Setting Effective Rates for Small Water Systems

A Special Training Program for Small Systems

Made Possible through the Collaborative Efforts of

American Water Works Association

PARTNERSHIP FOR SAFE WATER

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USDA Rural Development

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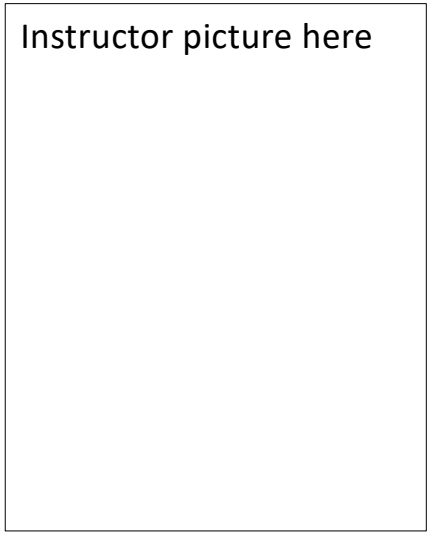
Introduction

INSTRUCTOR



- Name
- Email
- Phone

- Bio

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Introduction

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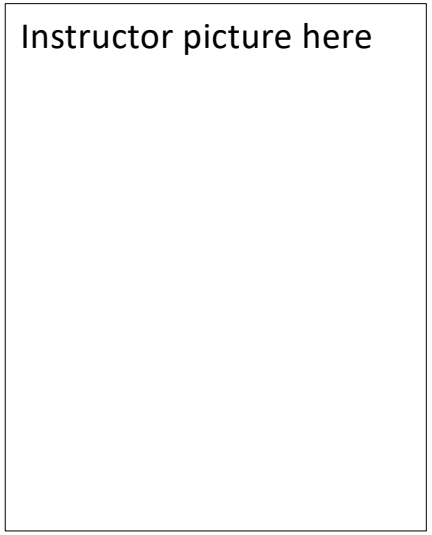

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Application of Water Loss Control Practices

What size is your utility?

a. 0-2,500
b. 2,500-10,000
c. 10,001-30,000
d. 30,001-large
e. N/A

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Workshop Agenda and Learning Objectives

- Introductions and overview
- Pre-Test
- Assessing revenue requirements
- Identifying community's financial priorities
- Building rates that fit your situation
- Background on collaboration between AWWA, USDA, and Partnership for Safe Water
- How to apply for USDA funding
- Where to go for additional assistance after this workshop
- Post- Test

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Pre-Test

American Water Works Association

- Since 1881
- Develop and maintain standards for water utilities
- Develop educational materials and programs, including conferences
- 43 sections bring together local utilities and their partners for education and training

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Ultimate Goal of Workshop Series

- Identify areas that need improvement
- Match those needs with USDA funding
- Provide technical assistance to small communities to facilitate the funding process and get the project started
- Provide information and other helpful resources to small communities

American Water Works Association

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So, today's workshop will focus on the following:

- Assessing revenue requirements
- Identifying community's financial priorities
- Building rates that fit your situation

Assessing Your System—
Your Revenue Requirements

What are your biggest capital needs?

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Show of hands, how many of you have enough money to pay for those capital needs?

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Our Goal Today

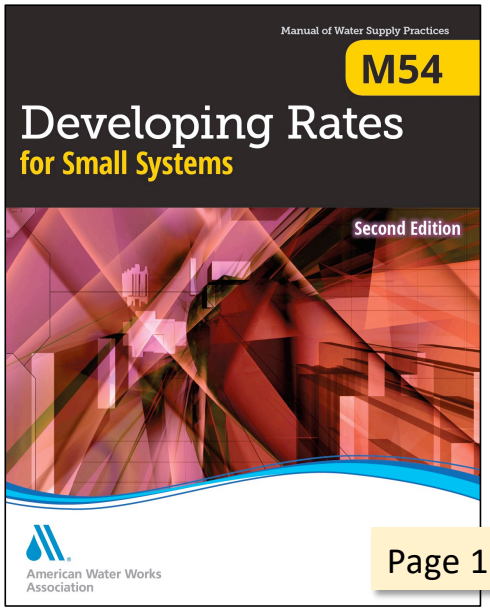
- Help you assess your needs
- Help you understand how to get your system in a good financial position
- Connect your financial need to a financial source

Session Objectives

- Describe the process of creating a multi-year financial plan
- Identify the costs and revenues that make up your system's finances
- Evaluate the sufficiency of revenues for an example small water system through an exercise

Financial Planning Process

- The primary objective of the financial planning process is to ensure that the utility has the ability to obtain sufficient funds to develop, construct, operate, maintain, and manage its water system on a continuing basis, and in full compliance with federal, state, and local requirements



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Financial Planning Process

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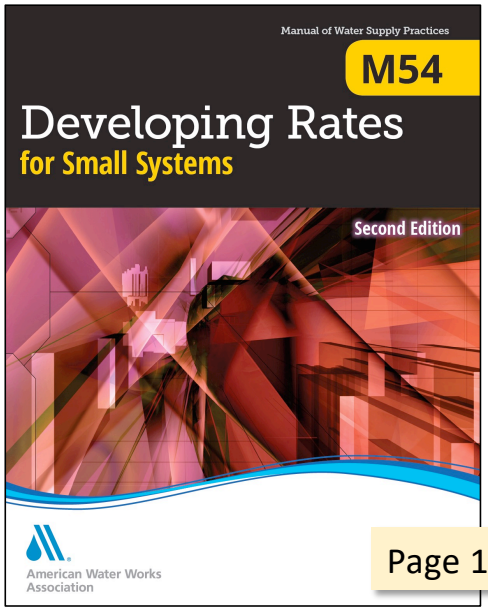
- Ideally project out 3-5 years



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Financial Planning Process

- Water utilities' revenues from water service charges, user rates, and capital charges should be sufficient to enable utilities to provide for:
- Annual operation and maintenance expenses
- Capital costs (e.g., debt service and other capital outlays)
- Adequate working capital and required reserves

Expenses, Expenditures & Reserve Contributions

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Operations & Maintenance Expenses

- Payroll & payroll-related
- Repairs & Maintenance
- Professional services
- Power and other utilities
- Insurance
- Office and billing
- Treatment/Chemicals
- Education and certifications
- Permits
- Contract services
- Vehicle expenses
- Pension plan
- Public notices
- Bulk water purchases

O&M Expenses

Operating Expenses:	
Salaries, wages and payroll taxes	41,013
Utilities	13,985
Repair and maintenance	9,722
Supplies	23,216
Office expense	6,501
Vehicle expense	3,166
Insurance	13,171
Professional services	9,090
Contract labor	26,212
Dues	1,110
Treatment	47,173
Depreciation	137,597
Miscellaneous	18
Total Operating Expenses	331,974

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Relationship of O&M Costs to Water Production and Sale

What Changes Based on Production/Sale ("Variable Costs"):

- Power
- Treatment/Chemicals
- Bulk water purchases

What Doesn't Change Based on Production/Sale ("Fixed Costs"):

- Everything else

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Capital Expenditures

- Asset and equipment purchases, rehabilitations, and replacements

- Pipes
- Pumps
- Valves
- Meters
- Vehicles

- Tanks and storage
- Treatment equipment
- Buildings
- SCADA
- Others?

FY 2019-2020
Capital Projects Budget Summary

Project Name	Page #	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2022-24
Well / Well Site Rehabilitation	Schedule A	$151,500	$265,000	$100,000	$0	$0
Water Tower Repair / Painting	Schedule B	$26,000	$16,000	$3,300,000	$250,000	$0
District Vehicle Replacement	Schedule C	$56,000	$93,000	$50,000	$105,000	$58,000
Pumping Station Maintenance	Schedule D	$60,675	$20,000	$0	$0	$0
Administration Capital	Schedule E	$94,300	$93,400	$9,000	$9,800	$0
Water Distribution System Maintenance	Schedule F	$262,500	$172,000	$32,000	$32,000	$20,000
Tools & Equipment	Schedule G	$4,900	$10,500	$0	$0	$0
Machesney Park Roadway Projects	Schedule H	$60,000	$60,000	$0	$0	$0
Safety Equipment Acquisition / Replacement Program						
TOTAL		**$715,875**	**$729,900**	**$3,491,000**	**$396,800**	**$78,000**
Less IEPA Loan/Bonds				**$30,000**		
Developer/Municipal Contribution				**$3,000,000**		
Less MP Surcharge		**$60,000**	**$60,000**	**$0**	**$0**	**$0**
Less IDOT Funds						
Less Safety Grant		**$2,000**	**$2,000**	**$2,000**	**$2,000**	**$2,000**
Less Reserves Allotted						

Project Name	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Water Tower Repair / Painting (20 year cycle)					
Tower #1 (Repaint 2023)					
1. Engineering Altitude Valve		$10,000			
2. Install Altitude Valve			$100,000		
3. Exterior Tank Cleaning		$6,000			
4. Repaint tank					
5. Update Fall Protection	$3,000				
Tower #2					
1. Repaint tank			$200,000		
2. Exterior Tank Cleaning	$7,000				
Tower #3 (Repaint 2024)					
1. Exterior Tank Cleaning					
2. Repaint tank					
3. Roof Vent R & R + Fall Protection + Misc.	$10,000				
Tower #4					
1. Inspection					
2. Repaint tank					
Tower #5 (Repaint 2022)				$250,000	
1. Exterior tank cleaning					
2. Repaint tank					
Tower #7 (Repaint 2028)					
1. Exterior tank cleaning	$6,000				
2. Repaint tank					
Tower # 6 (Park 90) **New Construction**			$3,000,000		
Total	**$26,000**	**$16,000**	**$3,300,000**	**$250,000**	**$0**

Capital Improvement Program (CIP)

- General description of each project
- Identification of the years over which various projects are anticipated to be constructed
- Associated costs to construct/rehabilitate
- Any new operating costs that are anticipated once the project is complete or online

How To Pay For Capital Improvements

- Pay-as-you-go basis—directly from annual system revenues
- Debt—borrow money from USDA or banks, or issue bonds
- Capital reserves—save money over time

Debt Service & Debt Reserves

- Debt service—annual principal and interest payments that the utility pays to service its outstanding debt
- Debt reserve—required money in the bank to cover debt as security against a revenue shortfall
- Debt Coverage Ratio – Required revenue above expenses to protect bond holders (this is often non-restricted for capital expenses)

The primary objective of the financial planning process is to ensure that the utility has the ability to obtain sufficient funds to develop, construct, operate, maintain, and manage its water system on a/an:

a. Yearly basis
b. Monthly basis
c. Continual basis
d. Frequent basis

A Capital Improvement plan should include:

a. General description of each project
b. Identification of the years over which various projects are anticipated to be constructed
c. Associated costs to construct/rehabilitate
d. Any new operating costs that are anticipated once the project is complete or online

What are some of the main ways to pay for a capital improvement plan?

Why is it important to maintain an adequate cash reserve position in your utility?

Revenues

Rate Revenue

- Funds received from customers for water service with two main components:
  - Fixed charge per billing period
  - Variable charge based on customer usage

Putting It All Together

Over the next 3-5 years:

- Project O&M expenses
- Project what you will spend on capital needs and debt service
- Determine how much money needs to be put into reserves
- Project revenues based on your current rates

Sufficiency of Current Rates

- Based on your projections, does your current rate structure and pricing cover all your anticipated costs (your revenue requirement) for the next 3-5 years?

Exercise

Lara Crown Water District

- Serves 335 people through 116 connections; community population is stagnant
- Last year, customers used 487,235 cubic feet of water; usage has slightly declined over the past several years
- Plans to pay for the 5 capital projects out of current revenues and reserves
- Has one loan that requires the District to have 125 percent of annual payments available in liquid cash on hand ($35,714)

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Revenues						
	Last Year Actual	FY + 1	FY + 2	FY + 3	FY + 4	FY + 5
Connection charges (base fee)	$ 117,276	$ 117,276	$ 117,276	$ 117,276	$ 117,276	$ 117,276
Water sales (volumetric)	$ 170,532	$ 168,827	$ 167,138	$ 165,467	$ 163,812	$ 162,174
Application & transfer fees	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Late and turn on fee	$ 1,335	$ 1,335	$ 1,335	$ 1,335	$ 1,335	$ 1,335
Reconnect fee	$ 600	$ 600	$ 600	$ 600	$ 600	$ 600
Interest	$ 36	$ 36	$ 36	$ 36	$ 36	$ 36
Total Revenue	$ 292,279	$ 290,574	$ 288,885	$ 287,214	$ 285,559	$ 283,921

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Expenses						
	Last Year Actual	FY + 1	FY + 2	FY + 3	FY + 4	FY + 5
Bank fees	$ 186	$ 190	$ 194	$ 197	$ 201	$ 205
Accounting	$ 10,000	$ 10,200	$ 10,404	$ 10,612	$ 10,824	$ 11,041
Business Manager (contract)	$ 51,200	$ 52,224	$ 53,268	$ 54,334	$ 55,421	$ 56,529
Repairs/Emergency	$ 38,500	$ 39,270	$ 40,055	$ 40,857	$ 41,674	$ 42,507
Meter reader	$ 3,600	$ 3,672	$ 3,745	$ 3,820	$ 3,897	$ 3,975
Water Manager (contract)	$ 61,320	$ 62,546	$ 63,797	$ 65,073	$ 66,375	$ 67,702
Website support	$ 599	$ 611	$ 623	$ 636	$ 648	$ 661
Election	$ 2,000	$ 2,040	$ 2,081	$ 2,122	$ 2,165	$ 2,208
Insurance	$ 8,654	$ 8,827	$ 9,004	$ 9,184	$ 9,367	$ 9,555
Office	$ 3,814	$ 3,890	$ 3,968	$ 4,047	$ 4,128	$ 4,211
Professional fees	$ 16,500	$ 16,830	$ 17,167	$ 17,510	$ 17,860	$ 18,217
Supplies	$ 42,540	$ 43,391	$ 44,259	$ 45,144	$ 46,047	$ 46,968
Training	$ 2,000	$ 2,040	$ 2,081	$ 2,122	$ 2,165	$ 2,208
Utilities	$ 11,808	$ 12,044	$ 12,285	$ 12,531	$ 12,781	$ 13,037
Debt Service	$ 28,571	$ 28,571	$ 28,571	$ 28,571	$ 28,571	$ 28,571
Capital Improvements	$ -	$ 17,878	$ 102,900	$ 4,800	$ 22,558	$ 10,050
Total Expenses	$ 281,292	$ 304,224	$ 394,402	$ 301,561	$ 324,682	$ 317,645

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Each year is adjusted by 2% except debt service and capital improvements.

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Expenses							
							+ 5
Bank fee							205
Accounti							1,041
Business							6,529
Repairs/							2,507
Meter re							3,975
Water M							7,702
Website							661
Election							2,208
Insuranc							9,555
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Professio							8,217
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Training							2,208
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Debt Ser							28,571
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Total Expenses	$	281,292	$	304,224	$ 394,402	$ 301,561	$ 324,682	$ 317,645

Capital Improvement Plan	
Well Drilling	$ 17,898
Bridge Removal and Replacement (needed for access to storage tank)	$ 102,900
Chlorine Analyzer and Chlorine Pump	$ 4,800
Water Line Replacement	$ 22,558
Multiple Pump Replacement	$ 10,050

Revenues - Expenses	$ 10,987	$ (13,650)	$ (105,517)	$ (14,347)	$ (39,123)	$ (33,724)
Fund Balance - Start of FY	$ 216,015	$ 227,002	$ 213,331	$ 107,815	$ 93,469	$ 54,346
Fund Balance - End of FY	$ 227,002	$ 213,331	$ 107,815	$ 93,469	$ 54,346	$ 20,622

Revenues - Expenses	$ 10,987	$ (13,650)	$ (105,517)	$ (14,347)	$ (39,123)	$ (33,724)
Fund Balance - Start of FY	$ 216,015	$ 227,002	$ 213,331	$ 107,815	$ 93,469	$ 54,346
Fund Balance - End of FY	$ 227,002	$ 213,331	$ 107,815	$ 93,469	$ 54,346	$ 20,622

Exercise

- How are you feeling about this utility's financial future? What looks good? What concerns do you have?
- What if anything is missing or wrong about the financial plan?
- And how is their bottom line? What do you think their next steps will be?

If Revenues Are Not Sufficient

- Try cutting costs first—but only if you can maintain compliance and level of service
- Adjust rates as necessary

New Rate Design

- Once we understand the revenue requirements for the system, we can find a rate design that best reflects your community objectives

Questions?

What is the fixed charge on a water bill tied to?

a. The amount of water a customer consumes in a given period
b. The amount of debt a utility had to repay
c. The cost of reading meters and preparing a bill
d. The administrative costs related to operating the utility

Which of these is not a Capitol expenditure?

a. Treatment Equipment
b. Water Storage Tank
c. Payroll/Salaries
d. Pumps

Your Community Objectives to Guide Rate Design

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Session Objectives

- Describe the core objectives to guide rate design
- Identify where to find key data
- Interpret data on your utility and your customer base to identify the most appropriate objectives

When setting rates, what should you care about?

What's important to you?

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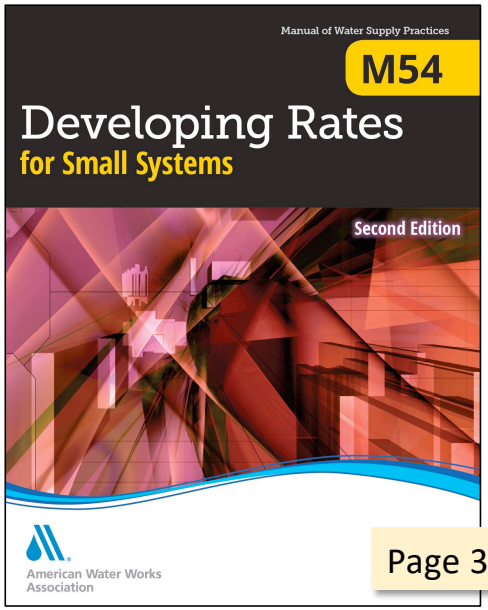
Objectives to Guide Rate Setting

- Revenue sufficiency
- Revenue stability
- Simplicity
- Ease of administration
- Affordability



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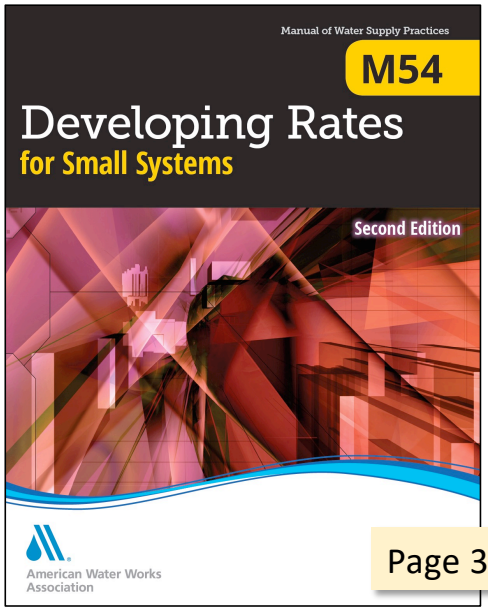
Objectives to Guide Rate Setting

- Resource efficiency
- Legal
- Consistency with cost-of-service principles
- Fairness



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Objectives to Guide Rate Setting

- There are tradeoffs between the various objectives
- Some may be mutually exclusive

Competing Objectives

- Revenue sufficiency
- Revenue stability
- Simplicity
- Ease of administration
- Affordability
- Resource efficiency
- Legal
- Consistency with cost-of-service principles
- Fairness

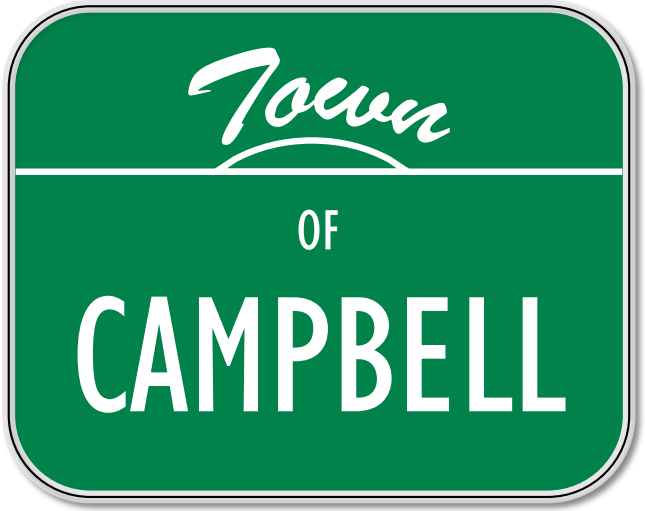
Objectives to Guide Rate Setting

- It is difficult, if not impossible, to achieve all the objectives in one rate design
- May need to prioritize objectives and design rates that reflect *relative* priorities

Which Objectives?

- Boards and water system leaders are responsible for deciding which objectives are most important to the community during the time of rate adjustments
- Data can help us identify which objectives are most relevant
- Let's look at an example...

Two Small Water Systems



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These communities look really similar!

	Campbell	Foundry
Population Served	2,292	2,214
Service Connections	764	747
Median Household Income	$32,031	$32,857

Does that mean their rate setting objectives are also similar?

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Remember...

- Data can help us identify which objectives are most important
- Data can also help you understand how well your system is meeting certain objectives
- Some objectives may *always* be important

Objectives to Guide Rate Setting

- **Revenue sufficiency**
- **Revenue stability**
- Simplicity
- Ease of administration
- **Affordability**
- Resource efficiency
- Legal
- Consistency with cost-of-service principles
- Fairness

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Revenue Sufficiency

- Annual operating revenues
- Annual operating expenses
- Annual debt payments

- Source: Financial statements or budget actuals

Revenue Sufficiency Metrics

- Enough annual revenue to cover operating costs (operating ratio without depreciation)
- Enough annual revenue to cover operating costs and depreciation (operating ratio with depreciation)
- Enough annual revenue to cover operating costs and debt payments (debt service coverage ratio)

Revenue Stability

- Number of customers who pay their bills on time and in full
- Revenue from the base charge
- Revenue from the volumetric charge

- Source: Customer billing and usage records

Revenue Stability Metrics

- Payment rate
- Percent of total revenue from the base charge

Affordability

- Income distribution within the community
- Number of customers in certain key demographic categories
- Number of customers who qualify for social safety net programs

- Source: U.S. Census

Affordability Measures

- **No Percent MHI!!!!!**
- Customer income distribution
- Demographic analysis
- Percent of income the 20th percentile household spends on water after paying for housing or other necessities

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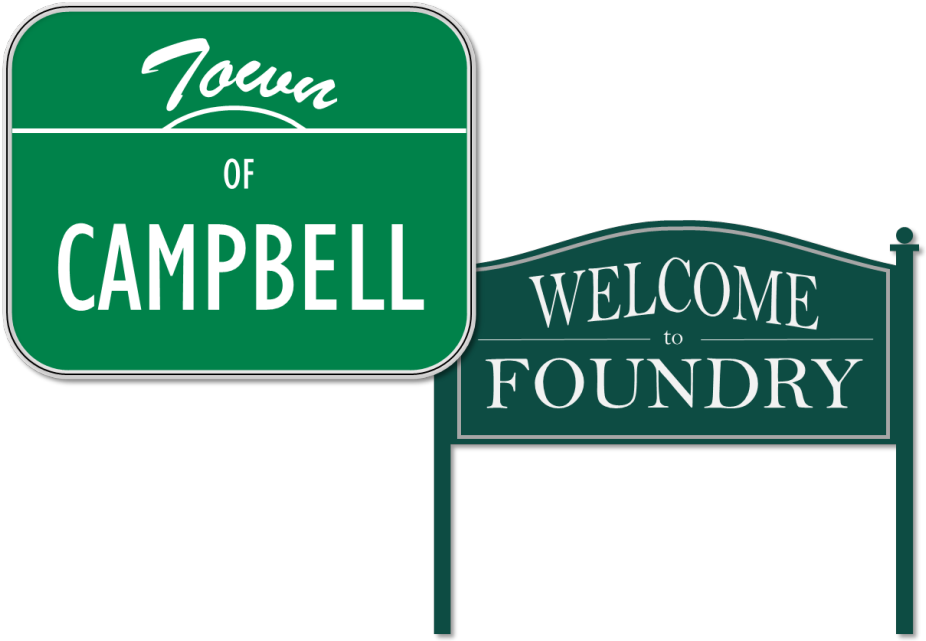
Exercise



- Our sample communities are adjusting their rates. Based on the data provided, which objectives should be important to each community?

- Work in small groups

Revenue Sufficiency Data and Metrics

Financial Statements attached

Operating Ratio (without depreciation)

$$\frac{Operating\ \ Revenues}{Operating\ \ Expenses} = \frac{\$483{,}468}{\$267{,}861} = 1.80$$

Operating Ratio (with depreciation)

$$\frac{Operating\ \ Revenues}{Operating\ \ Expenses\ +Depreciation} = \frac{\$483{,}468}{\$471{,}476} = 1.03$$

Debt Service Coverage Ratio

$$\frac{Operating\ \ Revenues\ -Operating\ \ Expenses}{Annual\ \ Principal\ +Interest} = \frac{\$215{,}607}{\$128{,}742} = 1.67$$

Revenue Sufficiency Data and Metrics

Financial Statements attached

Operating Ratio (without depreciation)

$$\frac{Operating\ \ Revenues}{Operating\ \ Expenses} = \frac{\$400{,}146}{\$305{,}750} = 1.31$$

Operating Ratio (with depreciation)

$$\frac{Operating\ \ Revenues}{Operating\ \ Expenses\ +Depreciation} = \frac{\$400{,}146}{\$541{,}519} = 0.74$$

Debt Service Coverage Ratio

$$\frac{Operating\ \ Revenues\ -Operating\ \ Expenses}{Annual\ \ Principal\ +Interest} = \frac{\$94{,}396}{\$155{,}040} = 0.61$$

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	Campbell	Foundry
Operating Ratio (*without depreciation*)	1.80	1.31
Operating Ratio (*with depreciation*)	1.03	0.74
Debt Service Coverage Ratio	1.67	0.61

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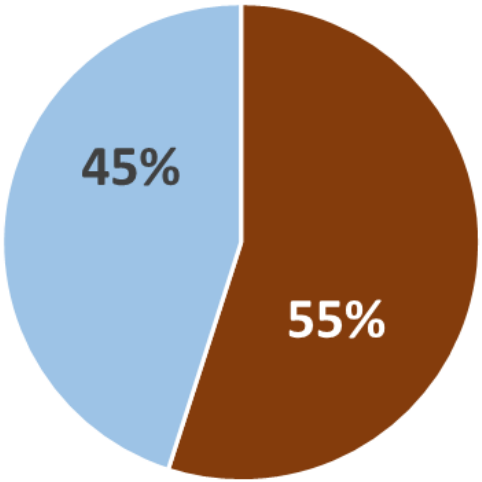
Key Revenue Stability Data

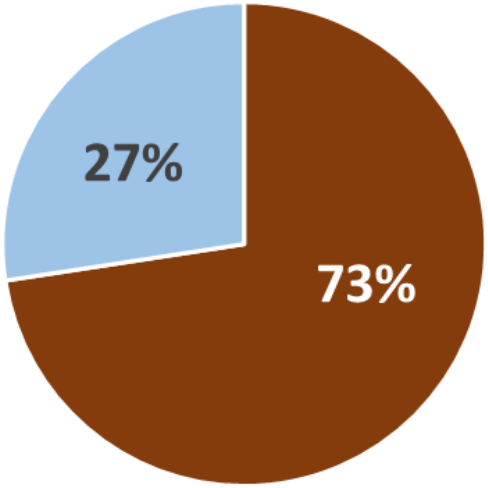
Campbell



Revenue from Base Charge

Revenue from Volumetric Charge

Foundry



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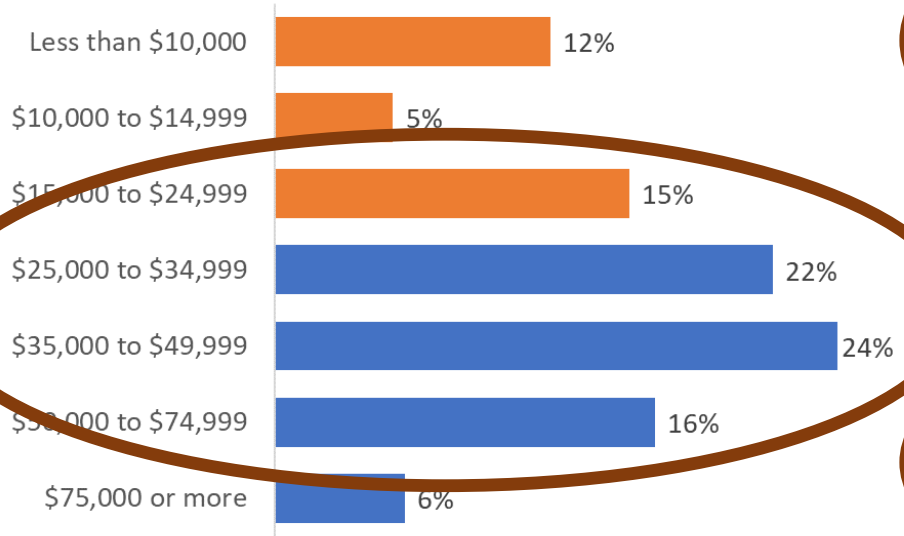
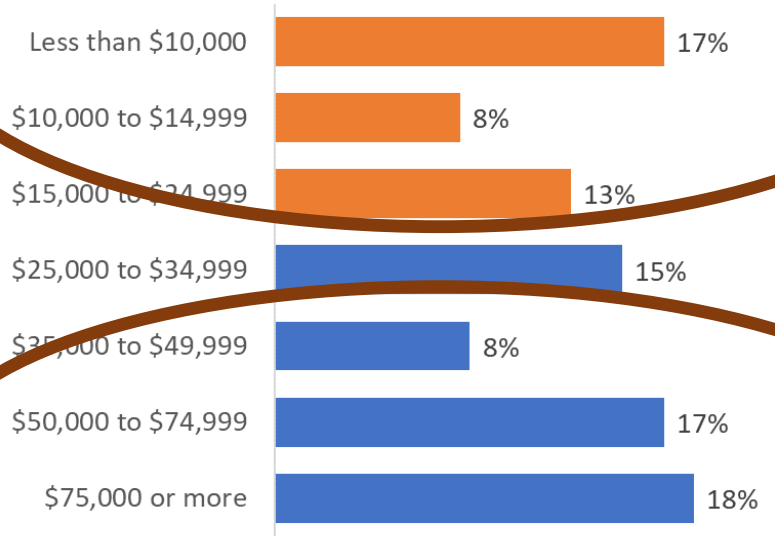
Affordability—Household Income

Campbell



Foundry



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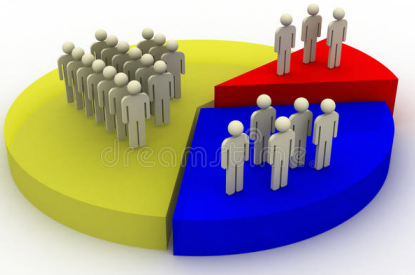
United States® Census Bureau

Legal

Resources



Demographics

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Questions?

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Building Rates That Fit Your Situation and Objectives

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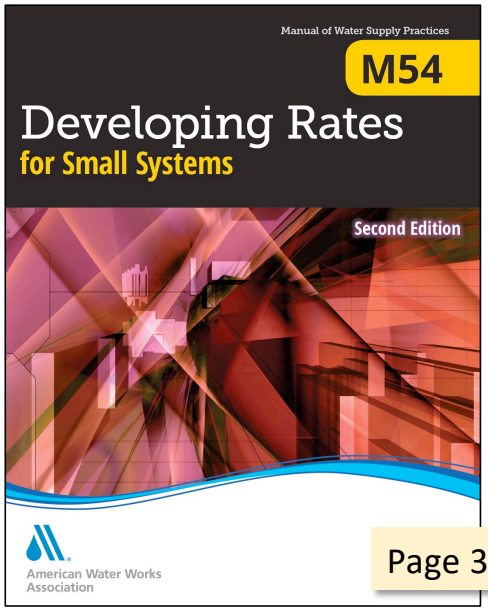
Session Objectives

- Describe the options you have in building rates
- Compare different ways of allocating costs to the fixed charge and variable charge of the rate
- Analyze rate structures to determine which objectives the rate structure promotes

Rate Design Process

- Step 1: Define rate or pricing goals and objectives
- Step 2: Evaluate rate alternatives
- Step 3: Understand and communicate outcomes



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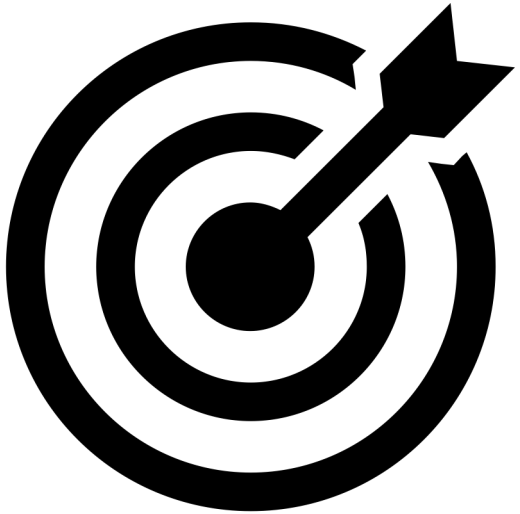
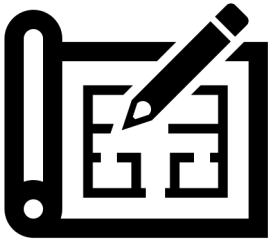
Achieving Revenue Sufficiency

- Remember! The primary objective of any rate design is to recover the revenue requirements or the costs of providing water service

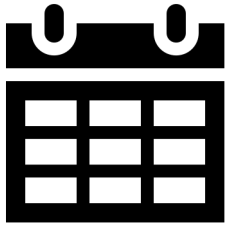


You Have Options!

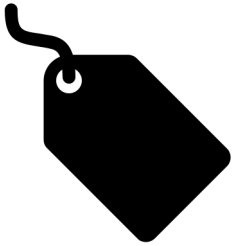


Rate Design

Customer Classes



Frequency of Billing



Pricing

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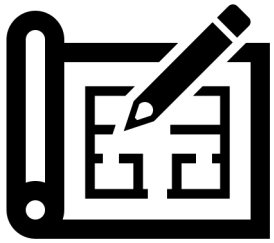
Use Objectives to Evaluate Options

- Revenue sufficiency
- Revenue stability
- Simplicity
- Ease of administration
- Affordability
- Resource efficiency
- Legal
- Consistency with cost-of-service principles
- Fairness



Rate Design

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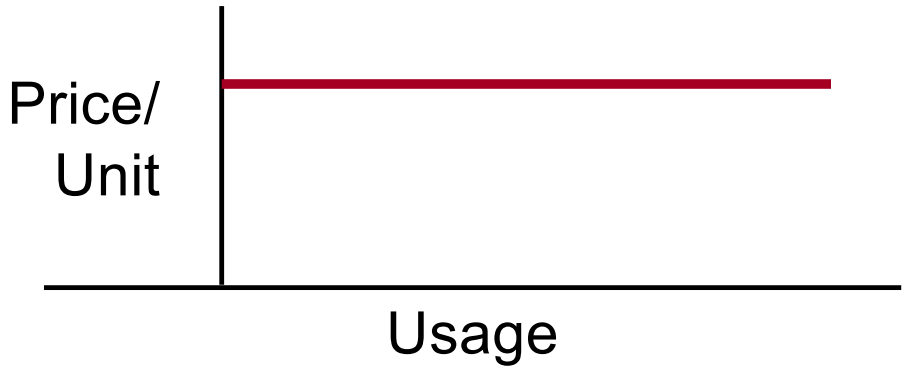
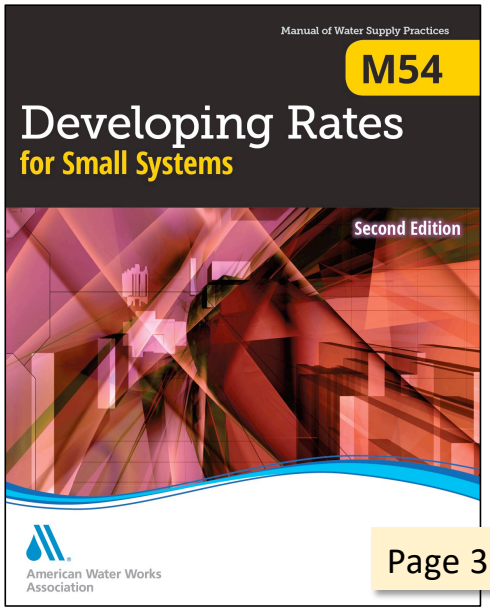
Uniform Rate Design

- The cost per unit of consumption does not change with additional units of consumption





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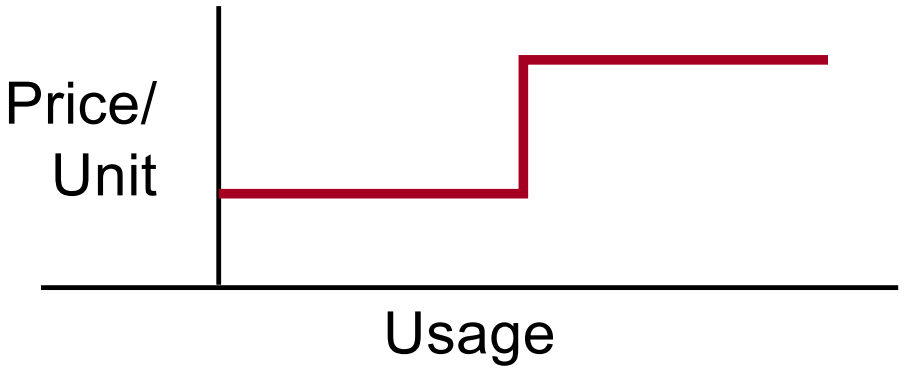
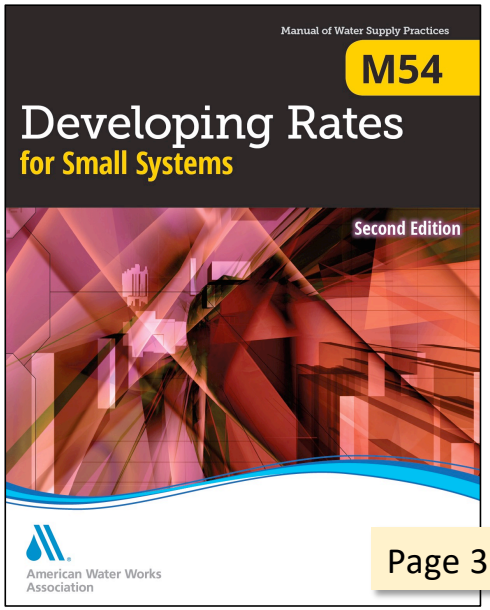
Increasing Block Rate Design

- The cost per unit of consumption increases with additional units of consumption





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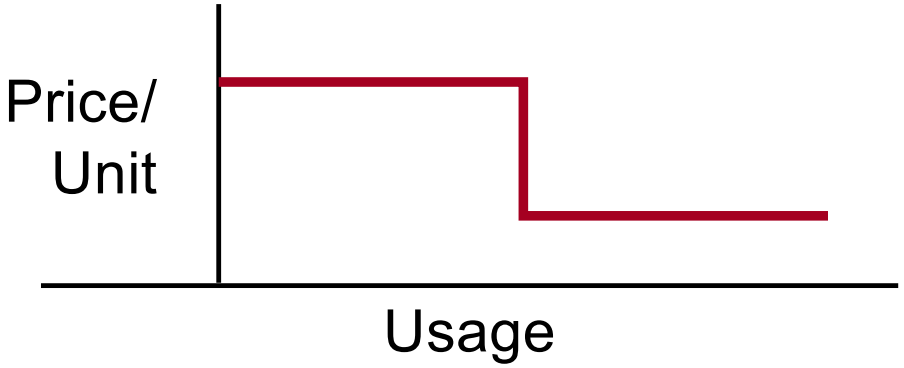
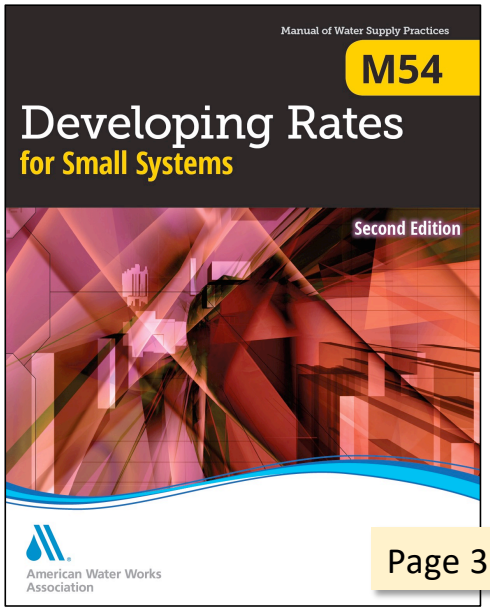
Decreasing Block Rate Design

- The cost per unit of consumption decreases with additional units of consumption





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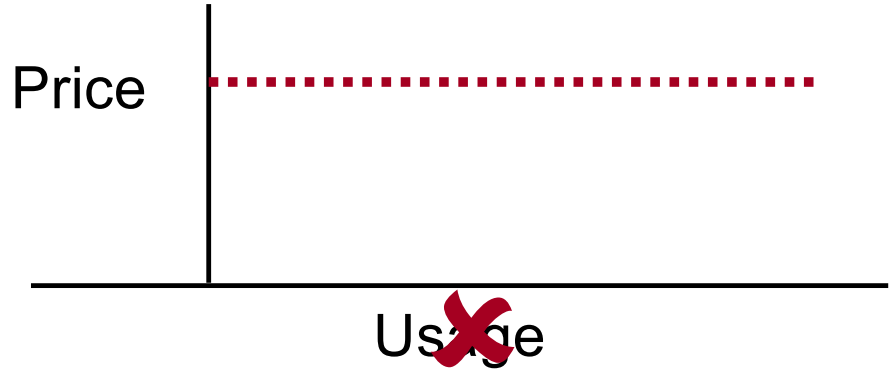
Flat Rate Design

- One charge per billing cycle for all customers; charge not based on units of consumption



Customer Classes

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Often One Customer Class Only

- Small systems often develop one rate that applies to all customers
- Where a water system's customer base consists entirely of residential customers and small commercial customers, developing rates by customer class is not likely to be either necessary or cost justified

One Customer Class Only

Water Rates

Base rate for 25,000 gallons: $35.00

Usage rate 25,000 to 50,000 gallons: $0.75 per 1,000 gallons

Usage rate 50,000 to 100,000 gallons: $1.30 per 1,000 gallons

Usage rate over 100,000 gallons: $2.00 per 1,000 gallons

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When Customer Classes Are Needed

- You have a customer or customers with unique water usage characteristics
- You serve customers outside municipal boundaries

Commercial Class

User Fee Residential – Water:

$55.00 per month flat rate, plus usage

1 – 15,000 gallons – no charge

15,001 – 20,000 gallons – $2.90 per 1,000 gallons

20,001 – 25,000 gallons – $3.00 per 1,000 gallons

25,001 gallons and up – $3.20 per 1,000 gallons

User Fee Commercial – Water:

$206.00 per month flat rate

(includes 20,000 gallons plus usage)

20,001 to 40,000 gallons – $5.00 per 1,000 gallons

Over 40,000 gallons – $10.00 per 1,000 gallons

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Multiple Commercial Classes

Belmont (Formerly Lakeland Management Co.) Rates			
Type	Class	Charge Base/ Month	Charge Usage/CF
Water	Commercial A	$436.00	$0.155612
	Commercial B	$145.66	$0.072009
	Multifamily Residential	$896.00	$0.072009
	Single Family Residential	$28.00	$0.072009

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Outside Municipal Boundary Rates

Billing Schedule	In City	Outside City
Water		
0-1,500 gallons	$17.75	$26.63
1,501-5,000 gallons	$4.10 per 1,000 gallons	$6.15 per 1,000 gallons
5,001-10,000 gallons	$4.50 per 1,000 gallons	$6.75 per 1,000 gallons
Over 10,000 gallons	$5.50 per 1,000 gallons	$8.25 per 1,000 gallons
Sewer		
0-1,500 gallons	$21.00	n.a.
1,501-5,000 gallons	$5.25 per 1,000 gallons	n.a.
5,001-10,000 gallons	$5.75 per 1,000 gallons	n.a.
Over 10,000 gallons	$6.50 per 1,000 gallons	n.a.

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Customer Class Proxy: Meter Size

- Rather than separating customers into classes like residential and commercial, charge customers differently based on meter size

- Different base rate (typical)

Base Charge by Meter Size

Monthly Standby Charges

Monthly Charge Per Installed Meter	Meter Size			
	5/8"	1"	2"	8"
Step 1 - effective upon approval	$13.00	$16.50	$53.00	$388.00

Monthly Volumetric Charges

	Volumetric Rates Per 1,000 gallons	
	Up to 25,000 gallons per month	Greater than 25,000 gallons per month
Step 1 - effective upon approval	$2.10	$2.56

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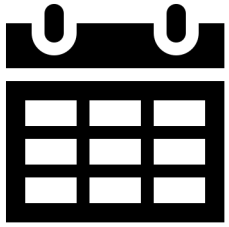

Frequency of Billing

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Frequency of Billing—Lots of Options

MONTHLY SERVICE CHARGE:

5/8	inch meter -	$11.00
3/4	inch meter -	11.00
1	inch meter -	16.00
1 1/4	inch meter -	21.00
1 1/2	inch meter -	26.00
2	inch meter -	37.00
3	inch meter -	58.00
4	inch meter -	86.00
6	inch meter -	151.00
8	inch meter -	227.00
10	inch meter -	327.00
12	inch meter -	427.00

PLUS VOLUME CHARGE: $5.50 per 100 cubic feet of water used (approximately 750 gallons).

Tri-Annually Service Charges:

⅝ - inch meter: $ 26.

QUARTERLY WATER AND SEWER BILLING

Water and Sewer rates are as follows: **Effective October 1, 2019** Village Residents: the minimum quarterly charge for water $15.00 plus $3.21 per 1,000 gallons of usage per unit. Town Residents are charged a minimum of $15.00 plus $4.82 per 1,000 gallons of usage per unit. Effective Oct. 1. 2019 minimum quarterly charge for sewer is $93.00 per unit. Town of

it per quarter.

Bi-Monthly Water and Sewer Rates

Inside City Limits:

Minimum Gallons Used: 0 – 3,000

Water: $30.28

Sewer: $32.82

Per 1,000 Gallons after the minimum is met:

Water: $4.29

Sewer: $5.03

Metered Water Rates 2020

(Metered Water Rates are per 6 month billing)

Residential Usage Rate

Base rate per equivalent single unit (includes 16,000 gallons) $ 135.00

16,001 gallons and over .015/per gallon

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What is an objective Guide to Rate Setting?

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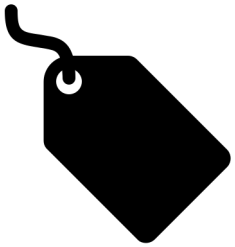
Which of the following are not advantages of using a monthly billing cycle?

a. Improved cash flow
b. Lower bill amounts
c. Billing is tied closer to consumption
d. Increased costs of meter reading

Which rate design philosophy is most likely to encourage conservation?

a. Flat Rate
b. Declining Block Rate
c. Inclining Block Rate
d. Uniform Rate



Pricing

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Deciding What to Charge

- ~~Just pick a number for the base charge out of thin air and go with it~~

- Assign specific costs to the fixed charge and to the volumetric charge

Remember...Fixed vs. Variable Costs

- Most of the costs of running a water system are “fixed” in the short term

- They do not vary with the amount of water consumed

One Approach

- You could put all of your fixed costs in the fixed charge (base charge) and all of your variable costs in the variable charge (volumetric charge)

- Generally, this would lead to a very high base charge for most systems

Example: Lovettsburg, USA

- Serves 1,400 people (including commercial accounts)
- 544 connections
- Annual billed water 40,865,311 gallons

Lovettsburg Annual Budget Expenses

OFFICE SUPPLIES	$1,476.47
SALARIES AND WAGES-WATER ADMIN	$97,614.96
FICA TAX-WATER	$10,000.00
UNIFORMS	$1,874.18
OPERATIONS(UNCATEGORIZED)	$1,311.83
TOTAL WATER ADMIN	$112,277.44

REPAIRS/MAINTENANCE	$15,000.00
COMMUNICATIONS/POSTAGE	$2,430.81
PROFESSIONAL DUES	$6,462.16
BANK FEES	$1,895.92
CHEMICALS/SUPPLIES	$4,510.34
UTILITIES-WATER TANK #1	$285.10
UTILITIES-WATER PUMP #1	$6,318.52
UTILITIES-PUMPHOUSE #1	$3,574.74
UTILITIES-PUMPHOUSE #2	$272.52
UTILITIES-TREATMENT PLANT	$378.12
UTILITIES-ALARM	$273.79
UTILITIES-LIFT STATION	$338.97
UTILITIES-WATER PUMP #2	$10,402.73
AUTO EXPENSE/FUEL	$7,985.72
PURCHASED WATER FOR RESALE	$32,170.35
VEHICLE EXPENSE	$4,041.93
SRF LOAN INTEREST	$15,764.98
USDA SINKING FUND/INTEREST	$21,644.92
OPERATIONS(UNCATEGORIZED)	$2,981.29
TOTAL WATER DISTRIBUTION	$136,732.91

LICENSING TESTING FEES	$260.00
EDUCATION/TRAINING	$264.13
ADVERTISEMENT	$371.00
MACHINERY AND EQUIPMENT	$20,000.00
VEHICLE PURCHASE	$9,636.00
TRAVEL/LODGING	$300.00
CONTINGENCY	$20,000.00
UNCATEGORIZED	$943.89
TOTAL OTHER	$51,775.02
CONTRIBUTONS TO RESERVES	$8,054.44

TOTAL BUDGET	**$308,839.81**

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Lovettsburg Fixed vs. Variable Costs

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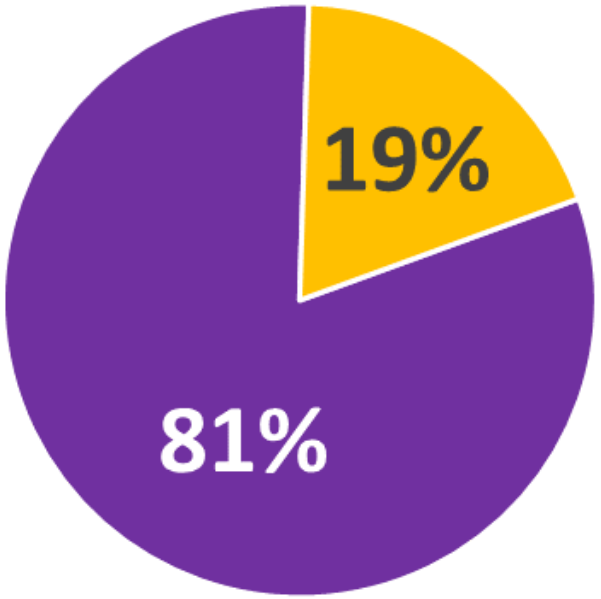
Lovettsburg Fixed vs. Variable Costs

Fixed Costs

Variable Costs



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Lovettsburg Fixed vs. Variable Costs

Fixed Costs	$250,314.63
Variable Costs	$58,525.18

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Lovettsburg Fixed vs. Variable Costs

Fixed Costs	$38.34/mo. base charge
Variable Costs	$1.43/1,000 gallons

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Capital Related Costs

- Cash payments for machinery and equipment
- Principal and interest payments on loans
- Contributions to reserves
- Vehicle purchases
- Repairs and maintenance *

Lovettsburg Capital Related Costs

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USDA PARTNERSHIP FOR CLEAN WATER

Lovettsburg Capital Related Costs

Fixed Costs	$13.80/mo. base charge
Variable Costs	$5.35/1,000 gallons

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Bill Impact Analysis

- Difference in a customer's bill under the existing design versus the proposed rate design at various levels of consumption

- What are the most common types of users you have in your system? Who are you most concerned about?

Bill Impact Analysis for Lovettsburg

Gallons Per Month	Example Customer at this Usage Level	Monthly Bill (Fixed as Base)	Monthly Bill (Capital as Base)
1,500	The Widow	$40.49	$21.83
6,000	Family of 4	$46.94	$45.92
13,500	Multi-Generational Family	$57.68	$86.06
50,000	Car Wash	$109.95	$281.44

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Rate Reviews

- The task of calculating revenue requirements, identifying objectives, and designing rates never ends
- Ideally rate reviews happen at least annually, typically as part of the annual budget process

Usage Declines as Price Increases

- Customers tend to respond to price increases by cutting back on usage, which then lowers revenues

- The amount they cut back is somewhat limited because a certain amount of water is always necessary for daily life

Questions?

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Let's Wrap Things Up…. Before We Break

Additional Resources & Technical Assistance

Post Test

Evaluation Form

Closing Comments

Contact Information

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Additional Resources

What's Next After Today's Workshop?

- Loan applications
- Technical assistance
- AWWA will send to all eligible (<10,000 population) participants
  - M 54 Manual

Contact Information

CHANGES EVERYWHERE – EXCEPT STEVE BARR

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