

Technical Memorandum

To: Midway Heights Board of Directors
Jason Tiffany, General Manager

From: Catherine Hansford

Date: November 15, 2019

Subject: Rate Study - Alternative Rates Scenario

Purpose

HEC completed a rate study for the Midway Heights County Water District (MHCWD or District) July 30, 2019. Based on the findings of that rate study, the District mailed public hearing notices to its customers informing them of a public hearing to be held September 19th, 2019 to consider the noticed rate schedule.

HEC presented the rate study and proposed new rate schedule the evening of the public hearing. The District Board of Directors heard from customers during the public hearing that the proposed rates needed to be considered further and duly delayed any action on changing the water rate schedule.

The District asked HEC to run an alternative rates scenario that would implement new rates July 1, 2020 rather than late 2019, and that would reduce the revenue requirement of both water systems by not creating an additional staff position as well as by reducing the amount spent on capital improvement projects over the next four years, but that would ensure revenue sufficiency of the District and satisfy State loan requirements. This memorandum presents the methodology and findings of the alternative rates scenario.

Summary of Alternative Rates Scenario Changes

The following five modifications were made to the rate study for the alternative rates scenario:

- 1. Rates Effective Change.** Rate changes were delayed to July 1, 2020.
- 2. No New Employee.** The rate study included the addition of an employee at an annual cost of \$75,000 in 2019 dollars (including all benefits). The new employee would have provided multiple advantages to the District such as tackling easement maintenance, carrying out some of the work included in the CIP at lower cost than contracted labor, and potential succession for existing District staff.

- 3. CIP Reduction.** The capital improvement projects (CIP) spending was reduced from \$800,000 to \$351,380. Of this total, it is estimated that \$61,380 would be funded by treated water customers, \$90,000 by irrigation customers, and \$200,000 by District reserves.

All of this revenue, including that from treated water customers, can be spent on irrigation projects, which have the highest priority for completion. Treated water rates can be spent on the raw water capacity and security improvements at the raw water reservoir because of the increased fire protection this project will provide to all properties within the District's boundaries. This same logic was used for CIP cost allocation between customer groups in the rate study; there is no change in the cost allocation methodology between the treated and untreated water customers in the alternative rates scenario.

- 4. Debt Service Correction.** Annual debt service for the SRF loan was corrected to \$60,265 per year. Although the amortized annual debt service is \$54,786 per year, an additional 10% must be collected to build up one year of annual debt service in a Reserve Fund, pursuant to the District's financing agreement with the State.
- 5. Irrigation Customers Cost of Service.** Updated irrigation water use data was incorporated into the financial model. The District was able to provide meter reads for all irrigation water customers for fiscal year 2018/19, even though only the metered irrigation customers are charged according to their meter reads because the District metered all untreated water customers with radio read meters with a grant from Placer County.

In the rate study the flat-rate irrigation customers' water use was estimated using the total irrigation water use record for 2017. The estimated water use figures for the flat-rate customers in the rate study were replaced with actual water use in the alternative rates scenario. This change improves the accuracy of the financial model cost of service analysis. As a result of this change, the cost allocation of the irrigation water system shifted from 49% metered irrigation customers / 51% flat-rate irrigation customers to 40% metered irrigation customers / 60% flat-rate irrigation customers.

Alternative Rates Scenario Results

The alternative rates scenario rate schedule is provided in **Table 1** on the following page. The original rate study rate schedule is provided in **Table 2** on page 4 for comparison.

As a result of the changes described above, rates remain unchanged through the end of fiscal year 2020, and are lower in each of the subsequent four years under the alternative rates scenario. If the Board of Directors chose to adopt the alternative rates scenario, it could do so without distributing another public notice to each customer because the publicly noticed rates were the maximum the District could adopt upon close of the public hearing without a majority protest of the rates.

Table 1
Alternative Scenario Rate Schedule

Customer	Current	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
<i>New Rates Effective ----></i>		<i>7/1/2020</i>	<i>7/1/2021</i>	<i>7/1/2022</i>	<i>7/1/2023</i>	
Treated Water		COST OF SERVICE FEES				
Service Charge (Bi-Monthly)	\$103.92	\$103.92				
5/8-inch			\$115.46	\$118.64	\$122.01	\$125.75
3/4-inch			\$173.19	\$177.96	\$183.02	\$188.63
1-inch			\$288.65	\$296.60	\$305.03	\$314.38
1.5-inch			\$577.30	\$593.20	\$610.05	\$628.75
2-inch			\$923.68	\$949.12	\$976.08	\$1,006.00
Use Charge (All Units)			\$3.43	\$3.53	\$3.64	\$3.76
Tier A (0-8 units)	\$2.15	\$2.15				
Tier B (>8 units)	\$4.20	\$4.20				
Irrigation Water Metered						
11.22 gpm rate, Bi-Monthly	\$43.44	\$43.44	\$55.00	\$56.35	\$57.68	\$59.21
16.83 gpm rate, Bi-Monthly	\$59.34	\$59.34	\$82.50	\$84.53	\$86.52	\$88.82
22.44 gpm rate, Bi-Monthly	\$75.22	\$75.22	\$110.00	\$112.70	\$115.36	\$118.42
28.05 gpm rate, Bi-Monthly	\$91.12	\$91.12	\$137.50	\$140.88	\$144.20	\$148.03
33.66 gpm rate, Bi-Monthly	\$107.02	\$107.02	\$165.00	\$169.05	\$173.04	\$177.63
39.27 gpm rate, Bi-Monthly	\$122.92	\$122.92	\$192.50	\$197.23	\$201.88	\$207.24
44.88 gpm rate, Bi-Monthly	\$138.82	\$138.82	\$220.00	\$225.40	\$230.72	\$236.84
50.49 gpm rate, Bi-Monthly	\$154.72	\$154.72	\$247.50	\$253.58	\$259.56	\$266.45
56.10 gpm rate, Bi-Monthly	\$170.62	\$170.62	\$275.00	\$281.75	\$288.40	\$296.05
61.71 gpm rate, Bi-Monthly	\$186.50	\$186.50	\$302.50	\$309.93	\$317.24	\$325.66
67.32 gpm rate, Bi-Monthly	\$202.40	\$202.40	\$330.00	\$338.10	\$346.08	\$355.26
72.93 gpm rate, Bi-Monthly	\$218.30	\$218.30	\$357.50	\$366.28	\$374.92	\$384.87
78.54 gpm rate, Bi-Monthly	\$234.20	\$234.20	\$385.00	\$394.45	\$403.76	\$414.47
Irrigation usage, per unit	\$0.23	\$0.23	\$0.31	\$0.32	\$0.33	\$0.34
Irrigation Water Flat Rate (Bi-Monthly)						
Miner Inch, year-round	\$119.98	\$119.98	\$129.88	\$134.30	\$138.72	\$143.69
Seasonal Miners Inch (May 1-Oct 1)	\$73.44	\$73.44	\$113.65	\$117.52	\$121.38	\$125.73
Coyote Hills Estates						
Pumped Water Surcharge, per unit [1]	\$0.23	\$0.23	\$0.30	\$0.31	\$0.33	\$0.34

Source: HEC 2019 rate study.

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

Table 2
Original Rate Schedule Publicly Noticed

Customer	Current	2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
		<i>New Rates Effective ----></i>				
		9/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
Treated Water		COST OF SERVICE FEES				
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					
Irrigation Water Metered						
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
Irrigation Water Flat Rate (Bi-Monthly)						
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
Coyote Hills Estates						
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.

Bill Impacts

The impacts of the alternative rates scenario schedule to customer bills are shown in the next three figures. The blue columns show the alternative rates. The gray columns show the publicly noticed rates.

Figure 1
Single Family Treated Water Customer Bill @ 12 HCF

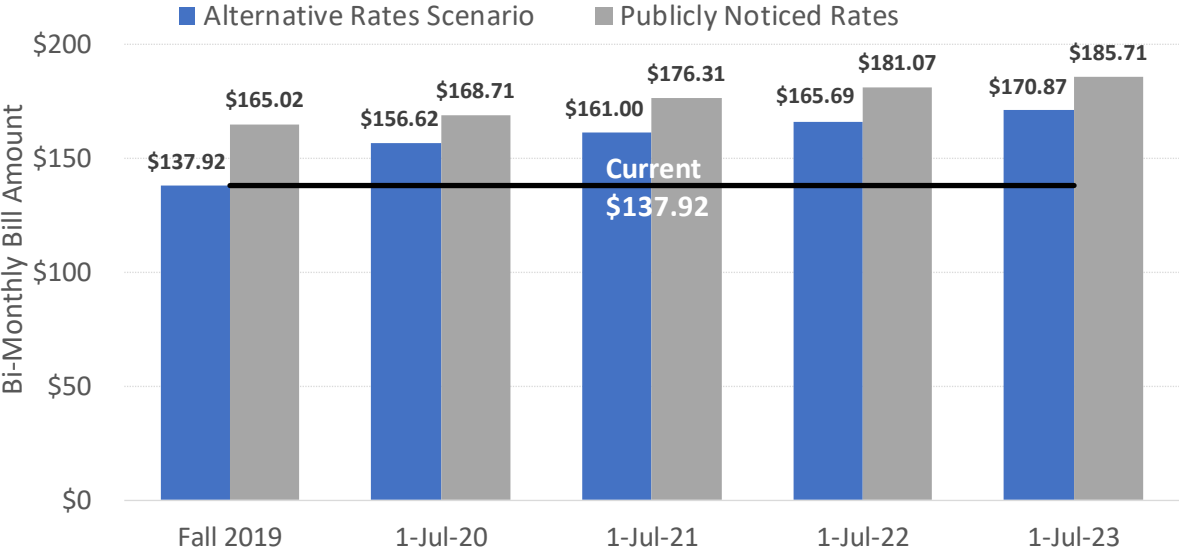


Figure 2
Flat-Rate Miner’s Inch Bi-Monthly Bill

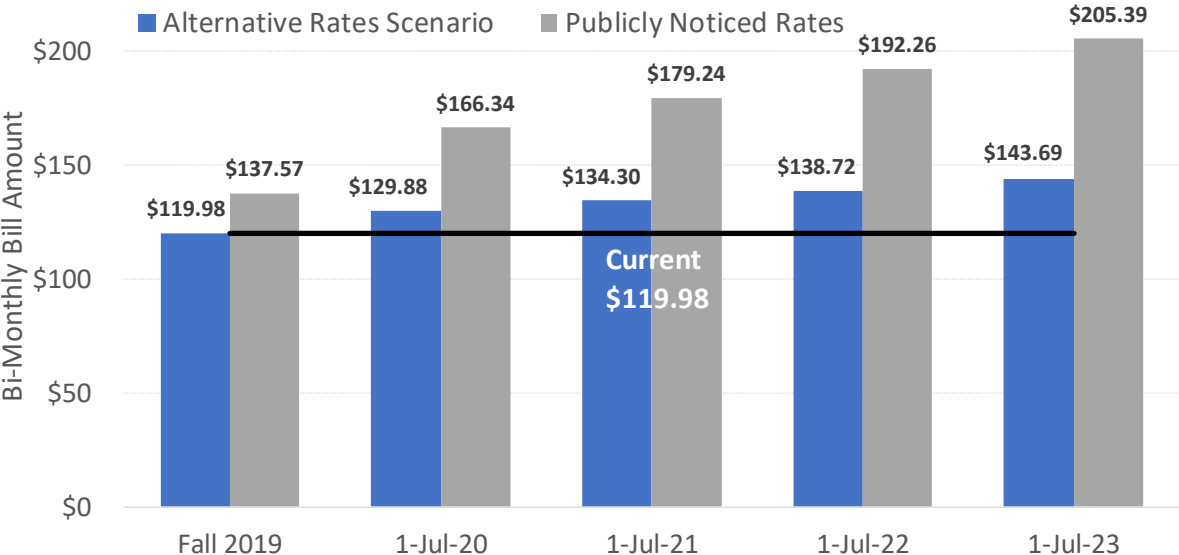
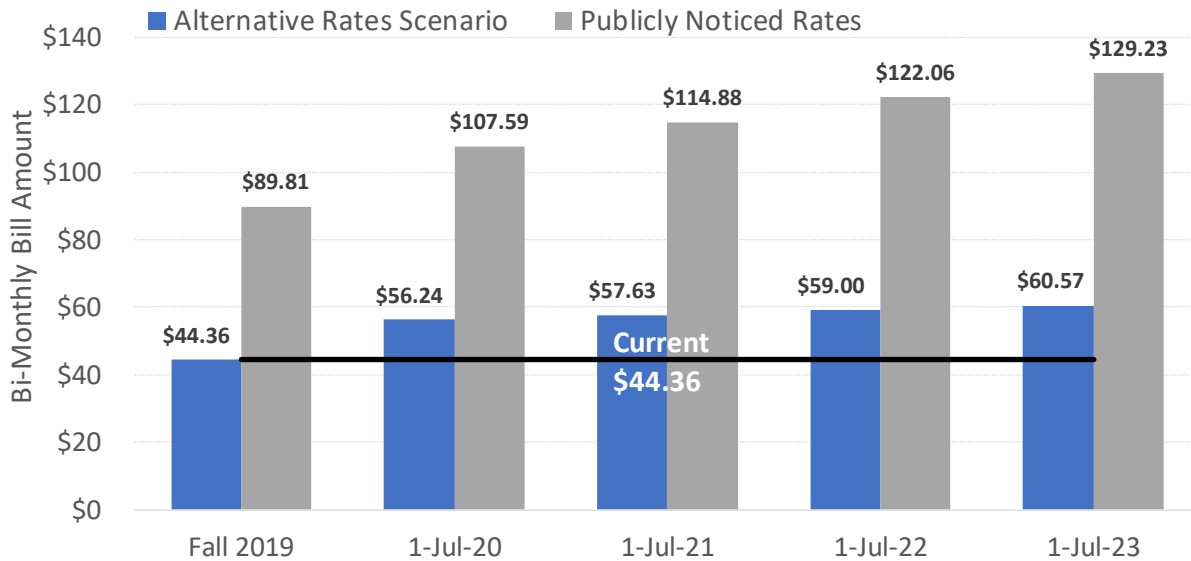


Figure 3
Metered Irrigation Water Customer Bill @ 4 HCF



Discussion

The discussion addresses each of the five changes to the rate study. A full set of support tables for the alternative rates scenario is provided in **Attachment A** to this memorandum.

1. Rates Effective Change

The District asked that the rates not be changed until July 1, 2020 rather than the fall of 2019. This change has two main impacts. First, the District will fall below a 1.2 debt service coverage ratio for the SRF loan for fiscal year 2020. Second, the alternative scenario rate increase needs to be higher in July 1, 2020 than it would have been if six months of fiscal year 2020 had experienced higher revenues due to a rate change in fall 2019. Nevertheless, the alternative scenario rates for July 1, 2020 are lower than the publicly noticed rates.

2. No New Employee

The new employee's estimated annual cost of \$75,000 was split between the treated and untreated water customers in the rate study. Sixty-one percent of costs were allocated to the treated system and 39% to the untreated system based on current staff cost allocations (which is based on time spent on each water system). Without a new employee, the treated water system revenue requirement is reduced by \$45,760 annually, and the untreated water system revenue requirement is reduced by \$29,240 annually in 2019 dollars.

3. CIP Reduction

The CIP expenditures were reduced from \$800,000 to \$351,380 over the next four years. Rather than fully fund projects B (Increase Raw Water Storage Capacity and Security Improvements at Raw Water Reservoir) and F (Hillsdale Irrigation Main Replacement) in the rate study, the alternative rates scenario funds project B and a portion (\$241,380 of \$690,000) of project F. District reserves would fund \$200,000 of the expenses (57% of the total costs) with no impact on rates. Treated water customers would fund \$61,380 of the expenses (17% of total costs), and irrigation customers would fund \$90,000 of the expenses. **Table 3** below summarizes the estimated CIP funding sources and uses.

Table 3
Sources and Uses of Funding for Capital Improvement Projects

Capital Improvement Projects	Treated Rates	Treated Conn. Fees	Irrig. Rates	Irrig. Conn. Fees	Reserves	Total
A Treated Master Meter Installation & PRV Replacement	\$150,000	\$0	\$0	\$0	\$0	\$150,000
B Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$45,800	\$15,580	\$36,490	\$12,130	\$0	\$110,000
C Proposed 2.5 Mile Fire Break with Fire Hydrants from West Weimar Cross Rd to Crother Rd	\$58,290	\$19,830	\$46,440	\$15,440	\$0	\$140,000
D Blackberry Irrigation & Fire Loop	\$0	\$0	\$371,250	\$123,750	\$0	\$495,000
E 6" Irrigation PRV	\$0	\$0	\$90,000	\$0	\$0	\$90,000
F Hillsdale Irrigation Main Replacement	\$0	\$0	\$690,000	\$0	\$0	\$690,000
Total Allocated Cost Share	\$254,090	\$35,410	\$1,234,180	\$151,320	\$0	\$1,675,000
Sources of Funding	\$45,800	\$25,000	\$90,400	\$0	\$200,000	\$361,200
Uses of Funding						
B Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$45,800	\$15,580	\$0	\$0	\$48,620	\$110,000
F Hillsdale Irrigation Main Replacement (portion)	\$0	\$0	\$90,000	\$0	\$151,380	\$241,380
Total Funded Costs	\$45,800	\$15,580	\$90,000	\$0	\$200,000	\$351,380

Source: PCWA County Wide Master Plan and HEC.

capshare

4. Debt Service Correction

The correction to the SRF loan annual debt service increases the treated water customers' revenue requirement by \$5,479 per year.

As a result of changes 1 through 4 described, the amount to be collected through rates changes. **Table 4** shows the revised projected revenue requirement for both water systems combined. Due to the delay in adopting increased rates, the estimated rate collections line is the amount included in the rates calculations (rather than the revenue requirement line).

Table 4
Projected Revenue Requirement: Combined Systems

Revenue Requirement Elements	Fiscal Year Ending				
	2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
	Rate Change Date --->	7/1/2020	7/1/2021	7/1/2022	7/1/2023
Operating Expenses	\$622,160	\$641,286	\$661,016	\$681,367	\$702,361
Capital Expenses	\$6,961	\$33,750	\$38,705	\$41,564	\$43,728
SRF Debt Service [1]	\$60,265	\$60,265	\$60,265	\$60,265	\$60,265
Truck Loan	\$27,691	\$27,691	\$27,691	\$27,691	\$27,691
Total Costs	\$717,077	\$762,992	\$787,676	\$810,886	\$834,044
Total Credits	\$75,762	\$77,790	\$79,901	\$82,097	\$84,383
Revenue Requirement	\$641,315	\$685,202	\$707,775	\$728,789	\$749,662
Current Water Sales	\$589,404	\$589,404	\$589,404	\$589,404	\$589,404
Additional Water Sales Needed	\$51,911	\$95,798	\$118,371	\$139,385	\$160,258
Estimated Rate Collections	\$589,404	\$687,000	\$711,000	\$736,000	\$762,000
Annual Change in Rate Collections		\$97,596	\$24,000	\$25,000	\$26,000
Percent Increase in Rate Revenue		17%	3%	4%	4%
Annual Change in Water Sales Needed		\$95,798	\$22,573	\$21,014	\$20,872
Percent Increase in Rate Revenue		15%	3%	3%	3%

Source: HEC 2019 Rate Study.

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

Figures 4 and 5 on the following page illustrate the difference between the amount to be collected in rates under the publicly noticed rates schedule and the alternative rates scenario

schedule. The difference is most dramatic for the untreated water system because of the reduction in CIP spending for the Hillsdale irrigation main replacement.

Figure 4
Treated Water Revenue Requirement

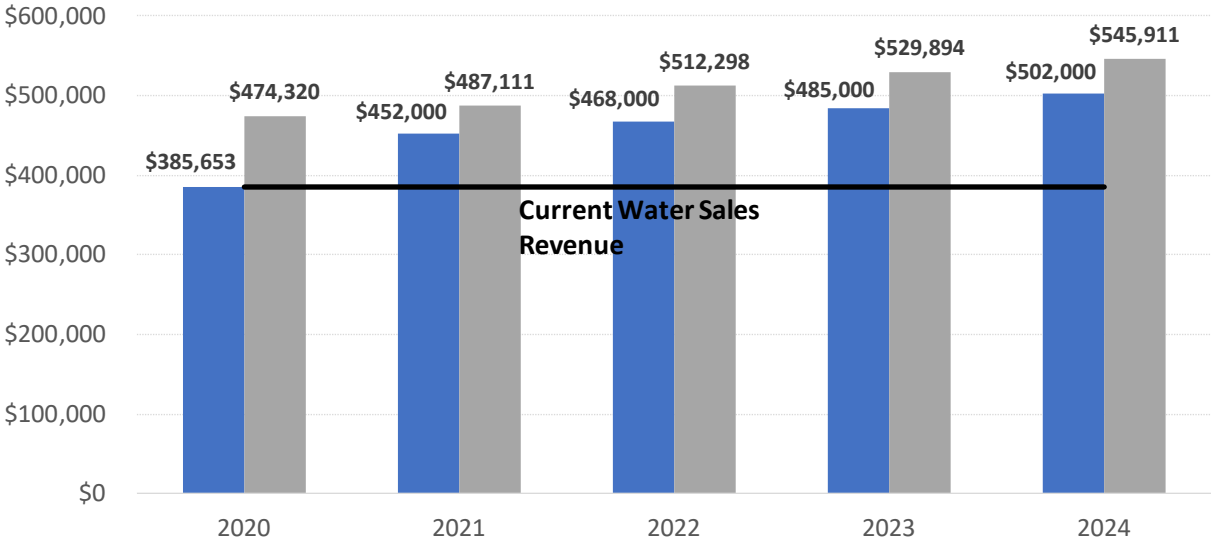
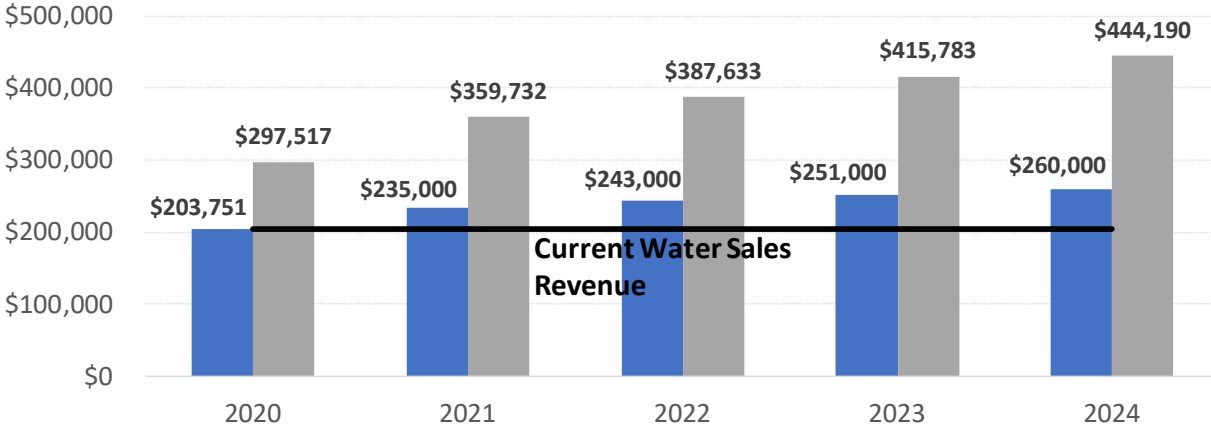


Figure 5
Untreated Water Revenue Requirement



5. Irrigation Customers Cost of Service

The estimated water use figures for the flat-rate customers in the rate study using 2017 flow data was replaced with actual water use from fiscal year 2018/19 in the alternative rates scenario. This change improves the accuracy of the financial model cost of service analysis. As a result of this change, the cost allocation of the irrigation water system shifted from 49% metered irrigation customers / 51% flat-rate irrigation customers to 40% metered irrigation customers / 60% flat-rate irrigation customers.

Table 5 below shows what the rates should be for fiscal year 2019/20 compared to the actual rates charged. The cost of service results are the same as in the rate study; more of the treated water costs should be recovered through use charges, and untreated metered water customers should be paying more than they currently do. Flat-rate untreated water customers should be paying less than they currently do but seasonal miners inch customers should be paying more than they currently do.

Table 5
Comparison of Current and Cost of Service Fees

Fee Schedule	Current	Cost of Service
Treated Water Metered		
		<i>2019/20 Budget</i>
Service Charge, Bi-Monthly	\$103.92	\$98.95
Tier A (0-8 units)	\$2.15	-
Tier B (>8 units)	\$4.20	-
All Units		\$2.94
Irrigation Water Metered		
Service Charge 1", 11.22 gpm rate, Bi-Monthly	\$43.44	\$48.13
Service Charge 2", 16.83 gpm rate, Bi-Monthly	\$59.34	\$72.20
Service Charge 3", 22.44 gpm rate, Bi-Monthly	\$75.22	\$96.26
Irrigation usage, per hundred cubic feet	\$0.23	\$0.27
Irrigation Water Flat Rate		
Miner Inch, year-round, Bi-Monthly	\$119.98	\$112.61
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly	\$73.44	\$98.54

Source: MHCWD and HEC.

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If the alternative rates scenario rate schedule is adopted it is projected that the District would be able to maintain at least six months of operating costs each year in reserves. The debt service coverage ratio of at least 1.20 (required by the State for the SRF loan) would be achieved during fiscal year 2021, and the District would resume positive net annual operating revenues. **Table 6** on the next page shows the projected cash flow under the alternative rates scenario.

Figure 6 below shows that with the addition of capital expenditures, expenses may be greater than revenues in some years. The unrestricted cash balance is projected to decrease from approximately \$514,000 at the end of fiscal year 2020 to approximately \$379,000 at the end of fiscal year 2024.

Figure 6
Projected Five-Year Cash Balance

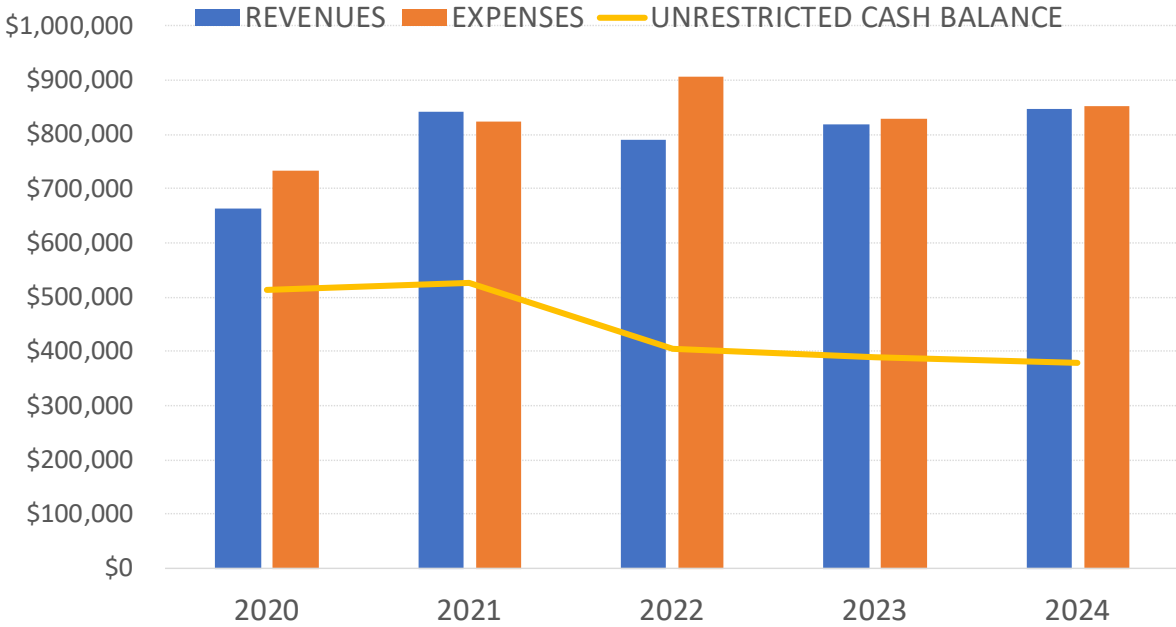


Table 6
Projected District Cash Flow

Revenues and Expenses	Fiscal Year Ending				
	2020	2021	2022	2023	2024
	Year 1	Year 2	Year 3	Year 4	Year 5
	7/1/2020	7/1/2021	7/1/2022	7/1/2023	7/1/2023
REVENUES					
Treated Water Sales	\$385,653	\$452,354	\$468,149	\$485,044	\$502,427
Irrigation Water Sales	\$203,751	\$235,117	\$243,284	\$251,465	\$260,564
All Other Revenues	\$73,276	\$77,790	\$79,901	\$82,097	\$84,383
Total Revenues	\$662,680	\$765,261	\$791,334	\$818,606	\$847,373
EXPENSES					
Operating - Treated Water	\$397,868	\$409,987	\$422,485	\$435,374	\$448,665
Operating - Irrigation Water	\$224,292	\$231,299	\$238,531	\$245,994	\$253,696
Truck Loan	\$27,691	\$27,691	\$27,691	\$27,691	\$27,691
Total Expenses	\$649,851	\$668,977	\$688,707	\$709,058	\$730,052
Net Revenue	\$12,829	\$96,283	\$102,627	\$109,548	\$117,321
Debt Service	\$60,265	\$60,265	\$60,265	\$60,265	\$60,265
Debt Service Coverage Ratio [1]	0.21	1.60	1.70	1.82	1.95
Net Revenues	(\$47,436)	\$36,019	\$42,363	\$49,283	\$57,056
Beginning Cash Balance [2a]	\$612,201	\$541,804	\$558,058	\$443,736	\$432,556
Add Net Revenues	(\$47,436)	\$36,019	\$42,363	\$49,283	\$57,056
Capital Improvement Projects [3]	(\$16,000)	(\$90,000)	(\$151,380)	(\$55,000)	(\$55,000)
Other Capital Expenses	(\$6,961)	(\$5,150)	(\$5,305)	(\$5,464)	(\$5,628)
Assessment District Disbursement	\$0	\$75,385	\$0	\$0	\$0
Ending Cash Balance	\$541,804	\$558,058	\$443,736	\$432,556	\$428,985
Restricted Cash Balance [2b]	\$27,393	\$32,872	\$38,350	\$43,829	\$49,307
Unrestricted Cash Balance	\$514,411	\$525,186	\$405,386	\$388,727	\$379,677
Target Cash Balance [4]	\$324,926	\$334,489	\$344,353	\$354,529	\$365,026
Months of Op. Expenses in Unrestricted Cash	9.5	9.4	7.1	6.6	6.2

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] Accumulation toward one year of SRF debt service per the SRF financing agreement.

[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.

For most treated water customers, the bi-monthly water cost would increase between \$15.00 and \$22.00, depending on actual quantity of water used, under the alternative rates scenario rate schedule. **Table 7** below shows the impact of the treated water rate changes in July 1, 2020 at different levels of bi-monthly treated water use. Seventy-three percent of bi-monthly bills are between 4 HCF and 16 HCF every two months.

Table 7
Treated Water Customers Bill Impact

Use (HCF)	No. of Bills	% of Bills	Current			Jul-20			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	\$115.46	\$0.00	\$115.46	\$11.54
4	280	11%	\$103.92	\$8.60	\$112.52	\$115.46	\$13.72	\$129.18	\$16.66
8	568	22%	\$103.92	\$17.20	\$121.12	\$115.46	\$27.44	\$142.90	\$21.78
12	637	25%	\$103.92	\$34.00	\$137.92	\$115.46	\$41.16	\$156.62	\$18.70
16	380	15%	\$103.92	\$50.80	\$154.72	\$115.46	\$54.88	\$170.34	\$15.62
20	209	8%	\$103.92	\$67.60	\$171.52	\$115.46	\$68.60	\$184.06	\$12.54
24	133	5%	\$103.92	\$84.40	\$188.32	\$115.46	\$82.32	\$197.78	\$9.46
28	75	3%	\$103.92	\$101.20	\$205.12	\$115.46	\$96.04	\$211.50	\$6.38
32	55	2%	\$103.92	\$118.00	\$221.92	\$115.46	\$109.76	\$225.22	\$3.30
36	30	1%	\$103.92	\$134.80	\$238.72	\$115.46	\$123.48	\$238.94	\$0.22
40	34	1%	\$103.92	\$151.60	\$255.52	\$115.46	\$137.20	\$252.66	(\$2.86)
80	114	4%	\$103.92	\$319.60	\$423.52	\$115.46	\$274.40	\$389.86	(\$33.66)
120	19	1%	\$103.92	\$487.60	\$591.52	\$115.46	\$411.60	\$527.06	(\$64.46)
160	6	0%	\$103.92	\$655.60	\$759.52	\$115.46	\$548.80	\$664.26	(\$95.26)
240	4	0%	\$103.92	\$991.60	\$1,095.52	\$115.46	\$823.20	\$938.66	(\$156.86)
320	4	0%	\$103.92	\$1,327.60	\$1,431.52	\$115.46	\$1,097.60	\$1,213.06	(\$218.46)
400	1	0%	\$103.92	\$1,663.60	\$1,767.52	\$115.46	\$1,372.00	\$1,487.46	(\$280.06)
> 400	1	0%							

Source: HEC.

tr bill

About one-third of bi-monthly metered irrigation bills would increase between \$11.56 and \$11.88 under the alternative rates scenario rate schedule in July 2020. Another 25% of metered irrigation bi-monthly bills would increase between approximately \$15.00 and \$24.50. **Table 8** on the next page shows the impact of the untreated water rate changes in July 1, 2020 at different levels of bi-monthly untreated water use for metered irrigation customers with one miner's inch service.

Table 8
Metered Irrigation Water Customers Bill Impact

Use (HCF)	No. of Bills	% of Bills	Current			Jul-20			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	\$55.00	\$0.00	\$55.00	\$11.56
4	221	21%	\$43.44	\$0.92	\$44.36	\$55.00	\$1.24	\$56.24	\$11.88
8	64	6%	\$43.44	\$1.84	\$45.28	\$55.00	\$2.48	\$57.48	\$12.20
12	49	5%	\$43.44	\$2.76	\$46.20	\$55.00	\$3.72	\$58.72	\$12.52
16	43	4%	\$43.44	\$3.68	\$47.12	\$55.00	\$4.96	\$59.96	\$12.84
20	36	3%	\$43.44	\$4.60	\$48.04	\$55.00	\$6.20	\$61.20	\$13.16
24	21	2%	\$43.44	\$5.52	\$48.96	\$55.00	\$7.44	\$62.44	\$13.48
28	28	3%	\$43.44	\$6.44	\$49.88	\$55.00	\$8.68	\$63.68	\$13.80
32	23	2%	\$43.44	\$7.36	\$50.80	\$55.00	\$9.92	\$64.92	\$14.12
36	25	2%	\$43.44	\$8.28	\$51.72	\$55.00	\$11.16	\$66.16	\$14.44
40	11	1%	\$43.44	\$9.20	\$52.64	\$55.00	\$12.40	\$67.40	\$14.76
80	142	13%	\$43.44	\$18.40	\$61.84	\$55.00	\$24.80	\$79.80	\$17.96
120	84	8%	\$43.44	\$27.60	\$71.04	\$55.00	\$37.20	\$92.20	\$21.16
160	47	4%	\$43.44	\$36.80	\$80.24	\$55.00	\$49.60	\$104.60	\$24.36
240	52	5%	\$43.44	\$55.20	\$98.64	\$55.00	\$74.40	\$129.40	\$30.76
320	25	2%	\$43.44	\$73.60	\$117.04	\$55.00	\$99.20	\$154.20	\$37.16
400	15	1%	\$43.44	\$92.00	\$135.44	\$55.00	\$124.00	\$179.00	\$43.56
600	15	1%	\$43.44	\$138.00	\$181.44	\$55.00	\$186.00	\$241.00	\$59.56
800	3	0%	\$43.44	\$184.00	\$227.44	\$55.00	\$248.00	\$303.00	\$75.56
1,000	4	0%	\$43.44	\$230.00	\$273.44	\$55.00	\$310.00	\$365.00	\$91.56
1,200	0	0%	\$43.44	\$276.00	\$319.44	\$55.00	\$372.00	\$427.00	\$107.56
1,400	1	0%	\$43.44	\$322.00	\$365.44	\$55.00	\$434.00	\$489.00	\$123.56
1,600	0	0%	\$43.44	\$368.00	\$411.44	\$55.00	\$496.00	\$551.00	\$139.56
>1,600	2	0%							

Source: HEC.

irr bill

ATTACHMENT A

BI-MONTHLY FEES SUPPORT TABLES

Table A-1
Midway Heights CWD 2019 Fee Study
Estimates of Buildout Development

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

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

build

[1] Page 3 Kennedy/Jenks Consultants.

[2] Page 14 Kennedy/Jenks Consultants.

Table A-2
Midway Heights CWD 2019 Fee Study
District Financials

Revenues and Expenses	Actual 2017	Actual 2018	Approved 2019	Approved 2020
Revenues				
Treated Water				
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
Subtotal Treated Water Revenue	\$206,631	\$383,315	\$377,548	\$389,778
Irrigation Water Revenues				
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
Subtotal Irrigation Water Revenue	\$369,244	\$203,466	\$203,148	\$208,351
Late Charges / Fees	\$7,109	\$8,434	\$8,656	\$7,551
Total Revenues	a \$582,985	\$595,215	\$589,352	\$605,680
Expenses				
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
Total Expenses	b \$561,213	\$526,734	\$573,849	\$622,161

Table A-2
Midway Heights CWD 2019 Fee Study
District Financials

Revenues and Expenses		Actual 2017	Actual 2018	Approved 2019	Approved 2020
Net Operating Revenues	c = a-b	\$21,772	\$68,481	\$15,503	(\$16,481)
Non-Operating Revenues					
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
Subtotal Non-Operating Revenues	d	\$87,041	\$55,307	\$54,377	\$57,000
Non-Operating Expenses					
Treated Capital Facilities Fund costs		\$4,300	\$4,816	\$5,000	\$5,000
Irrigation Rate Shift Fund costs		\$18,500	\$0	\$0	\$1,961
Subtotal Non-Operating Expenses	e	\$22,800	\$4,816	\$5,000	\$6,961
Capital Expenses					
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
Total Capital Expenses	f	\$203,912	\$68,585	\$76,881	\$104,275
Net Revenues	g = c+d-e-f	(\$117,899)	\$50,387	(\$12,000)	(\$70,717)
Funded by Reserves					
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
Total Funded by Reserves	h	\$130,435	\$4,068	\$12,000	\$64,718
Budget	i = g+h	\$12,535	\$54,455	(\$0)	(\$5,999)

Source: Midway Heights CWD financial documents.

budget

Table A-3
Midway Heights CWD 2019 Fee Study
Fiscal Year 2020 Budget by System

Revenues and Expenses	Treated Water		Irrigation Water	
REVENUES				
Operating Revenues				
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
Subtotal Operating Revenues	65%	\$395,872	35%	\$209,808
Non-Operating Revenues				
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
Subtotal Non-Operating Revenues	60%	\$34,120	40%	\$22,880
Total Revenues	65%	\$429,992	35%	\$232,688
EXPENSES				
Operating Expenses				
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
Subtotal Operating Expenses	64%	\$397,868	36%	\$224,292
Non-Operating Expenses				
Treated Capital Facilities Fund costs	100%	\$5,000	0%	\$0
Irrigation Rate Shift Fund	0%	\$0	100%	\$1,961
Capital Expenses				
Trucks Loan **	56%	\$15,507	44%	\$12,184
Debt Service (tank) **	100%	\$60,584	0%	\$0
Capital Improvements	63%	\$10,000	38%	\$6,000
Total Expenses	67%	\$488,959	33%	\$244,437
Net Revenues		(\$58,967)		(\$11,749)
Funded by Reserves		\$58,967		\$5,751
Budget		\$0		(\$5,998)
FIXED COSTS **				
	70%	\$340,970	77%	\$188,233
VARIABLE COSTS				
	30%	\$147,989	23%	\$56,204
TOTAL COSTS		\$488,959		\$244,437
Percentage of Total Costs		67%		33%

Source: Midway Heights CWD May 2019.

2020 fin

Table A-4
Midway Heights CWD 2019 Fee Study
Capital Improvements 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	
	2019 \$		Percentage Allocation								
A Treated Master Meter Installation & PRV Replacement	\$150,000	100%						\$50,000	\$100,000		
B Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$110,000	[1]	42%	14%	33%	11%			\$55,000	\$55,000	
C Proposed 2.5 Mile Fire Break with Fire Hydrants from West Weimar Cross Rd to Crother Rd	\$140,000	[1]	42%	14%	33%	11%			\$70,000	\$70,000	
D Blackberry Irrigation & Fire Loop	\$495,000	[1]			75%	25%			\$295,000	\$200,000	
E 6" Irrigation PRV	\$90,000				100%					\$90,000	
F Hillsdale Irrigation Main Replacement	\$690,000				100%		\$90,000	\$151,380	\$269,310	\$179,310	
TOTAL Improvements Estimated Cost (2019 \$)	\$1,675,000		\$254,087	\$35,409	\$1,234,187	\$151,317	\$0	\$90,000	\$201,380	\$789,310	\$594,310
Percentage of Costs	100%		15%	2%	74%	9%					
Funded Projects (or portion of projections)											
B Increase Raw Water Storage Capacity & Security Improvements at Raw Water Reservoir	\$110,000						\$0	\$0	\$0	\$55,000	\$55,000
F Hillsdale Irrigation Main Replacement	\$241,380						\$0	\$90,000	\$151,380	\$0	\$0
Total Funded	\$351,380	21%					\$0	\$90,000	\$151,380	\$55,000	\$55,000
Unfunded	\$1,323,620	79%					\$0	\$0	\$50,000	\$734,310	\$539,310

Source: PCWA County Wide Master Plan and HEC.

cip

[1] Percentages derived from Table A-1

Table A-5
Midway Heights CWD 2019 Fee Study
Estimated Annual Depreciation

System and Asset Group	Treated System	Irrigation System	Annual Depreciation
	<i>See Table A-6</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
Total All Assets	\$131,834	\$61,262	\$193,096

Source: Midway Height CWD and HEC, June 2019.

depr

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

Table A-6
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
Buildings (G/L17500)									
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
Total Buildings		\$61,974		\$98,209		\$2,975		\$41,644	\$56,564
Field Equipment (G/L 17300)									
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
Panasonic 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
Total Field Equipment		\$169,260		\$294,786		\$142		\$1,701	\$293,085

Table A-6
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
Office Equipment (G/L 17400)									
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
Total Office Equipment		\$17,352		\$33,391		\$0		\$0	\$33,391
Distribution Equipment - Irrigation Water (G/L 17200)									
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
Total Distribution Equipment - Irrigation		\$604,828		\$4,154,901		\$59,890		\$3,053,717	\$1,101,184
Distribution Equipment - Treated Water (G/L 17100)									
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
L VH	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
Distribution Equipment - Treated Water		\$3,112,378		\$6,399,976		\$130,089		\$3,473,247	\$2,926,729
TOTAL Assets		\$3,965,792		\$10,981,263		\$193,096		\$6,570,310	\$4,410,953

Source: Midway Heights CWD and HEC, June 2019.

book

Table A-7

Midway Heights CWD 2019 Fee Study
 Projected Revenue Requirement : Potable (Treated) Water System

Revenue Requirement Elements		Fiscal Year Ending				
		2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
	Rate Change Date ---->	7/1/2020	7/1/2021	7/1/2022	7/1/2023	
Operating Expenses						
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%	\$0	\$0	\$0	\$0	\$0
Subtotal Operating Expenses		\$397,868	\$409,987	\$422,485	\$435,374	\$448,665
Capital						
	% Depreciation	0%	0%	0%	0%	0%
Collection for System Rehabilitation		\$0	\$6,000	\$10,800	\$13,500	\$15,500
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
Subtotal Capital Expenses		\$5,000	\$11,150	\$16,105	\$18,964	\$21,128
Debt Service and Loans						
SRF Loan (1.1x the amortized payment until 2025)		\$60,265	\$60,265	\$60,265	\$60,265	\$60,265
Trucks Loan		\$15,507	\$15,507	\$15,507	\$15,507	\$15,507
Subtotal Debt Service [1]		\$75,772	\$75,772	\$75,772	\$75,772	\$75,772
Total Costs		\$478,640	\$496,909	\$514,361	\$530,109	\$545,565
Credits						
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-13	\$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
Subtotal Credits		\$44,600	\$45,679	\$46,802	\$47,969	\$49,184
Revenue Requirement		\$434,040	\$451,229	\$467,559	\$482,139	\$496,381
Current Water Sales		\$385,653	\$385,653	\$385,653	\$385,653	\$385,653
Additional Water Sales Needed		\$48,387	\$65,576	\$81,906	\$96,486	\$110,728
Estimated Rate Collections		\$385,653	\$452,000	\$468,000	\$485,000	\$502,000
Annual Change in Rate Collections			\$66,347	\$16,000	\$17,000	\$17,000
Percent Increase in Rate Revenue			17.2%	3.5%	3.6%	3.5%

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-8
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
	Rate Change Date ---->	7/1/2020	7/1/2021	7/1/2022	7/1/2023	
Operating Expenses						
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%	\$0	\$0	\$0	\$0	\$0
Subtotal Operating Expenses		\$224,292	\$231,299	\$238,531	\$245,994	\$253,696
Capital						
	% Depreciation	0%	37%	37%	37%	37%
Collection for System Rehabilitation		\$0	\$22,600	\$22,600	\$22,600	\$22,600
Additional Collection for CIP		\$0	\$0	\$0	\$0	\$0
Irrigation Rate Shift Fund	non-recurring	\$1,961	\$0	\$0	\$0	\$0
Subtotal Capital Expenses		\$1,961	\$22,600	\$22,600	\$22,600	\$22,600
Trucks Loan		\$12,184	\$12,184	\$12,184	\$12,184	\$12,184
Total Costs		\$238,437	\$266,083	\$273,315	\$280,778	\$288,480
Credits						
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-13	\$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
Subtotal Credits		\$31,162	\$32,111	\$33,099	\$34,128	\$35,199
Revenue Requirement		\$207,275	\$233,972	\$240,216	\$246,650	\$253,281
Current Water Sales		\$203,751	\$203,751	\$203,751	\$203,751	\$203,751
Additional Water Sales Needed		\$3,524	\$30,221	\$36,465	\$42,899	\$49,530
Estimated Rate Collections		\$203,751	\$235,000	\$243,000	\$251,000	\$260,000
Annual Change in Rate Collections			\$31,249	\$8,000	\$8,000	\$9,000
Percent Increase in Rate Revenue			15.1%	3.4%	3.3%	3.6%

Source: HEC 2019 Rate Study.

irr req

Table A-9
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 Gallons</i>		
Irrigation Water Metered							
Service Charge 1", 11.22 gpm rate, Bi-Monthly	97	16,128	5,887	571,012		<i>actual flow</i>	
Service Charge 2", 16.83 gpm rate, Bi-Monthly	76	24,192	8,830	671,086		<i>FY 2018/19</i>	
Service Charge 3", 22.44 gpm rate, Bi-Monthly	2	32,256	11,773	23,547			
Total Metered Irrigation Customers	175			1,265,645	54%	134,251	25%
Irrigation Water Flat Rate							
Miner Inch, year-round, Bi-Monthly							
One Inch	164	16,128	5,887	965,422			
Two Inches	5	32,256	11,773	58,867			
Three Inches	1	48,384	17,660	17,660			
Subtotal Flat Rate Irrigation Customers (no additional seasonal purchase)	170			1,041,949			
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly							
One Additional Inch	2	24,192	8,830	17,660			
Two Additional Inches	2	32,256	11,773	23,547			
Subtotal Flat Rate Irrigation Customers (with additional seasonal purchase)	4			41,207			
Total Flat Rate Irrigation Customers	174		55,924	1,083,156	46%	397,409	75%
TOTAL IRRIGATION CUSTOMERS	349		82,414	2,348,801	100%	531,660	100%

Source: Midway Heights CWD billing records and HEC.

capacity

Table A-10

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

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

Source: HEC 2019 rate study.

sea

Current Ratio:	bi-mo	annual	monthly per mo. of service
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
Calculated Current Ratio	0.612	0.612	1.224

Table A-11
Midway Heights CWD 2019 Fee Study
Treated Water Customers Calculated Fees

Cost Classification	Cost Share	Fiscal Year Ending				
		2020 Year 1	2021 Year 2	2022 Year 3	2023 Year 4	2024 Year 5
			7/1/2020	7/1/2021	7/1/2022	7/1/2023
Total User Fees		\$385,653	\$452,000	\$468,000	\$485,000	\$502,000
<i>Percentage Change</i>			17.2%	3.5%	3.6%	3.5%
Calculated Charges						
Fixed Charges	70%	\$268,931	\$315,197	\$326,354	\$338,209	\$350,064
Number of Customers/Meters [1]		450	452	454	456	458
5/8-inch		448	450	451	452	454
3/4-inch		0	0	0	0	0
1-inch		2	2	3	4	4
1.5-inch		0	0	0	0	0
2-inch		0	0	0	0	0
Meter Equivalents		453	455	459	462	464
Fixed Charges per Customer [2]						
5/8-inch		\$98.95	\$115.46	\$118.64	\$122.01	\$125.75
3/4-inch		\$148.43	\$173.19	\$177.96	\$183.02	\$188.63
1-inch		\$247.38	\$288.65	\$296.60	\$305.03	\$314.38
1.5-inch		\$494.75	\$577.30	\$593.20	\$610.05	\$628.75
2-inch		\$791.60	\$923.68	\$949.12	\$976.08	\$1,006.00
Use Charges	30%	\$116,722	\$136,803	\$141,646	\$146,791	\$151,936
Total Use (in cubic feet)		3,980,784	3,998,476	4,016,169	4,033,861	4,051,553
Use Charge per HCF (per unit)		\$2.94	\$3.43	\$3.53	\$3.64	\$3.76

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:

	Flow (gpm)	Ratio		Flow (gpm)	Ratio
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			

Table A-12
Midway Heights CWD 2019 Fee Study
Irrigation Water Customers Calculated Fees

Customer Group	% Allocation	Fiscal Year Ending				
		2020	2021	2022	2023	2024
		Year 1	Year 2	Year 3	Year 4	Year 5
		7/1/2020	7/1/2021	7/1/2022	7/1/2023	
Total Revenue Requirement		\$203,751	\$235,000	\$243,000	\$251,000	\$260,000
<i>Percentage Change</i>			15.3%	3.4%	3.3%	3.6%
Metered Rev. Requirement [1]	40%	\$80,620	\$92,985	\$96,150	\$99,316	\$102,877
Fixed Charges Alloc. Rev. Requirement	77%	\$62,083	\$71,605	\$74,042	\$76,480	\$79,222
Equivalent Users [2]		215	217	219	221	223
Fixed Charge Annually per Equivalent User		\$289	\$330	\$338	\$346	\$355
Bi-Monthly Fixed Charge						
11.22 gpm rate, Bi-Monthly		\$48.13	\$55.00	\$56.35	\$57.68	\$59.21
16.83 gpm rate, Bi-Monthly		\$72.20	\$82.50	\$84.53	\$86.52	\$88.82
22.44 gpm rate, Bi-Monthly		\$96.26	\$110.00	\$112.70	\$115.36	\$118.42
28.05 gpm rate, Bi-Monthly		\$120.33	\$137.50	\$140.88	\$144.20	\$148.03
33.66 gpm rate, Bi-Monthly		\$144.39	\$165.00	\$169.05	\$173.04	\$177.63
39.27 gpm rate, Bi-Monthly		\$168.46	\$192.50	\$197.23	\$201.88	\$207.24
44.88 gpm rate, Bi-Monthly		\$192.52	\$220.00	\$225.40	\$230.72	\$236.84
50.49 gpm rate, Bi-Monthly		\$216.59	\$247.50	\$253.58	\$259.56	\$266.45
56.10 gpm rate, Bi-Monthly		\$240.65	\$275.00	\$281.75	\$288.40	\$296.05
61.71 gpm rate, Bi-Monthly		\$264.72	\$302.50	\$309.93	\$317.24	\$325.66
67.32 gpm rate, Bi-Monthly		\$288.78	\$330.00	\$338.10	\$346.08	\$355.26
72.93 gpm rate, Bi-Monthly		\$312.85	\$357.50	\$366.28	\$374.92	\$384.87
78.54 gpm rate, Bi-Monthly		\$336.91	\$385.00	\$394.45	\$403.76	\$414.47
Use Charges Alloc. Rev. Requirement	23%	\$18,537	\$21,380	\$22,108	\$22,836	\$23,655
Total Use (in cubic feet)		68,661	69,300	69,939	70,578	71,216
Use Charge per HCF (per unit)		\$0.27	\$0.31	\$0.32	\$0.33	\$0.34
Flat Customers Alloc. Rev. Requirement [1]	60%	\$123,131	\$142,015	\$146,850	\$151,684	\$157,123
Equivalent Users [3]		182	182	182	182	182
Miner Inch, year-round, Bi-Monthly		\$112.61	\$129.88	\$134.30	\$138.72	\$143.69
Seasonal Miners Inch (May 1-Oct 1), Bi-Monthly		\$98.54	\$113.65	\$117.52	\$121.38	\$125.73

Source: Midway Heights CWD, and HEC.

irr users

[1] Average of capacity and estimated water use calculations in Table A-8.

[2] Equivalent Users Calculation	Ratio to 1		Total				
	Miners"	Equivalents	Projected increase 2 per year				
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	-	-	-	-	-
Total Metered Equivalent Users			215.00	217.00	219.00	221.00	223.00

[3] Flat Rate Customers Equivalent Users

Year-Round Miner Inches		177	1.00	177.00
Seasonal Miner Inches	See Table A-10	6	0.88	5.25
Total Flat Rate Equivalent Users				182.25

Table A-13
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
Calculated Surcharge per Unit	\$0.24	\$0.28	\$0.30	\$0.31	\$0.33	\$0.34

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%