MISSISSIPPI
WATER RESOURCES RESEARCH INSTITUTE

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Are Your Rates Too High? Wastewater Rate Affordability and Setting the Right Rates for your System

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?

How many of you have enough money to pay for those capital needs?

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 wastewater 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 wastewater system on a continuing basis, and in full compliance with federal, state, and local requirements

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 wastewater system **on a continuing basis**, and in full compliance with federal, state, and local requirements

- Ideally project out 3-5 years

Financial Planning Process

- wastewater utilities' revenues from wastewater 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

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 wastewater 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

Relationship of O&M Costs to wastewater Production and Sale

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

- Power
- Treatment/Chemicals
- Bulk wastewater purchases

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

- Everything else

Capital Expenditures

- Asset and equipment purchases, rehabilitations, and replacements

- Pipes
- Pumps
- Valves
- Meters
- Vehicles

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

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

5210 WATER UTILITY

Account			Previous Year Actual	Final Budget
Revenues				
380000	OTHER FINANCING SOURCES			
381070	Proceeds from Notes/Loans/Intercap			4,606,000
383000	Interfund Operating Transfer			
Expenses				
430500	Water Operating			
100	PERSONAL SERVICES		108,809	120,000
810	INTER DEPT. CHARGES			
830	Depreciation - Closed to		114,045	
900	CAPITAL OUTLAY			4,606,000
940	MACHINERY & EQUIPMENT			
		Account:	287,967	4,873,292

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

Other Reasons for Reserves

- To withstand cash-flow fluctuations
- For emergency repairs or replacements
- To phase in rate increases over time

Revenues

Rate Revenue

- Funds received from customers for wastewater 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?

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

Your Community Objectives to Guide Rate Design

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?

Objectives to Guide Rate Setting

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

Objectives to Guide Rate Setting

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

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 wastewater 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...

These communities look really similar!

	Bobo	Rena Lara
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?

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

Objectives to Guide Rate Setting

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

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 wastewater after paying for housing or other necessities

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

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

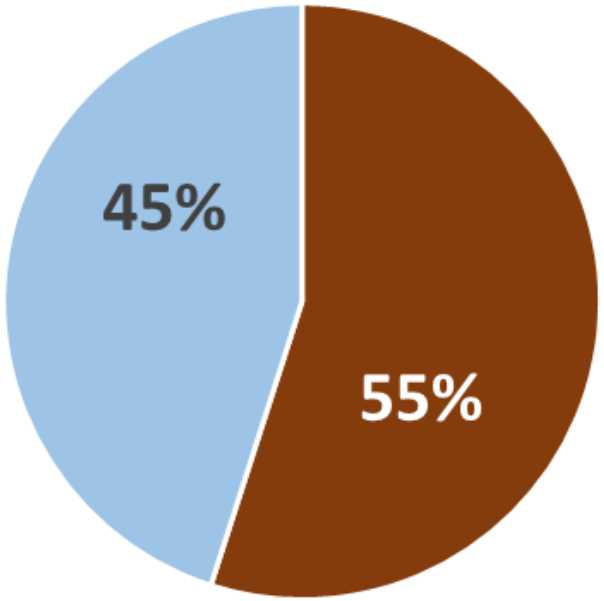
	Bobo	Rena Lara
Operating Ratio (*without depreciation*)	1.80	1.31
Operating Ratio (*with depreciation*)	1.03	0.74
Debt Service Coverage Ratio	1.67	0.61

Key Revenue Sufficiency Data

	Bobo	Rena Lara
More revenue than expenses, excluding depreciation	✓	✓
More revenue than expenses, including depreciation	✓	✗
Enough revenue to pay debt service after other operating expenses covered	✓	✗

Key Revenue Stability Data

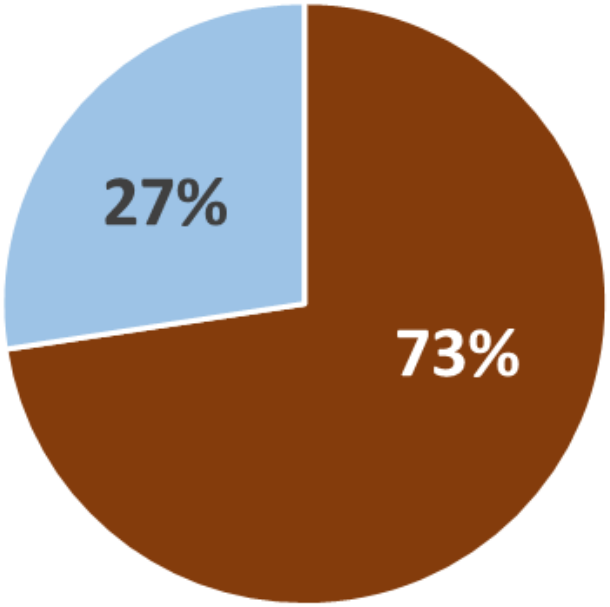
Bobo



Revenue from Base Charge

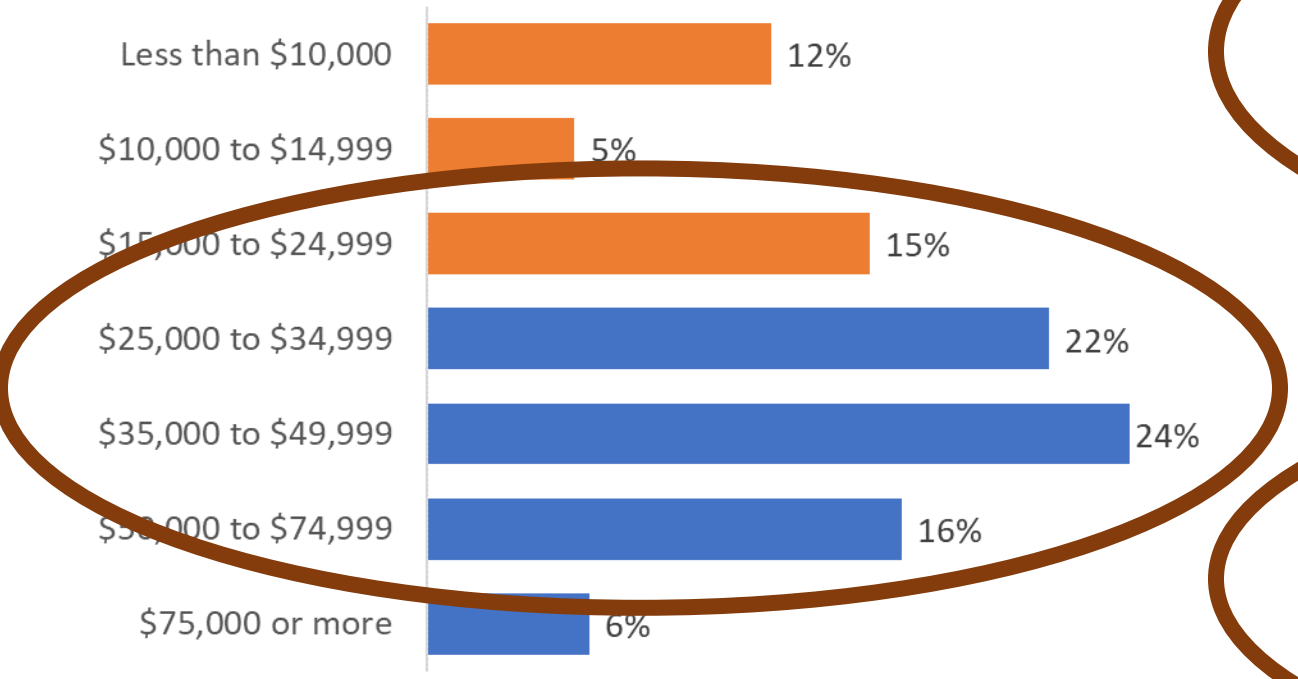
Revenue from Volumetric Charge

Rena Lara

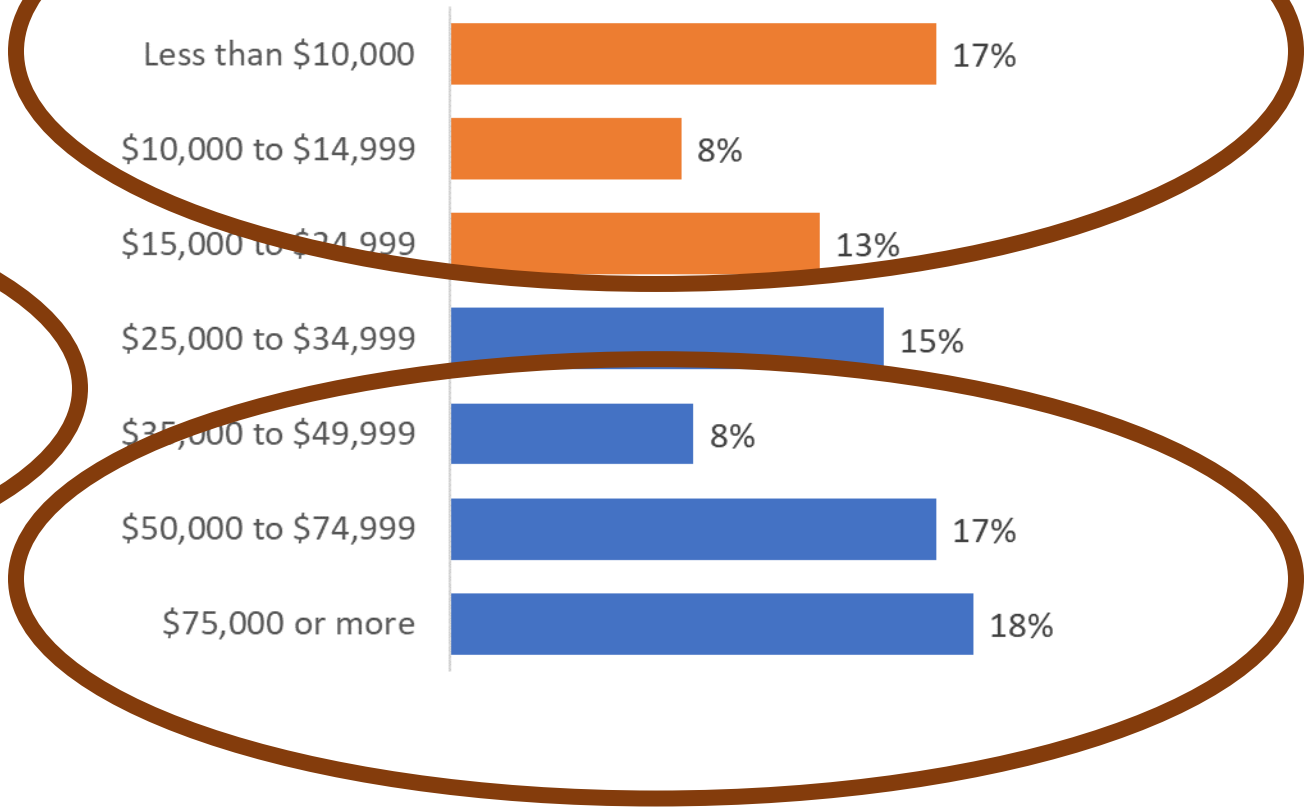


Affordability—Household Income

Bobo



Rena Lara



Affordability—Demographics

	Bobo	Rena Lara
Unemployment	7.6%	4.2%
Not in Labor Force	30.5%	54.9%
Social Security Income	16.9%	41.6%
Householder without a High School Diploma	17.5%	17.7%
Part-time Workers	10.1%	11.8%

Affordability—20th Percentile Households

- Amount of money left over for wastewater bills after paying for...
  - Mortgage or rent
  - Property taxes
  - Insurance costs on the home
  - Electricity
  - Heating
  - Sewer
  - Food

	Bobo	Rena Lara
20th Percentile Income	$18,484	$11,357
Mortgage, Property Taxes, Electricity, Gas, Sewer, Insurance	- $9,844	- $13,591
	$8,640	-$2,234
Food Costs	- $4,596	- $3,890
Remaining Funds	$4,044	-$6,124
Annual wastewater Bill	$246.00	$333.00
Annual wastewater Bill / Remaining Funds	6.1%	Insufficient revenue

	Bobo	Rena Lara
20th Percentile Income	$18,484	$11,357
Rent, Electricity, Gas, Sewer	- $7,284	- $5,940
	$11,200	$5,417
Food Costs	- $4,596	- $3,890
Remaining Funds	$6,604	$1,527
Annual wastewater Bill	$246.00	$333.00
Annual wastewater Bill / Remaining Funds	3.7%	21.8%

Questions?

Thank You!