

Planning for Aging Infrastructure Needs with Your Water Rates



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Outline

- **The 3 Primary Functions of Water Rates**
- **Dissecting the Water Bill**
 - Base rates vs. usage rates
 - AWWA capacity factors
 - New users fees and system equity charges
 - Other potential fees
 - How do the three primary functions fit in?
- **Takeaways**
- **Questions**



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Primary Functions of Water Rates

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3 Primary Functions of Water Rates

1. Cover daily operation costs
2. Replacement and rehabilitation of existing infrastructure
3. Capital investments and future expansion



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Cover Daily Operation Costs

- **Labor**
 - Meter reading
 - General facility maintenance
 - Fixing leaks
 - Mowing
 - Valve exercising and flushing
 - Janitorial
- **Administrative Needs**
 - Billing
 - Utilities/overhead
 - Computers/software
 - Furniture
 - Phones
- **Electricity**
- **Treatment/Chemicals/Supplies**



Photo above from flows.com website



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Replacement and Rehabilitation of Existing Infrastructure

- Facilities that currently serve existing customers
 - Replacement pumps (well pumps, boosters, high-service)
 - Tank rehabilitations/repainting
 - Aging mains
 - Meters
 - Fleet vehicles and equipment
- Average cost and average life expectancy of each



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Capital Investments and Future Expansion

- Facilities that will serve new customers
 - New wells
 - New towers
 - New distribution facilities and transmission mains
- New equipment
- New process



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But isn't Water Free? (Dissecting the Water Bill)

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Base Rates vs. Usage Rates

Base Rate =

- Fixed charge
- Minimum bill
- Cost before or regardless of amount of water used

Usage Rate =

- Variable charge
- Consumption charge
- Cost per unit of water used



Photo above from flows.com website



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Base Rates vs. Usage Rates (cont.)

Example expenses funded by base rates:

- Payroll/salaries/benefits
- Metering/billing
- Building utilities/overhead
- Computers and office expense
- Professional fees
- Phones
- Insurance
- Licensure and dues
- General facility maintenance
 - Fixing leaks
 - Mowing
 - Valve exercising and flushing
 - Janitorial

Example expenses funded by usage rates:

- Electricity
- Treatment/chemicals/supplies
- To some degree:
 - Labor
 - Repairs and system maintenance
 - Gases and equipment maintenance



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Base Rates vs. Usage Rates (cont. 2)

Water Availability

- Water has to be made available at each meter location up to the maximum flow that the meter can provide regardless of how much water is actually used and when the water is provided.

AWWA Capacity Factors

- Larger meters require more water availability and consume more of the system's capacity.

Meter Size	Meter Type	Maximum Flow (GPM)	Meter Equivalent Ratio
5/8 x 3/4 in.	Displacement	25	1.00
3/4 in.	Displacement	32	1.50
1 in.	Displacement	50	2.00
1 1/2 in.	Displacement	100	4.00
2 in.	Displacement	180	8.00
2 in.	Single	200	10.00
3 in.	Compound	320	16.00
3 in.	Turbine	300	15.00
4 in.	Single	500	25.00
4 in.	Compound	500	25.00
4 in.	Turbine	630	31.50
6 in.	Single	1,000	50.00
6 in.	Compound	1,000	50.00
6 in.	Turbine	1,300	65.00
8 in.	Compound	1,600	80.00
8 in.	Turbine	2,000	100.00



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New Users Fees and System Equity Charges

New User/Meter/Customer Fees Should Cover:

- Cost of meter and materials
- Installation labor costs
- System equity charge

System Equity Charge

- Also referred to as cost of availability or excess capacity allocation charge
- The calculated cost of building the water system divided by the number of equivalent users/meters of the system
- Gets new users "up-to-speed" with existing users

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6 in.	Compound	1,000	50.00
6 in.	Turbine	1,300	65.00
8 in.	Compound	1,600	80.00
8 in.	Turbine	2,000	100.00



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Other Potential Fees

- Fire protection fees
- Tap fees
- Commercial/industrial rates
- Irrigation rates
- Proximity fees



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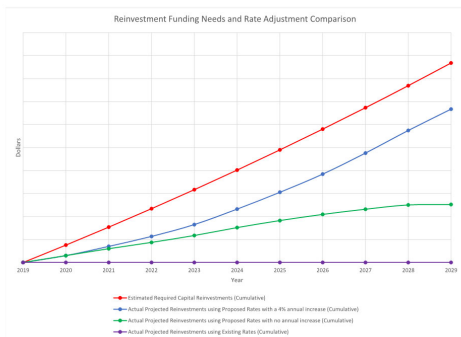
3 Primary Functions of Rates (revisited)

- 1. Cover daily operation costs**
 - Base rates and usage rates
- 2. Replacement and rehabilitation of existing infrastructure**
 - Base rates and usage rates
 - Other fees
- 3. Capital investments and future expansion**
 - New user fees and system equity charges
 - Cost shares with development



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Takeaways

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Takeaways

- **Consider each of the primary functions when contemplating rate changes:**
 - Cover daily operation costs
 - Replacement and rehabilitation of existing infrastructure
 - Capital investments and future expansion
- **Avoid dramatic increases!**
 - In other words, do not double your rates as a result of this presentation ☹
 - Consider annual percentage increases
- **Not a “One Size Fits All”**



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Questions?

Download a copy of this presentation at www.gobartlettwest.com/hydraulic-model

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