

Water Rate Study

FRWA Member: **Town of Howey-in-the-Hills**

Address: 101 N. Palm Avenue/P.O. Box 128
Howey-in-the-Hills, FL 34737

Telephone: 352-324-2290

Date: August 26, 2020

Contact: Mayor Martha MacFarlane

E-mail: mmacfarlane@howey.org

Population: 1175

Connections: 1019

County: Lake



Prepared by: *David Hanna Management/Finance Circuit Rider*

Florida Rural Water Association

2970 Wellington Circle

Tallahassee, Florida 32309-6885

Phone: 850-668-2746

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Florida Rural Water Association

2970 Wellington Circle, Tallahassee, Florida 32309

Member: **Town of Howey-in-the-Hills**
 Contact: **Mayor Martha MacFarlane**
 Address: **101 N. Palm Avenue/P.O. Box 128**
Howey-in-the-Hills, FL 34737

Date: **26-Aug-20**
 Connections: **1,019**
 Population: **1,175**
 PWS: **3350573**
 Data from FY:

Cells highlighted yellow are formulas

Water Pumped (gallons / year)	152,020,200 gal
Water Sold (gallons / year)	132,652,000 gal
Water Loss (gallons / year)	16,880,200 gal
Percent Water Loss	<i>Water Loss is Acceptable</i> 11.1%

ANNUAL WATER REVENUES

Water Revenues	\$625,191
Total Annual Income	\$625,191.00
Capacity Fees (needs to go to Restricted Funds for future use)	

ANNUAL WATER EXPENSES

Total Annual Expenses	\$ 422,944.00
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TOTAL WATER OPERATING EXPENSES

Total Operating Expenses	\$ 422,944.00
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DEBT PAYMENT / SYSTEM RESERVES

Debt Service Reserve USDA RD Loans/SRF Lc	\$ 198,508.00
Repair & Replace Program Reserve 2% <i>Recommend 5% to 10% of Annual Budget for funding infrastructure repair & replacement projects (Asset Mgmt). Funds set aside in a separate account.</i>	\$ 8,458.88
Major Capital Improvement Program 2% <i>as needed for major items</i>	\$ 8,458.88
Contingency / Emergency Reserve 2.0% <i>Recommend 5% to 10% of Annual Budget for funding 3+ months of utility operations for emergencies / hurricanes. Funds set aside in a separate account.</i>	\$ 8,458.88
Total Debt Payment and System Funded Reserves	\$ 223,884.64
TOTAL ANNUAL EXPENSES	\$ 646,828.64

WATER SYSTEM SUMMARY

Number of WATER Connections	Avg Usage/Month	ERCs	
No. Residential Connections	4,750 gpmo		990
No. Multi-Family Connections	4,250 gpmo		31
No. Commercial Connections (small)	3,500 gpmo		2
No. Commercial Connections (large)	19,785 gpmo		1
No. Institutional Connections (schools, hospitals, etc.)	42,791 gpmo		
Other Connections (describe) Irrigation			
Total ERCs		Total Conn	1,024
Average Usage per User per Month (1000 gallons)			10.795
Total Cost per 1000 gallons pumped			\$2.78
Total Cost per 1000 gallons SOLD			\$3.19
Average Monthly Cost (per customer)			\$52.64
Average income generated in one year per customer			\$631.67
Income Generated			\$625,191.00
Income Needed (Expense and Replacement)			\$ 646,828.64

Minimum Bill Calculation

Debt payment per customer per month (principal + interest / total number of customers / 12) + cost per thousand included in the minimum.	
Debt Expenses / Repair and Replacement / Reserves	\$ 223,884.64
Total Number of Customers	1024
Minimum bill per customer before any water use	\$ 18.22

Projected Income:

Minimum usage cost + (cost per 1000 gallons x average usage per user per month) 12 months x number of users.	
Minimum usage cost per customer per month	\$ 18.22
Number of Users	1,024
Average Usage per User per Month (1000 gallons)	10.795
Total Projected Income	\$646,828.64

(Projected income from rate increase + miscellaneous + interest income + refunds + other incomes)

Income Lost to Unaccounted for Water **\$53,820.37**

AWWA M1 ~ Equivalent Meter & Service Ratios

AWWA Manual M1 "Principles of Water Rates, Fees, and Charges," pp. 66-67

Positive Displacement Meters

Meter Size	Multiplication factor	Base rate
0.625	1.0	\$18.22
0.75	1.1	\$20.04
1	1.4	\$28.06
1.50	1.8	\$36.08
2	2.9	\$58.12

Turbine Meters

Meter Size	Multiplication factor	Base rate
2	2.9	\$58.12
3	11	\$220.46
4	14	\$280.58
6	21	\$420.88
8	29	\$581.21

Positive Displacement Meters

Meter Size	Application	Demand Flow Rates	Continuous Demand
5/8-inches	Residences, small apartments, small businesses	1/8 to 20 gpm Max	10 gpm
3/4-inches	Large residences, small to medium apartments	1/4 to 30 gpm Max	15 gpm
1-inches	Medium apartments, beauty parlors, barber shops, small motels, service stations, small businesses, industrial processes	3/8 to 50 gpm Max	25 gpm
1½-inches	Medium motels, hotels, large apartments, small industry, small processing plants	5/8 to 100 gpm Max	50 gpm
2-inches	Large hotels, motels, apartment complexes, industrial plants, processing plants	1 ¼ to 160 gpm Max	80 gpm

Turbine Meters

Meter Size	Application	Demand Flow Rates	Continuous Demand
2-inches	Large Users	3 to 300 gpm Max	160 gpm
3-inches	Large Users	4 to 450 gpm Max	350 gpm
4-inches	Large Users	25 to 1000 gpm Max	1,000 gpm
6-inches	Large Users	25 to 2,500 gpm Max	1,000 gpm



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 PWS: **2610203**

Water System Rate Recommendations

Current Residential Rate Structure

Volume	Rate	Increments
0-5000	\$27.29	Base Rate
5000-9000gal	\$2.17	Per 1,000 gal
9000-14000gal	\$2.39	Per 1,000 gal
14000-20000gal	\$2.59	Per 1,000 gal
20000-30000gal	\$3.65	Per 1,000 gal
30000-60000gal	\$10.54	Per 1,000 gal
3,000 gal	\$27.29	
5,000 gal	\$27.29	
10,000 gal	\$38.36	

Residential Rate Study Findings Option #1

Volume	Rate	Increments	Difference Over Current
0 -5,000	\$32.57	Base Rate	\$5.28 19.35%
5,000 - 9,000	\$3.19	Per 1,000 gal	\$1.02 46.93%
9,000 - 14,000	\$3.35	Per 1,000 gal	\$0.96 40.07%
14,000 - 20,000	\$3.52	Per 1,000 gal	\$0.93 35.72%
20,000 - 30,000	\$3.69	Per 1,000 gal	\$0.04 1.12%
30,000 - 60,000	\$3.88	Per 1,000 gal	-\$6.66 -63.23%
Example 5,000 gal	\$28.78		\$1.49 15.87%
Example 10,000 gal	\$47.73		\$9.37 34.33%

Residential Rate Study Findings Option #2

Volume	Rate	Increments	Difference Over Current
0	\$18.22	Base Rate	-\$9.07 -33.24%
0 - 5000 gal	\$3.19	Per 1,000 gal	\$1.02 47.00%
5001 - 9000 gal	\$3.35	Per 1,000 gal	\$1.18 49.37%
9001 - 14000 gal	\$3.52	Per 1,000 gal	\$1.13 43.53%
14001-20000 gal	\$3.69	Per 1,000 gal	\$1.10 30.23%
20001 and up	\$3.88	Per 1,000 gal	\$0.23 2.16%
Example 2,000 gal	\$24.60		-\$2.69 -9.86%
Example 3,000 gal	\$27.79		\$0.50 1.83%
Example 5,000 gal	\$34.17		\$6.88 25.21%
Example 10,000 gal	\$51.09		\$12.73 33.19%

Residential Rate Structure Findings Option #3

Volume	Rate	Increments	Difference Over Current
0-3000	\$25.88	Base Rate	-\$1.41 0.00%
3001-5000	\$2.87	Per 1,000 gal	\$0.70 32.26%
5001-9000	\$3.19	Per 1,000 gal	\$0.80 33.47%
9001-14000	\$3.35	Per 1,000 gal	\$0.76 29.32%
14001-20000	\$3.52	Per 1,000 gal	-\$0.13 -3.64%
20001 and up	\$3.69	Per 1,000 gal	-\$6.85 -64.96%
Example 5,000	\$31.62		\$4.33 15.87%
Example 10,000	\$41.99		\$3.63 9.00%

Other Considerations and Recommendations:

1. Water Loss is estimated at **11%** A Water Audit is Recommended!
 2. Recommend implementing an Asset Management Program for funding infrastructure repair & replacement projects (facilities, pumps, tanks, motors, etc.) In lieu of not having an asset mgmt program a reserve for these short-term projects is recommend at 5% to 10% of Annual Budget.

3. Recommend implementing a Major Capital Improvement Program for funding MAJOR long-term projects at 5% to 10% of Annual Budget.

4. Recommend a Contingency / Emergency Reserve for funding at least three (3) months of utility
 5. Via Ordinance, Implement an automatic yearly increase in rate equal to the Consumer Price Index.

Note: Ordinance can be waived if desired by Council in any one year.

6. All proposed rate options can have added a conservation rate tier structure if necessary to comply with

Non-Residential Rate Structure

Volume	Rate	Increments	Increase Over	
			Present Rates	
0 to 3,000 gal	\$3.19	per 1000 gal	46.93%	\$1.02
3,001 to 6,000 gal	\$3.35	per 1000 gal	54.28%	\$1.18
6,001 to 9,000 gal	\$3.52	per 1000 gal	61.99%	\$1.35
9,001 to 12,000 gal	\$3.69	per 1000 gal	-86.48%	-\$23.60
12,001 gal and up	\$3.88	per 1000 gal	-89.90%	-\$34.48

Institutional Base Rates				Base Cost	
Use	Rate	Application		\$20.04	At 250 GPD
			GPD Per FAC Table	Use/GPD	
Church	\$0.01	Per Seat		0.012	
Church w/ Meals	\$0.40	Per Meal	3 Per Seat	0.020	
Hospital	\$0.40	Per Bed	5 Per Meal	0.020	
Hospital w/ Meals	\$16.03	Per Meal	5 Per Bed	0.800	
Nursing Homes	\$8.02	Per Bed	200 Per Meal	0.400	
Nurs Hmes w/ Meals	\$0.40	Per meal	100 Per Bed	0.020	
Parks	\$0.32	Per Person	5 Per Meal	0.016	
Public Institution	\$8.02	Per Person	4 Per Person w/Toilets	0.400	
P.I. w/ Meals	\$0.40	Per Meal	100 Per Person	0.020	
Schools			5 Per Meal		
Day Type	\$0.80	Per Student	10 Per Student	0.040	
Add For Showers	\$0.32	Per Student	4 Per Student	0.016	
Add For Cafeteria	\$0.32	Per Student	4 Per Student	0.016	
Add For Workers	\$1.20	Per Student	15 Per Student	0.060	
Boarding School	\$6.01	Per Student	75 Per Student	0.300	