Heights CWD and HEC, June 2019.

book

**Table A-4**  
**Midway Heights CWD 2019 Fee Study**  
**Projected Revenue Requirement : Potable (Treated) Water System**

Revenue Requirement Elements	Rate Change Date --->	Fiscal Year Ending				
		2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
		9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Operating Expenses</b>						
Water Purchases	2.5%	\$123,469	\$126,556	\$129,720	\$132,963	\$136,287
Salaries and Benefits	3.5%	\$200,415	\$207,430	\$214,690	\$222,204	\$229,981
Professional Services	2.5%	\$17,421	\$17,857	\$18,303	\$18,761	\$19,230
Contract Field Work	2.5%	\$1,370	\$1,404	\$1,439	\$1,475	\$1,512
Ops. & Maint. Materials - Treated System	2.0%	\$8,150	\$8,313	\$8,479	\$8,649	\$8,822
DHS Water System Fee	2.0%	\$2,622	\$2,674	\$2,728	\$2,782	\$2,838
All Other Operating Expenses	3.0%	\$44,421	\$45,754	\$47,126	\$48,540	\$49,996
New Employee (61%)	3.5%	\$45,759	\$47,360	\$49,018	\$50,733	\$52,509
<b>Subtotal Operating Expenses</b>		<b>\$443,627</b>	<b>\$457,347</b>	<b>\$471,503</b>	<b>\$486,107</b>	<b>\$501,174</b>
<b>Capital</b>						
	<i>% Depreciation</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
Collection for System Rehabilitation		\$0	\$0	\$12,000	\$16,000	\$18,000
Additional Collection for CIP		\$0	\$0	\$0	\$0	\$0
Treated Capital Facilities Fund costs	3.0%	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
<b>Subtotal Capital Expenses</b>		<b>\$5,000</b>	<b>\$5,150</b>	<b>\$17,305</b>	<b>\$21,464</b>	<b>\$23,628</b>
<b>Debt Service and Loans</b>						
SRF Loan		\$54,786	\$54,786	\$54,786	\$54,786	\$54,786
Trucks Loan		\$15,507	\$15,507	\$15,507	\$15,507	\$15,507
<b>Subtotal Debt Service [1]</b>		<b>\$70,293</b>	<b>\$70,293</b>	<b>\$70,293</b>	<b>\$70,293</b>	<b>\$70,293</b>
<b>Total Costs</b>		<b>\$518,920</b>	<b>\$532,790</b>	<b>\$559,100</b>	<b>\$577,863</b>	<b>\$595,095</b>
<b>Credits</b>						
Reconnection Fees	constant	\$125	\$125	\$125	\$125	\$125
Installations	constant	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Late Charges / Fees	constant	\$5,094	\$5,094	\$5,094	\$5,094	\$5,094
CHE Pumping Charges	Table A-8	\$261	\$274	\$288	\$302	\$317
Connection Fees	constant	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Property Taxes	4.0%	\$26,656	\$27,722	\$28,831	\$29,984	\$31,184
Interest	constant	\$2,408	\$2,408	\$2,408	\$2,408	\$2,408
Miscellaneous	constant	\$56	\$56	\$56	\$56	\$56
<b>Subtotal Credits</b>		<b>\$44,600</b>	<b>\$45,679</b>	<b>\$46,802</b>	<b>\$47,969</b>	<b>\$49,184</b>
<b>Revenue Requirement</b>		<b>\$474,320</b>	<b>\$487,111</b>	<b>\$512,298</b>	<b>\$529,894</b>	<b>\$545,911</b>
Current Water Sales		\$385,653	\$385,653	\$385,653	\$385,653	\$385,653
<b>Additional Water Sales Needed</b>		<b>\$88,667</b>	<b>\$101,458</b>	<b>\$126,645</b>	<b>\$144,241</b>	<b>\$160,258</b>
<b>Annual Change in Water Sales Needed</b>		<b>\$88,667</b>	<b>\$12,791</b>	<b>\$25,187</b>	<b>\$17,596</b>	<b>\$16,017</b>
Percent Increase in Rate Revenue		23.0%	2.7%	5.2%	3.4%	3.0%

Source: HEC 2019 Rate Study.

treated req

[1] The District's DWR Loan is repaid with property owner assessments and therefore not shown.

**Table A-5**  
**Midway Heights CWD 2019 Fee Study**  
**Projected Revenue Requirement : Irrigation (Untreated) Water System**

Revenue Requirement Elements		Fiscal Year Ending				
		2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
		9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
<b>Operating Expenses</b>						
Water Purchases	2.5%	\$29,123	\$29,851	\$30,597	\$31,362	\$32,146
Salaries and Benefits	3.5%	\$128,073	\$132,556	\$137,195	\$141,997	\$146,967
Professional Services	2.5%	\$10,889	\$11,161	\$11,440	\$11,726	\$12,019
Contract Field Work	2.5%	\$5,870	\$6,017	\$6,167	\$6,321	\$6,479
Ops. & Maint. Materials - Treated System	2.0%	\$13,250	\$13,515	\$13,785	\$14,061	\$14,342
All Other Operating Expenses	3.0%	\$37,087	\$38,200	\$39,346	\$40,526	\$41,742
New Employee (39%)	3.5%	\$29,241	\$47,360	\$49,018	\$50,733	\$52,509
<b>Subtotal Operating Expenses</b>		<b>\$253,533</b>	<b>\$278,659</b>	<b>\$287,548</b>	<b>\$296,727</b>	<b>\$306,205</b>
<b>Capital</b>						
	<i>% Depreciation</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>
Collection for System Rehabilitation		\$61,000	\$61,000	\$61,000	\$61,000	\$61,000
Additional Collection for CIP		\$0	\$20,000	\$30,000	\$40,000	\$50,000
Irrigation Rate Shift Fund	non-recurring	\$1,961	\$0	\$0	\$0	\$0
<b>Subtotal Capital Expenses</b>		<b>\$62,961</b>	<b>\$81,000</b>	<b>\$91,000</b>	<b>\$101,000</b>	<b>\$111,000</b>
Trucks Loan		\$12,184	\$12,184	\$12,184	\$12,184	\$12,184
<b>Total Costs</b>		<b>\$328,678</b>	<b>\$371,843</b>	<b>\$390,732</b>	<b>\$409,911</b>	<b>\$429,389</b>
<b>Credits</b>						
Reconnection Fees	constant	\$600	\$600	\$600	\$600	\$600
Installations	constant	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Late Charges / Fees	constant	\$2,457	\$2,457	\$2,457	\$2,457	\$2,457
CHE Pumping Charges	Table A-8	\$2,225	\$2,336	\$2,453	\$2,576	\$2,704
Connection Fees	constant	\$0	\$0	\$0	\$0	\$0
Property Taxes	4.0%	\$20,944	\$21,782	\$22,653	\$23,559	\$24,502
Interest	constant	\$1,892	\$1,892	\$1,892	\$1,892	\$1,892
Miscellaneous	constant	\$44	\$44	\$44	\$44	\$44
<b>Subtotal Credits</b>		<b>\$31,162</b>	<b>\$32,111</b>	<b>\$33,099</b>	<b>\$34,128</b>	<b>\$35,199</b>
<b>Revenue Requirement</b>		<b>\$297,517</b>	<b>\$359,732</b>	<b>\$387,633</b>	<b>\$415,783</b>	<b>\$444,190</b>
Current Water Sales		\$203,751	\$203,751	\$203,751	\$203,751	\$203,751
<b>Additional Water Sales Needed</b>		<b>\$93,766</b>	<b>\$155,981</b>	<b>\$183,882</b>	<b>\$212,032</b>	<b>\$240,439</b>
<b>Annual Change in Water Sales Needed</b>		<b>\$93,766</b>	<b>\$62,216</b>	<b>\$27,901</b>	<b>\$28,150</b>	<b>\$28,407</b>
Percent Increase in Rate Revenue		46.0%	20.9%	7.8%	7.3%	6.8%

Source: HEC 2019 Rate Study.

irr req

**Table A-6**  
**Midway Heights CWD 2019 Fee Study**  
**Irrigation Customers Capacity and Water Use Estimate**

Customer Group	No. Customers	Capacity			% of Capacity	Est. Water Use	% of Flow
		GPD	Galls / Yr	Total Galls			
		<i>in Thousands</i>			<i>Thousands of Galls</i>		
<b>Irrigation Water Metered</b>							
Service Charge 1", 11.22 gpm rate, Bi-Monthly	97	16,128	5,887	571,012		<i>actual</i>	
Service Charge 2", 16.83 gpm rate, Bi-Monthly	76	24,192	8,830	671,086		<i>flow in 2017</i>	
Service Charge 3", 22.44 gpm rate, Bi-Monthly	2	32,256	11,773	23,547			
<b>Total Metered Irrigation Customers</b>	<b>175</b>			<b>1,265,645</b>	<b>54%</b>	<b>132,548</b>	<b>45%</b>
<b>Irrigation Water Flat Rate</b>							
						<i>estimated</i>	
<b>Miner Inch, year-round, Bi-Monthly</b>						10%	[1]
One Inch	164	16,128	5,887	965,422		1.43	[2]
Two Inches	5	32,256	11,773	58,867			
Three Inches	1	48,384	17,660	17,660			
<b>Subtotal Flat Rate Irrigation Customers (no additional seasonal purchase)</b>	<b>170</b>			<b>1,041,949</b>		<b>155,887</b>	
<b>Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly</b>							
One Additional Inch	2	24,192	8,830	17,660		10%	[1]
Two Additional Inches	2	32,256	11,773	23,547		1.43	[2]
<b>Subtotal Flat Rate Irrigation Customers (with additional seasonal purchase)</b>	<b>4</b>			<b>41,207</b>		<b>6,165</b>	
<b>Total Flat Rate Irrigation Customers</b>	<b>174</b>		<b>55,924</b>	<b>1,083,156</b>	<b>46%</b>	<b>162,052</b>	<b>55%</b>
<b>TOTAL IRRIGATION CUSTOMERS</b>	<b>349</b>		<b>82,414</b>	<b>2,348,801</b>	<b>100%</b>	<b>294,600</b>	<b>100%</b>

Source: Midway Heights CWD billing records and HEC.

capacity

[1] Based on actual flow records for 2017, metered irrigation customers used 10% of the total maximum flow at 365 days of use.

[2] Flat-rate irrigation customers' water use is estimated by multiplying total maximum flow by 10% (per metered customers' actual use) then multiplying by a factor of 1.43 which accounts for metered irrigation customers using 30% less water than flat-rate irrigation customers. Non-irrigation metered customers typically use 20% less water than non-metered customers; because irrigation has a more 'elastic' demand than irrigation water, it is more price-sensitive; hence a factor of 30% is used in the analysis.

**Table A-7**

**Midway Heights CWD 2019 Fee Study  
Seasonal Miners Inch Ratio: Cost of Service**

<b>Customer</b>		<b>No. Customers</b>	<b>Flow Ratio</b>	<b>Total Equivalents</b>
One Additional Inch	a	2	1.5	3.0
Two Additional Inches	b	2	2.0	4.0
<b>Total Seasonal Miners Inches Equivalents</b>	<b>c = a+b</b>			<b>7.0</b>
<b>Annual Seasonal Equivalents</b>	<b>d = c*6</b>			<b>42.0</b>
Equivalents at One Miner's Inch	e	4	1.0	4.0
<b>Annual Equivalents at One Miner's Inch</b>	<b>f = e*12</b>			<b>48.0</b>
<b>Calculated Ratio Seasonal to Year-Round Inches</b>	<b>g= d/f</b>			<b>0.875</b>

Source: HEC 2019 rate study.

sea

<b>Current Ratio:</b>	<b>bi-mo</b>	<b>annual</b>	<b>monthly per mo. of service</b>
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly	\$73.44	\$440.64	\$73.44
Miner Inch, year-round, Bi-Monthly	\$119.98	\$719.88	\$59.99
<b>Calculated Current Ratio</b>	<b>0.612</b>	0.612	1.224

**Table A-8**  
**Midway Heights CWD 2019 Fee Study**  
**Coyote Hills Treated and Irrigation Customers Water Surcharge**

Item	Actual 2018	Fiscal Year Ending				
		2020	2021	2022	2023	2024
PG&E Bill [1]	\$2,120.45	\$2,485.77	\$2,610.06	\$2,740.56	\$2,877.59	\$3,021.47
Use (Units)	8,831	8,831	8,831	8,831	8,831	8,831
<b>Calculated Surcharge per Unit</b>	<b>\$0.24</b>	<b>\$0.28</b>	<b>\$0.30</b>	<b>\$0.31</b>	<b>\$0.33</b>	<b>\$0.34</b>

Source: MHCWD and HEC 2019 rate study.

che

[1] Cost increase between 2018 and 2020 based on actual financials and budgeted financials for utilities:

2018	\$3,149	Each year thereafter increased by: 5.0%
2020	\$3,691	17.2%