



Rates and the Importance of Reserves

Shadi Eskaf

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2785

Eskaf@sog.unc.edu





About the Environmental Finance Center Network (EFCN)

The Environmental Finance Center Network (EFCN) is a university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

The Smart Management for Small Water Systems Program

This program is offered free of charge to all who are interested. The Project Team will conduct activities in every state, territory, and the Navajo Nation. All small drinking water systems are eligible to receive free training and technical assistance.

What We Offer

Individualized technical assistance, workshops, small group support, webinars, eLearning, online tools & resources





Areas of Expertise

- Asset Management
- Fiscal Planning and Rate Setting
- Energy Use and Efficiency
- Financial Regulatory Compliance
- Communications and Decision-making
- Multi-funding Coordination
- Water Loss Reduction
- Partnering with Other Water Systems
- Managing Small Systems in Drought



Outline

- The basic financial model for most water systems
- Rate setting objectives and rate structure design
- Reserves



Enterprise Fund

Governmental water systems are typically managed as **enterprise funds**.

An enterprise fund is a self-sustaining fund, where the revenues and expenses for that business unit are not commingled with others from other governmental activities.

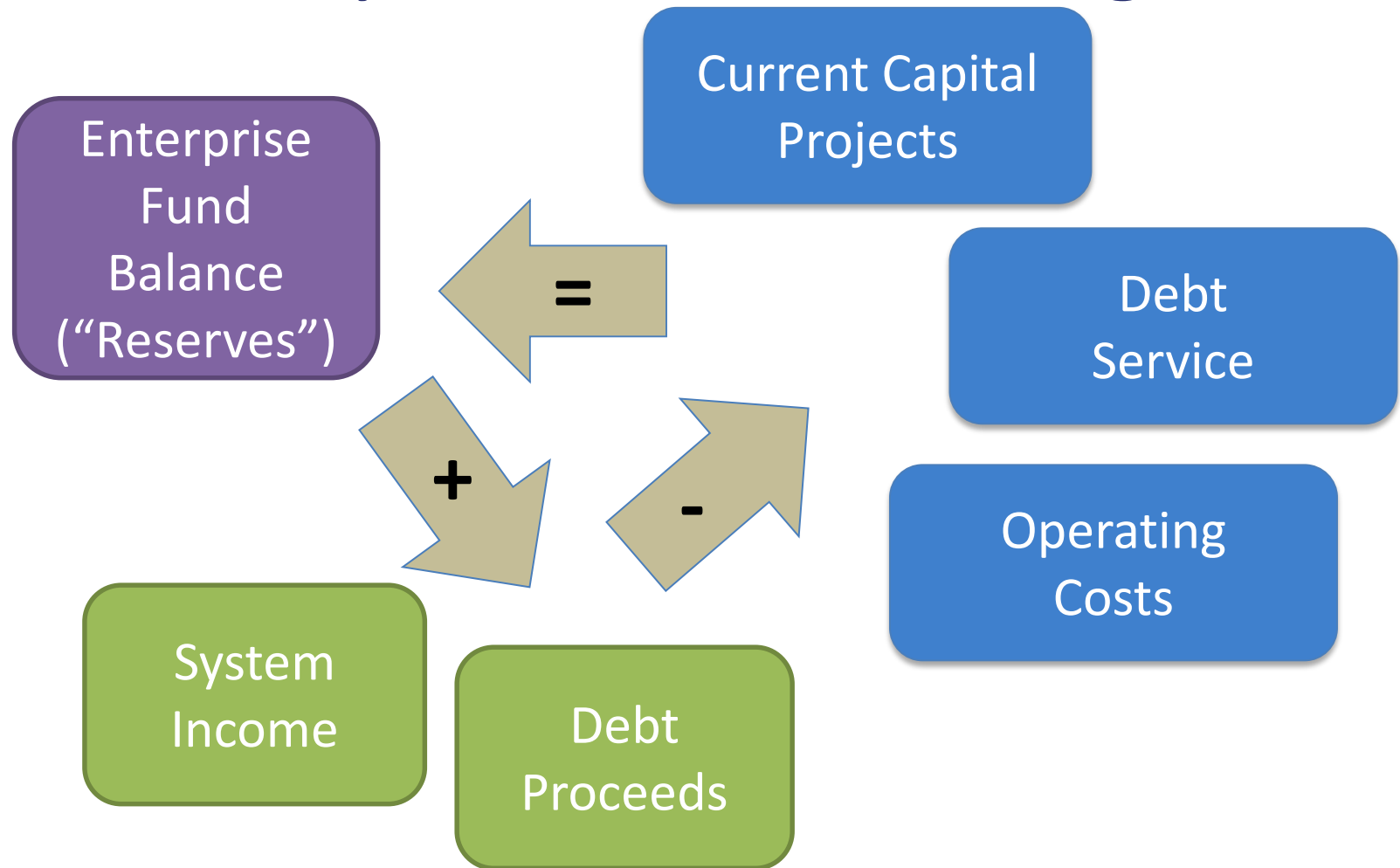


Guiding Principle for Enterprise Funds

Self-sufficiency

Revenues collected = Costs expended
(in a given year or over time)

Water System Finance Diagram





Three Types of Costs

- **Operating Costs**—what you need to run the system day in and day out
- **Capital Costs**—rehabilitation and replacement of existing infrastructure and new infrastructure
- **Debt Service**—what you owe on loans and bonds



Two Types of Revenues

- **System Income**—Money from rates, tap fees, impact fees, assessments, penalties, periodic charges, grants, other sources
 - Note: To be a true enterprise fund, not taxes!
- **Debt Proceeds** —Money from bonds and loans



System Income

For most water systems, revenue from **rates** account for ~80-90% of total revenues (often more).



Trivia

How much revenue did local governments in Montana collect in 2013 from water systems (excluding wastewater)?

\$126 million

Source: U.S. Census Bureau's "State and Local Government Finances by Level of Government and by State: 2012-13"

This is a little less than \$19/month for each person served by a local government community water system (with lots of assumptions)



How to tell if revenues > expenditures?

Look at the (past few)
audited financial
statements.

Did Operating Revenues
exceed Operating
Expenses (with or
without depreciation)?

BAVARIA STATEMENT OF NET ASSETS PROPRIETARY FUND JUNE 30, 2011	
	Water and Sewer Enterprise Fund
Assets	
Current Assets:	
Cash - operating	\$ 368,061
Accounts Receivable (Net)	60,346
Prepaid Insurance	5,856
Total Current Assets	440,563
Noncurrent Assets:	
Restricted cash	177,208
Capital assets	
Land	209,556
Buildings	22,982
Improvements other than buildings	5,873,769
Machinery and equipment	896,073
Construction in progress	1,454,079
Less: Accumulated depreciation	(2,883,225)
Deferred Charge	39,833
Total noncurrent assets	5,781,215
Total Assets	6,421,878
Liabilities	
Current Liabilities:	
Accounts Payable	21,090
Accrued Expenses	2,767
Due to Other Funds	8,176
Customer Deposits	62,625
Deferred Subsidy Revenue	440,005
Current Portion of Long Term Debt	343,811
Total Current Liabilities	898,474
Noncurrent Liabilities:	
Compensated Absences	15,605
Revenue Bonds (Net of current portion)	235,357
Notes Payable (Net of current portion)	646,824
Total Noncurrent Liabilities	897,786
Total Liabilities	1,796,260
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	362,362
Total fund net assets	\$ 4,832,078



How did Montana do?

In 2013, Montana local governments spent \$137 million on their water systems, which exceeds the \$126 million in revenue.

There may be good explanations for this that are not apparent from the survey.

Source: U.S. Census Bureau's "State and Local Government Finances by Level of Government and by State: 2012-13"



Rate Setting



Ideal Pricing

- Prices cover full “costs” of service
- Prices send and reinforce strategic messages
- Prices follow State’s laws and policies
- Beneficiaries pay for their benefits
- Polluters pay for their pollution
- Ability to pay is recognized and addressed
- Simple



“Full Cost Pricing”

- Operations & maintenance expenditures
- Taxes and accounting costs
- Contingencies for emergencies
- Principal and interest on long-term debt
- Reserves for capital improvement
- Source water protection



Cost-of-Service Pricing

Proportionally allocates costs of service to different customer groups, and prices rates to generate an equitable share of revenues from each customer group.

See AWWA's M1 Manual for details.



A simpler version



Setting Small Drinking Water System Rates for a Sustainable Future

One of the Simple Tools for Effective Performance (STEP) Guide Series



- Determining Costs
- Determining Current Revenues
- Setting Aside a Reserve
- Determining Revenues Required
- Designing Rate to Cover Costs
- Implementing the Rate
- Reviewing the Rate

http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_final_ratesetting_guide.pdf



Revenue generation isn't the only objective

Will our rates provide sufficient cost recovery?

Are we following the applicable laws?

Are we allocating the costs to the right customers?

Will revenues be resilient to changing water demands?

Do these rates send the right signals to our customers, based on our objectives?

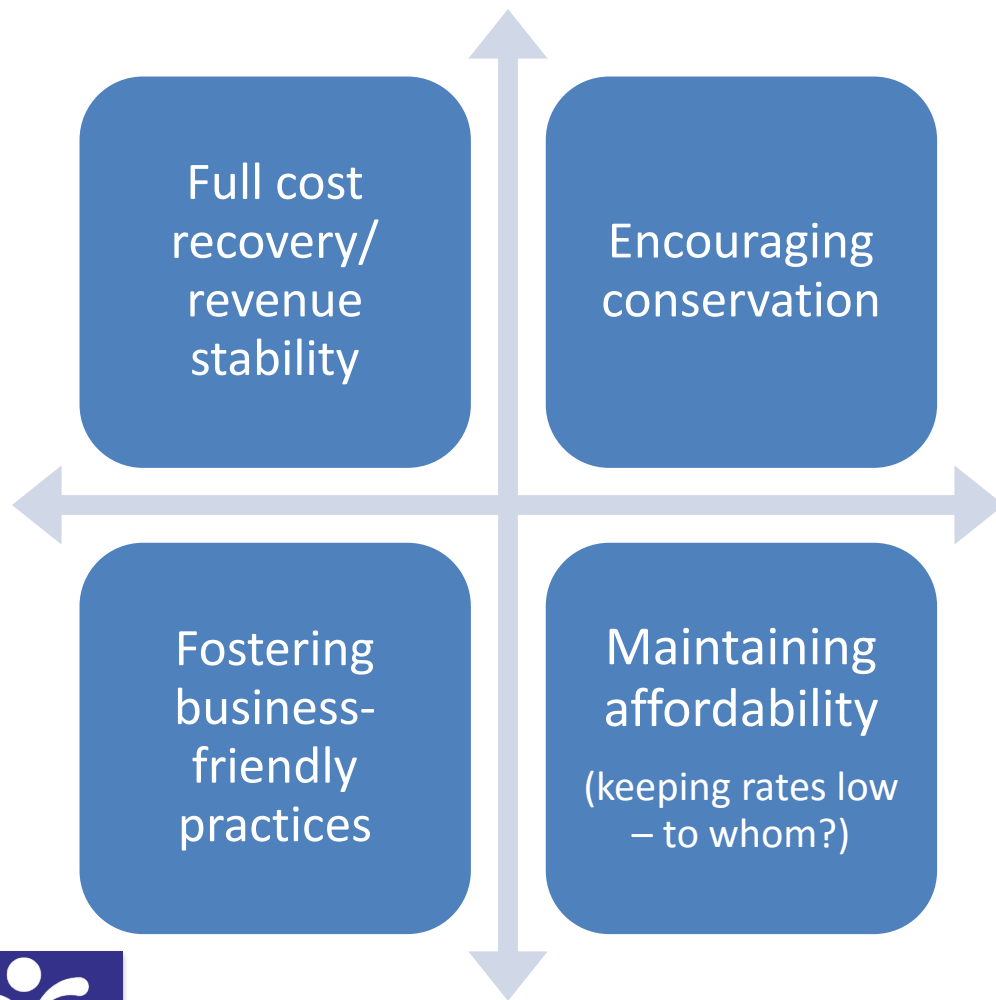
Will our customers understand these rates?

Will our customers be able to pay these rates?





Rank Your Rate Setting Objectives



1. _____
2. _____
3. _____
4. _____

Refer to this list and focus on the highest ranked objectives when following the guidelines for selecting the appropriate rate structure design.



Elements of Rate Structure Designs

1. Customer classes/distinction
2. Billing period
3. Base charge
4. Consumption allowance included with base charge
5. Volumetric rate structure
6. (If applicable) Number of blocks, block sizes and rate differentials
7. (Optional) Drought Rates
8. Frequency of rate changes

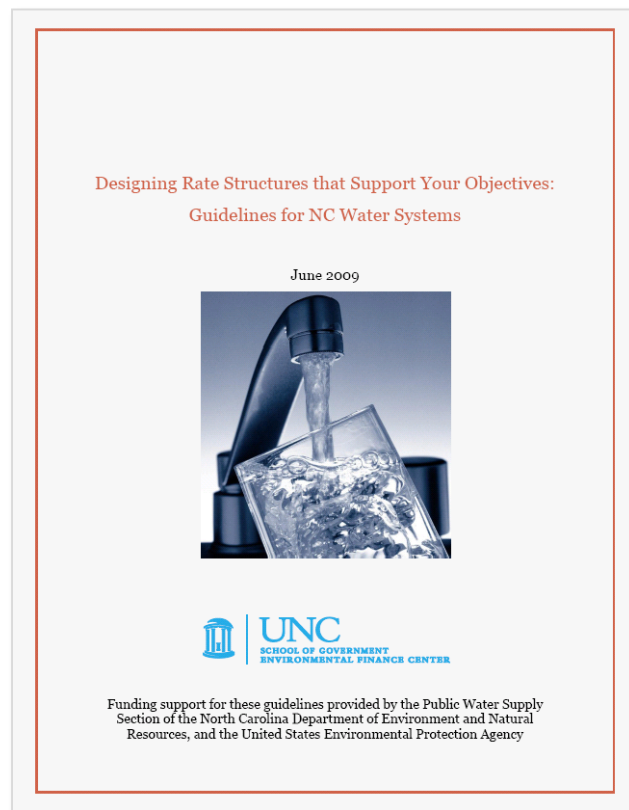


Designing Rate Structures That Support Your Objectives

Free guide
written for
system
managers

Available at:

<http://efc.sog.unc.edu/>





Typical Rate Structure

Fixed Base Charge (Minimum Charge)

with or without a consumption allowance

+

Variable Volumetric Charge (determined
by the water volume billed)

Can be structured in many ways



Example: Bozeman (Sept 2016 water rates)

\$15.39 + \$5.01

Includes first 200 cubic feet

+

+\$2.50/ccf between 201-800 cubic feet

+\$2.69/ccf between 801-1,500 cubic feet

+\$3.17/ccf for above 1,500 cubic feet

Increasing block rates

Source: City of Bozeman's website:

<http://www.bozeman.net/Departments/Finance/Utilities/Utility-Information-and-Rates>

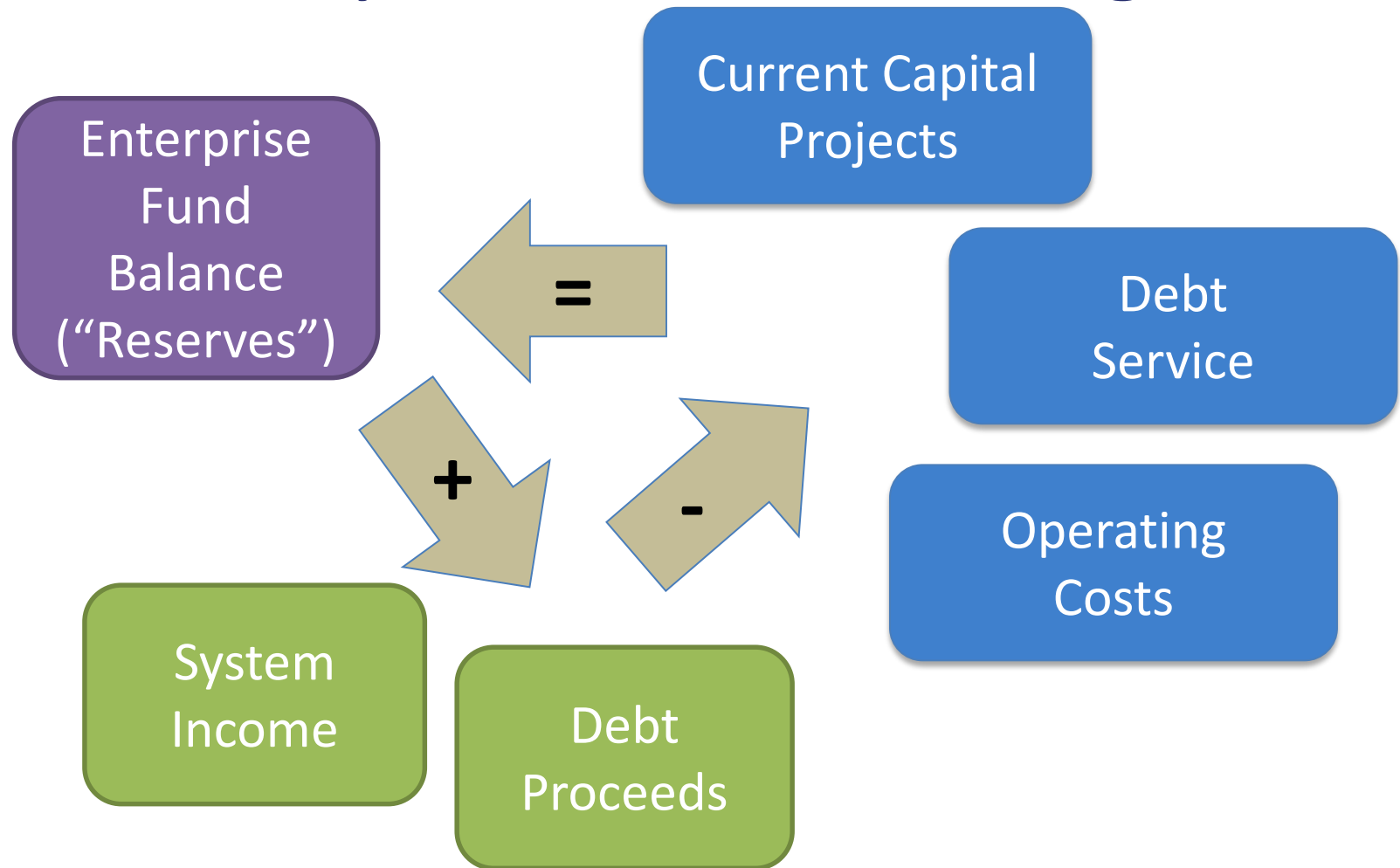
www.efcnetwork.org



Reserves



Water System Finance Diagram





Reserve Account(s)

- If revenues exceed costs, the extra money can go into one or more reserve account(s) specifically for the water system
- Can set up specific reserves for narrower purposes (designated reserves)
- Examples: unrestricted, rate stabilization, rainy day, capital reserve, etc.
- If you include depreciation as a cost, this is where that money would go



Many Types of Reserve Funds

- **Capital Reserve Fund**—Infrastructure rehabilitation and replacement
- **Repair Fund**—Known, ongoing maintenance issues
- **Emergency Fund**—Unknown, unanticipated maintenance issues
- **Rainy Day Fund**—Unexpected revenue shortfalls



How Much Do You Need In Your Reserves?

- It depends
(see <http://efc.web.unc.edu/2013/02/12/right-sizing-reserve-funds/>)
- Enough to pay for your most expensive piece of equipment?
- Enough to cover your costs if you had no revenue for two months?
- Enough to cover the projects in your capital improvement plan?



<http://efc.web.unc.edu/2015/06/24/days-cash-on-hand/>



Key Financial Indicators for Water and Wastewater Systems: Days of Cash on Hand

JUNE 24, 2015 / GLENN BARNES / COMMENTS OFF ON KEY FINANCIAL INDICATORS FOR WATER AND WASTEWATER SYSTEMS: DAYS OF CASH ON HAND

 Print  PDF

In previous posts, we outlined how to use the financial statements of a water or wastewater system to calculate the [key financial indicators](#) of [operating ratio](#) (a measure of self-sufficiency) and [debt service coverage ratio](#) (a measure of a



Days of Cash on Hand

$$= \frac{\text{Unrestricted cash and cash equivalents}}{(\text{Operating Expenses} - \text{Depreciation}) / 365}$$



Transfers between General Fund and Enterprise Fund

- OK if paying for services rendered or payment in lieu of taxes
- Maybe OK if loaning money that *gets paid back*
- Generally not OK if just moving money between the two funds when one falls short (i.e. subsidizing)



Smart Management for Small Water Systems

*under a Cooperative Agreement with the US EPA

- The EFCN will provide **training** and **free direct assistance** to small public water systems (<10,000 people) in all fifty states and five territories to help local water systems achieve and maintain compliance with the Safe Drinking Water Act.
- Trainings and direct assistance available on:
 - Asset Management/Capital Planning
 - Financial Planning and Rate Setting
 - Water Loss Reduction
 - Water System Collaboration
 - Energy Management
 - Funding Coordination/Availability, and
 - Managerial and Financial Leadership



We Can Help

Direct assistance available from Environmental Finance Centers, *free!*

<http://efcnetwork.org/> (Click on Assistance)

Thank you! Please fill out the evaluation form.

Shadi Eskaf

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