Smart Management for Small Water Systems

Rates and the Importance of Reserves for Your Water System

September 28, 2017 | Great Falls, MT

Montana League of Cities and Towns Annual Conference

www.efcnetwork.org

UNC ENVIRONMENTAL FINANCE CENTER

EFCN environmental finance center network

American Water Works Association

This presentation is made possible under a cooperative agreement with the U.S. EPA.

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 Program 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, blogs.

The Small Systems Program Team

- Environmental Finance Center at The University of North Carolina at Chapel Hill
- Environmental Finance Center at Wichita State University
- EFC West
- New England Environmental Finance Center at the University of Southern Maine
- Southwest Environmental Finance Center at the University of New Mexico
- Syracuse University Environmental Finance Center
- Environmental Finance Center at the University of Maryland
- American Water Works Association (AWWA)

UNC Environmental Finance Center

Wichita State University Hugo Wall School of Public Affairs Environmental Finance Center

EFCWest Environmental Finance Center West

New England Environmental Finance Center

Southwest Environmental Finance Center

Environmental Finance Center Syracuse University

University of Maryland Environmental Finance Center

American Water Works Association

Areas of Expertise

- Asset Management
- Rate Setting and Fiscal Planning
- Leadership Through Decision-making and Communication
- Water Loss Reduction
- Energy Management Planning
- Accessing Infrastructure Financing Programs
- Workforce Development
- Water Conservation Finance and Management
- Collaborating with Other Water Systems
- Resiliency Planning
- Managing Drought

Two Sessions Today

Rates and the Importance of Reserves

1:30pm – 2:30pm, Britain Room

Capital Planning and the Drinking Water SRF

4:45pm – 5:30pm, Britain Room

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.

Characteristics of Water System Enterprises

- Capital intensive
- Diverse use charges, fees and pricing strategies
- Financial structure varies from operational structure
- Self-regulated monopolies
- Impacts public health and environmental protection

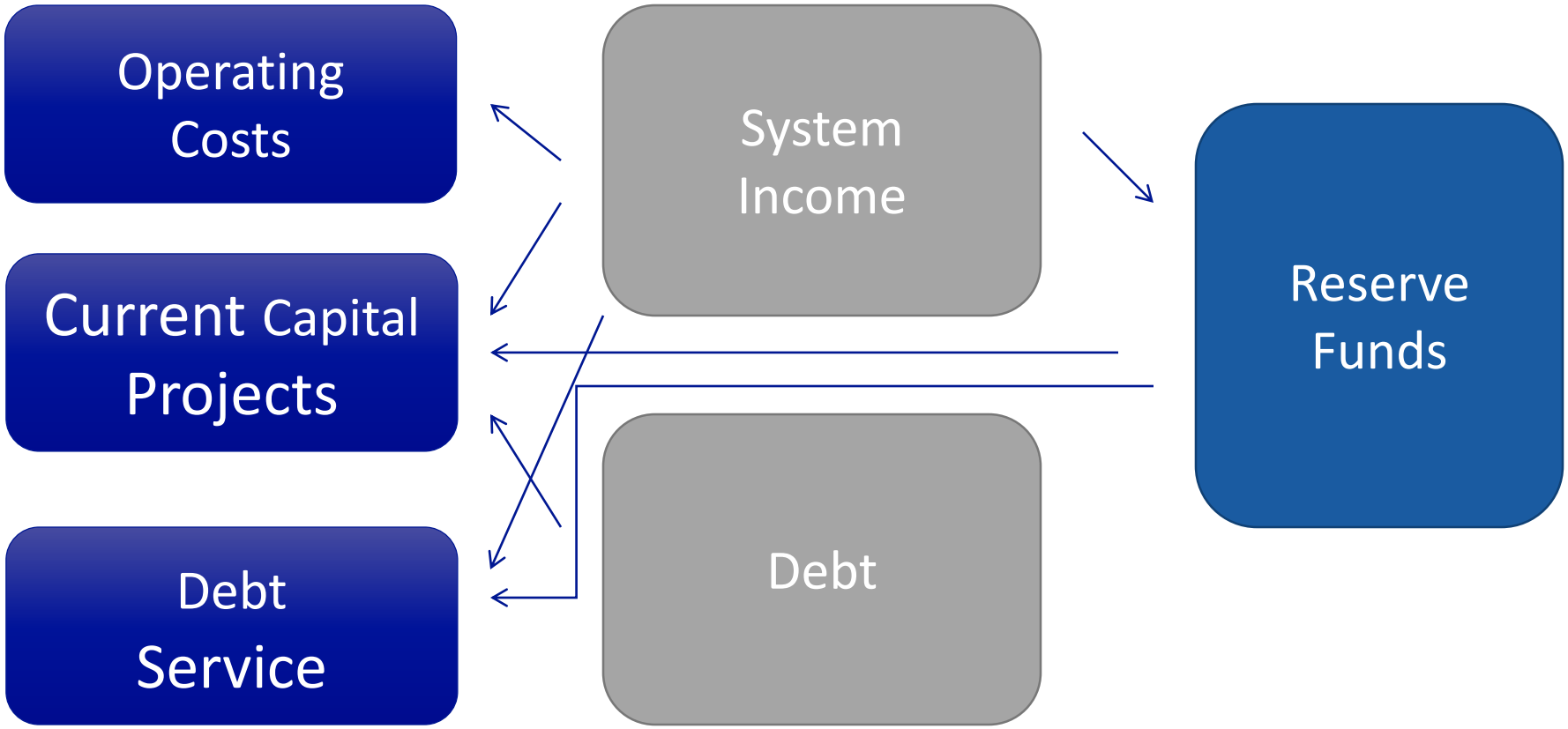
Guiding Principle for Enterprise Funds

Self-sufficiency

Revenues collected = Costs expended

(in a given year or over time)

Water System Finance Diagram



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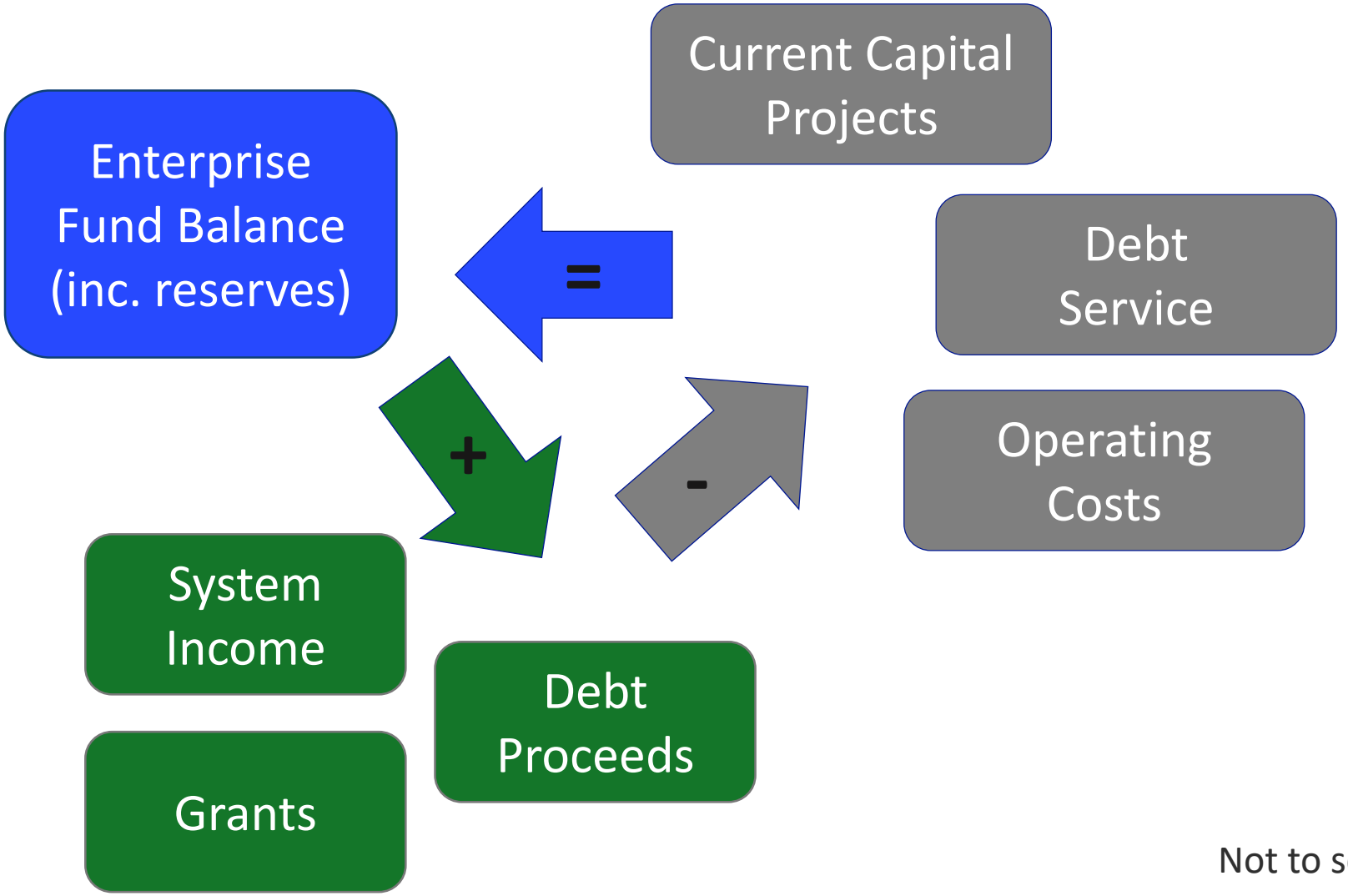


Not to scale

Three Types of Costs

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

Understanding Operating Costs

- What you need to run your business day in and day out

- What are your operating cost categories?
  - Personnel
  - Water bulk purchases
  - Chemicals
  - Office equipment
  - Energy
  - Supplies
  - Lab tests
  - Etc.

Understanding Capital Costs

- The “big stuff”
- Rehabilitation & replacement of existing infrastructure
- New infrastructure as needed to serve your customers

Understanding Debt Service

- What you owe on loans and bonds, paid back on a regular schedule

Three 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 or transfers from the General Fund.
- Debt Proceeds — Money from bonds and loans
- Grants — Highly competitive and limited

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 FY2015 from water systems (excluding wastewater)?

$128 million

Source: U.S. Census Bureau's "State and Local Government Finances by Level of Government and by State: 2014-15"

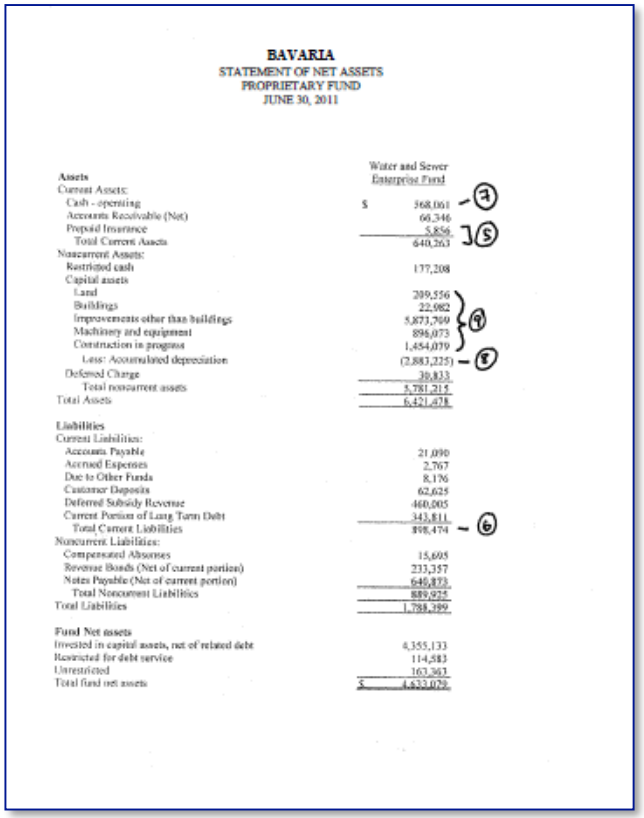
This is a little less than $19/month for each person served by a local government community water system

(with lots of assumptions)

How to Tell if Revenues > Expenditures?

Look at the (past few) audited annual financial statements.

Did **Total Operating Revenues** exceed **Total 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)	66,346
Prepaid Insurance	5,856
Total Current Assets	640,263
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	30,833
Total noncurrent assets	5,781,215
Total Assets	6,421,478
Liabilities	
Current Liabilities:	
Accounts Payable	21,090
Accrued Expenses	2,767
Due to Other Funds	8,176
Customer Deposits	62,625
Deferred Subsidy Revenue	460,005
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)	233,357
Notes Payable (Net of current portion)	640,873
Total Noncurrent Liabilities	889,925
Total Liabilities	1,788,399
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	163,363
Total fund net assets	$ 4,633,079

How did Montana do?

In 2015, Montana local governments spent $148 million on their water systems, which exceeds the $128 million in revenue.

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

Source: U.S. Census Bureau's "State and Local Government Finances by Level of Government and by State: 2014-15"

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 and polluters pay for their pollution
- Ability to pay is recognized and addressed
- Simple

How Much Does “Full Cost Pricing” Cover?

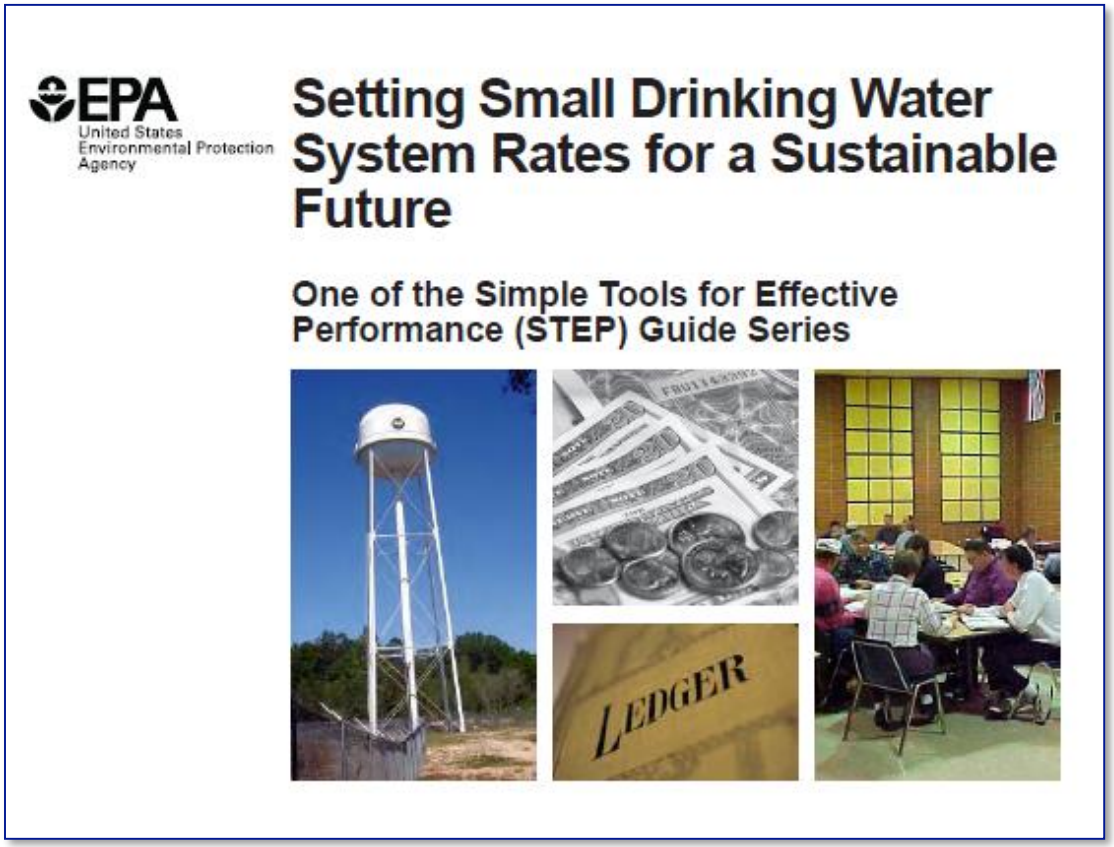
- Operations & maintenance expenditures
- Taxes and accounting costs
- Contingencies for emergencies
- Principal and interest on long-term debt
- Reserves for capital improvement
- Source water protection

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.

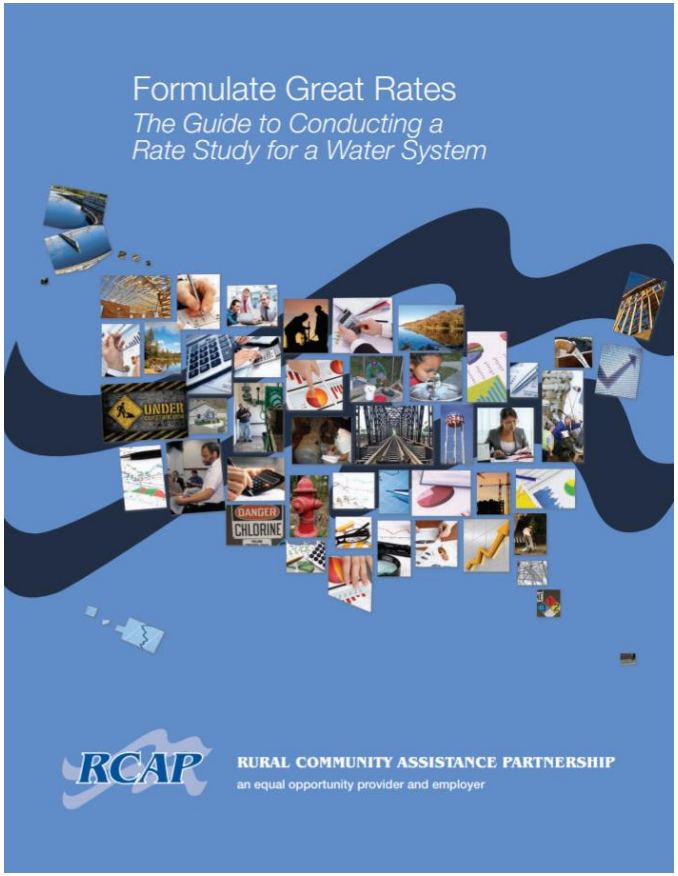
A Simpler Version



https://www.epa.gov/dwcapacity/resources-setting-small-system-water-rates-0

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

Another Version by RCAP



- When to review rates
- Spreading rate increases over customers
- Setting final base and flow rates
- Adjusting rates

With worksheets.

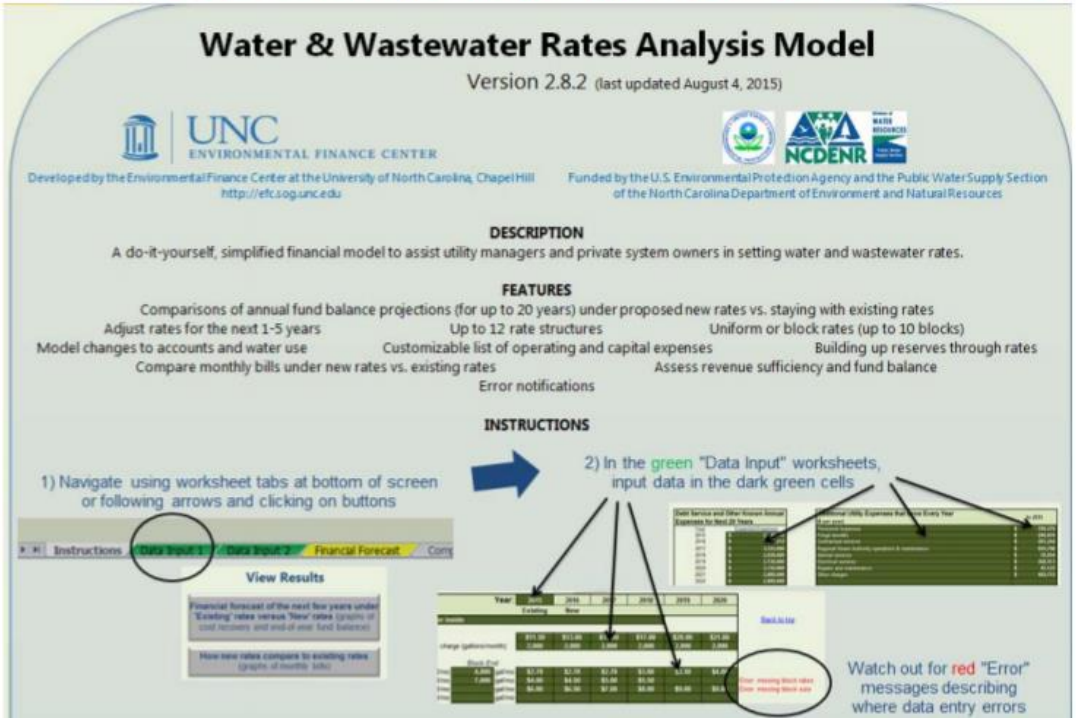
http://www.map-inc.org/uploads/5/2/2/1/52214049/formulate-great-rates.pdf or on the W2ASACT website.

Water & Wastewater Rates Analysis Model

http://efc.sog.unc.edu or http://efcnetwork.org

Find the most up-to-date version in Resources / Tools

Free, simplified Excel tool allowing you to model and compare two rate structures on your projected fund balance



Revenue Generation Isn't the Only Objective

Will our rates provide sufficient cost recovery?

Are we following the applicable laws?

Will revenues be resilient to changing water demands?

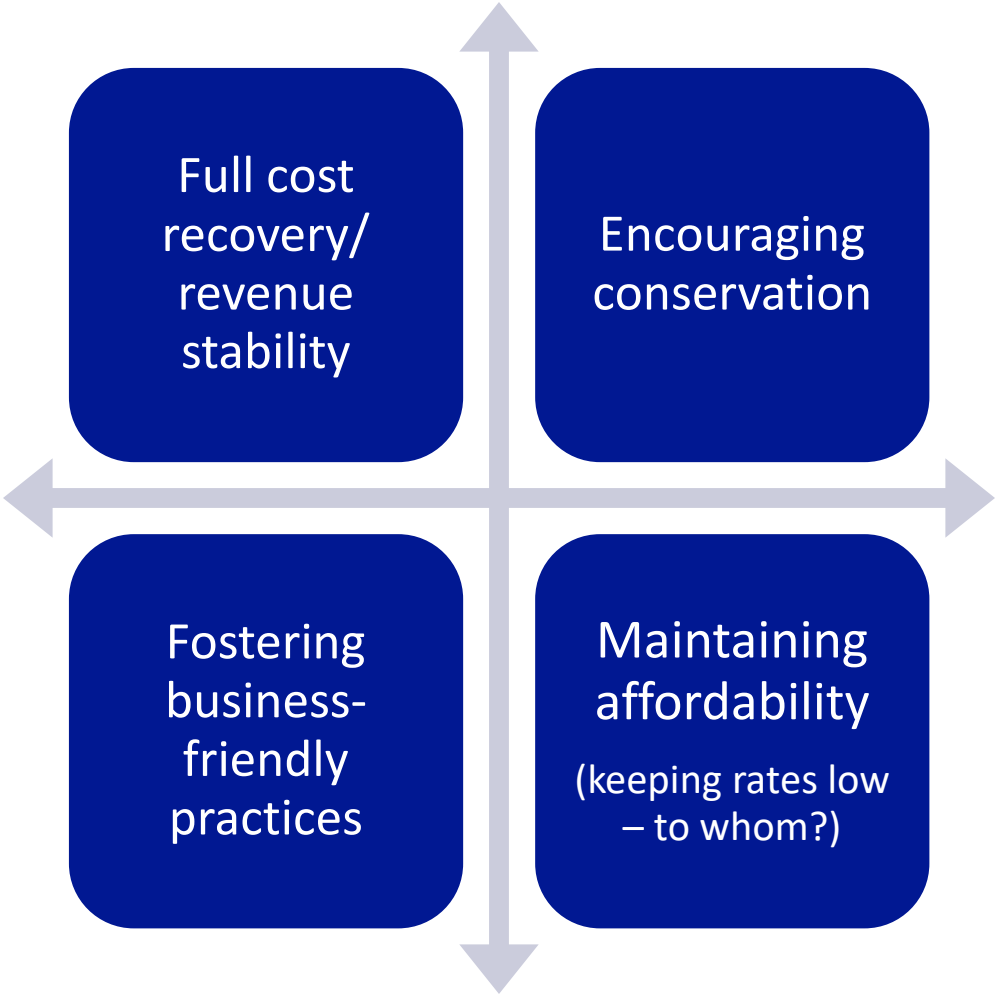
Are we allocating the costs to the right customers?

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.

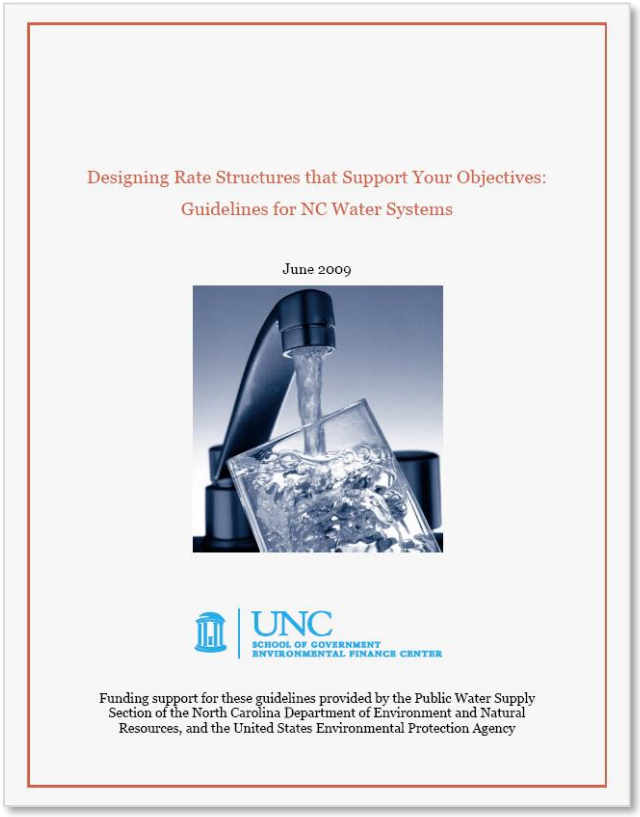
Elements of Rate Structure Designs

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

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: City of Great Falls' water rates for regular residential customers (June 2017)

$7.56/month

Based on meter size.

Does not include consumption allowance.

+

+$1.47/ccf between 1-300 cubic feet

+$2.46/ccf for above 300 cubic feet

Increasing block rates.

Source: City of Great Falls' website: https://greatfallsmt.net/fiscalservices/2016-water-sewer-and-storm-drain-service-rates

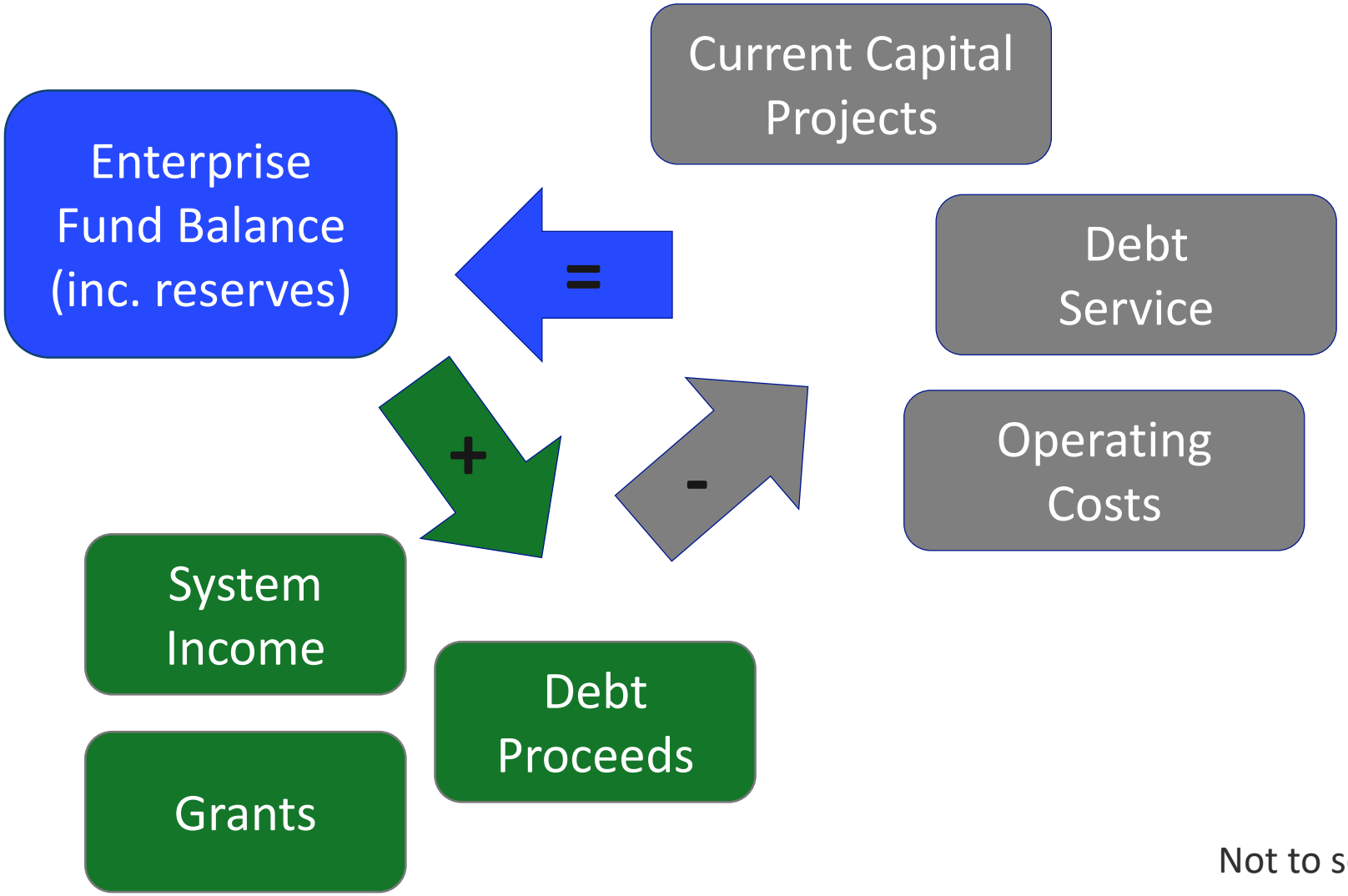
Methods to Budget for Capital Costs

- Create and maintain a Capital Improvement Plan
- “Fund” your depreciation, with a little extra
- Estimate from past expenses, but adjust for the future

Do NOT ignore capital costs and only budget for O&M. Every utility has capital costs.

Reserves

Water System Finance Diagram



Not to scale

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

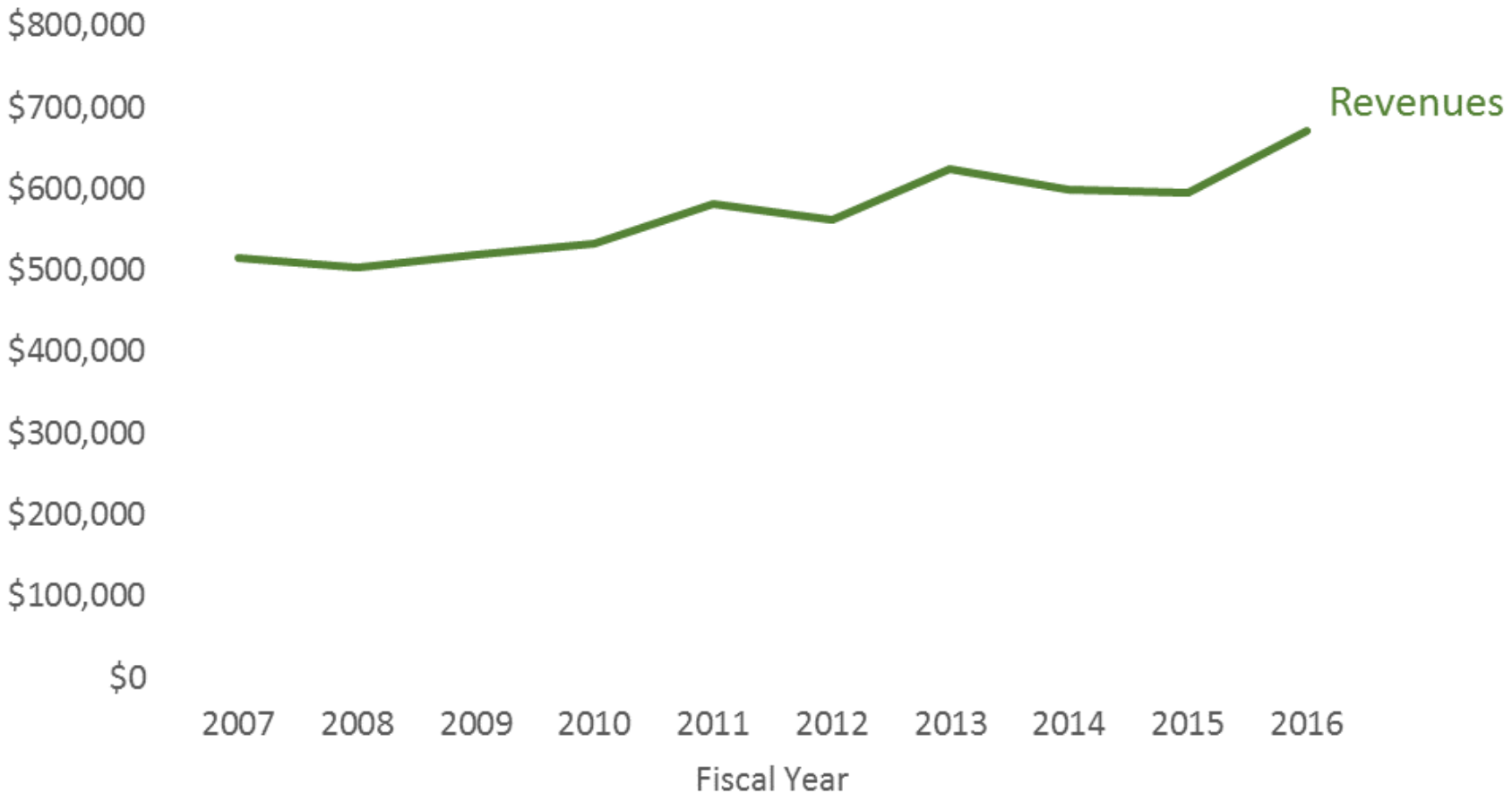
Many Types of Reserve Funds

- 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

Budgeting for the Future

- Capital rehab or replacement
- System expansion
- Costs always going up
- Changes to revenue, expected or not
- Think 5-10 years out

Why is Maintaining a Reserve Important?



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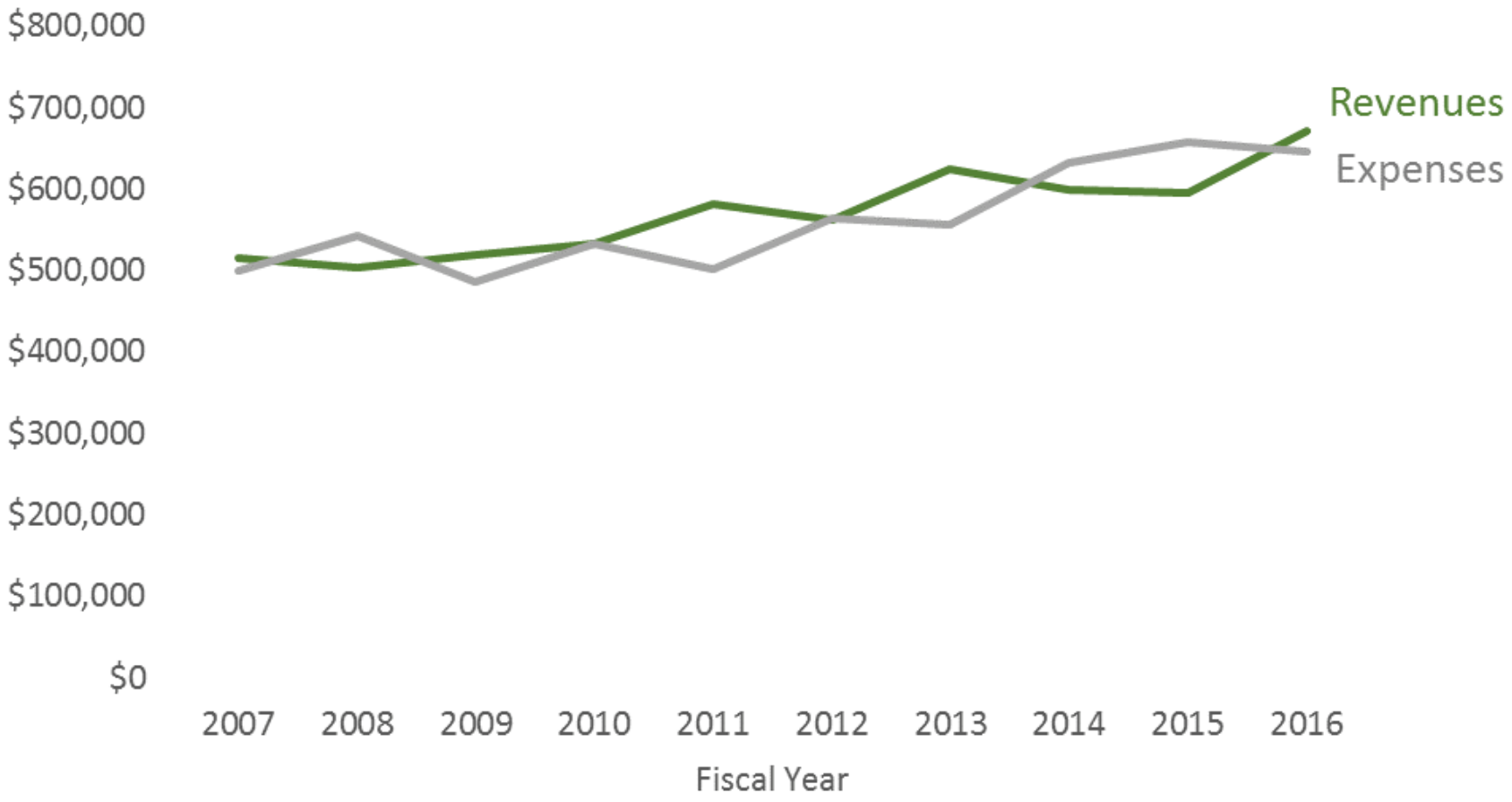
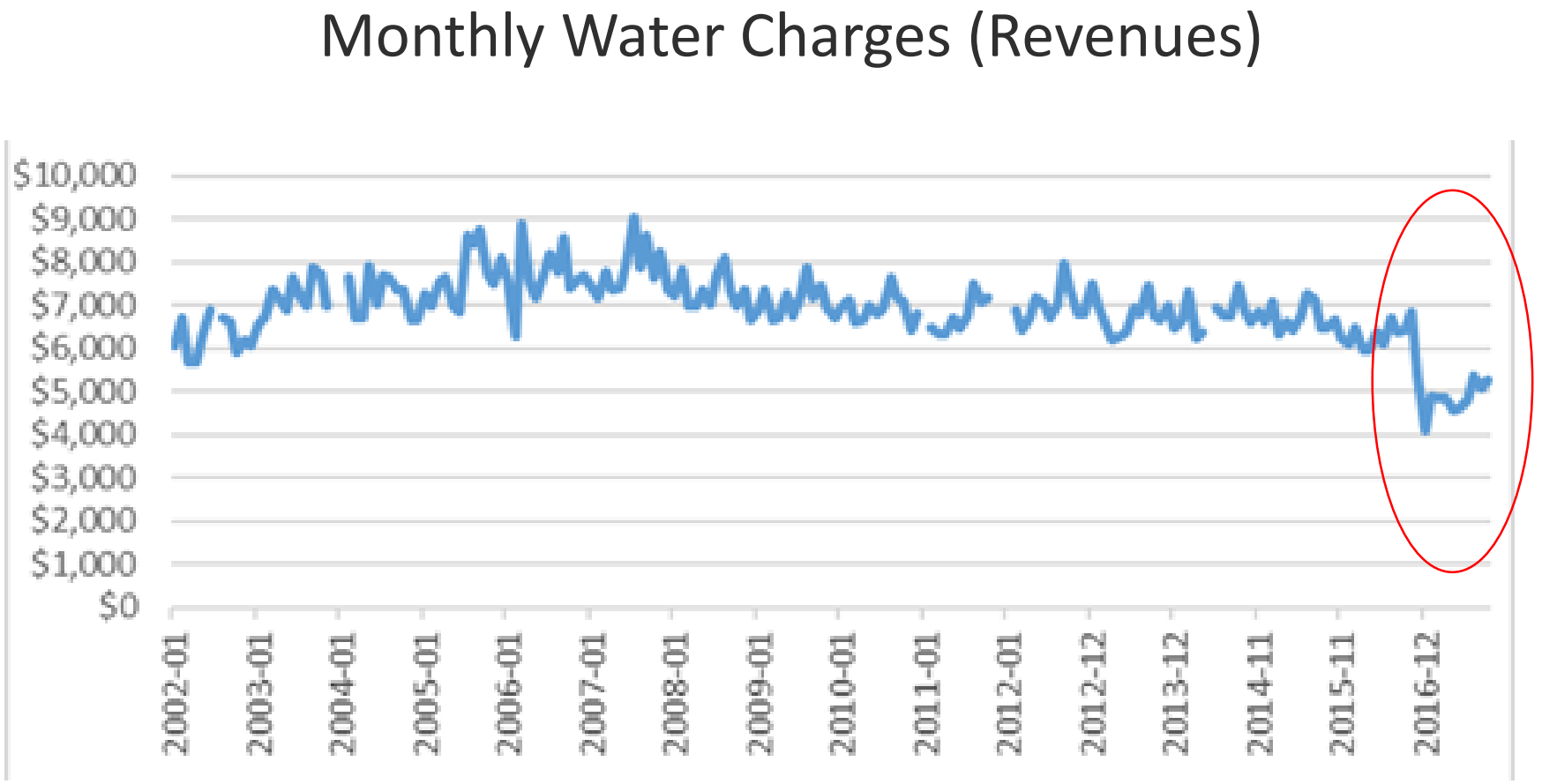


Another Situation



The Importance of Reserves

- Manage short-term cash flow
- Manage longer-term revenue fluctuations
- Smooth out rate increases
- Save for emergencies/unexpected situations
- Save for future capital expenses
- Satisfy funders' requirements
- Better credit rating / ability to borrow
- Piece of mind

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

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

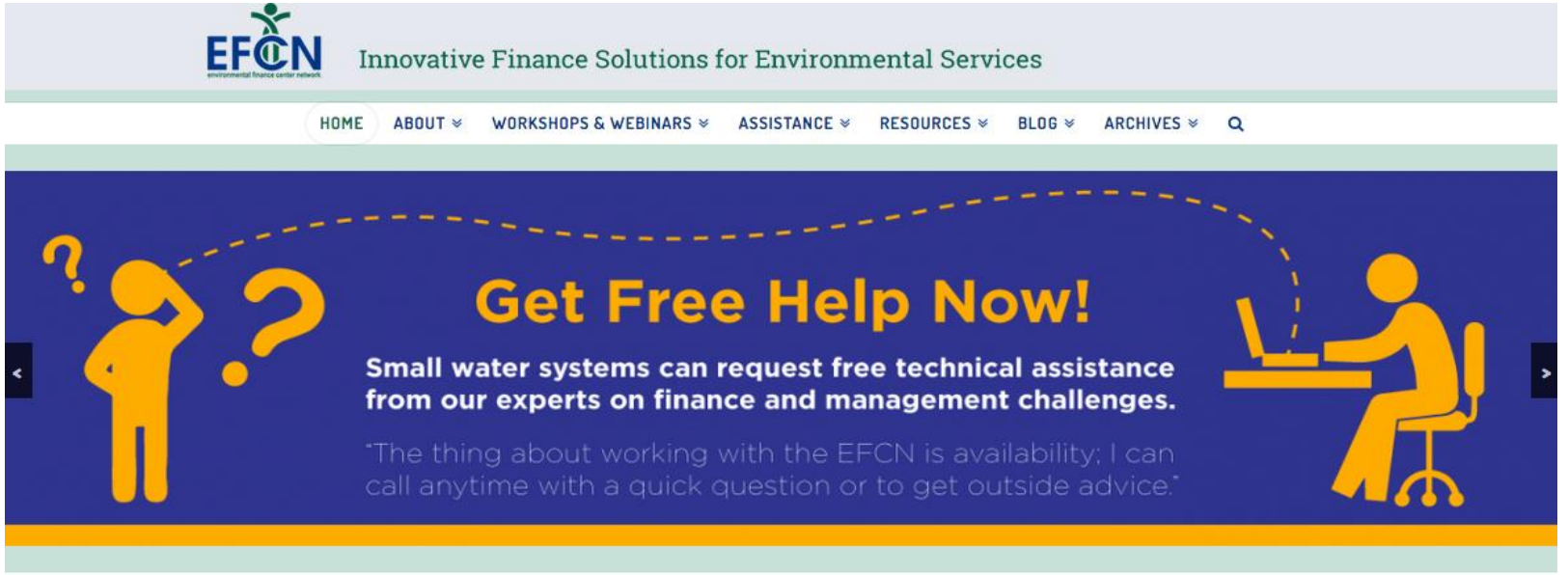
Utilities often want at least 180 days cash on hand.
Some utilities want at least 365 days (some have as high as 2 years).

Transfers between General Fund and Enterprise Fund

- OK if paying for services rendered or payment in lieu of taxes (should not be recorded as a “transfer”)
- 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)

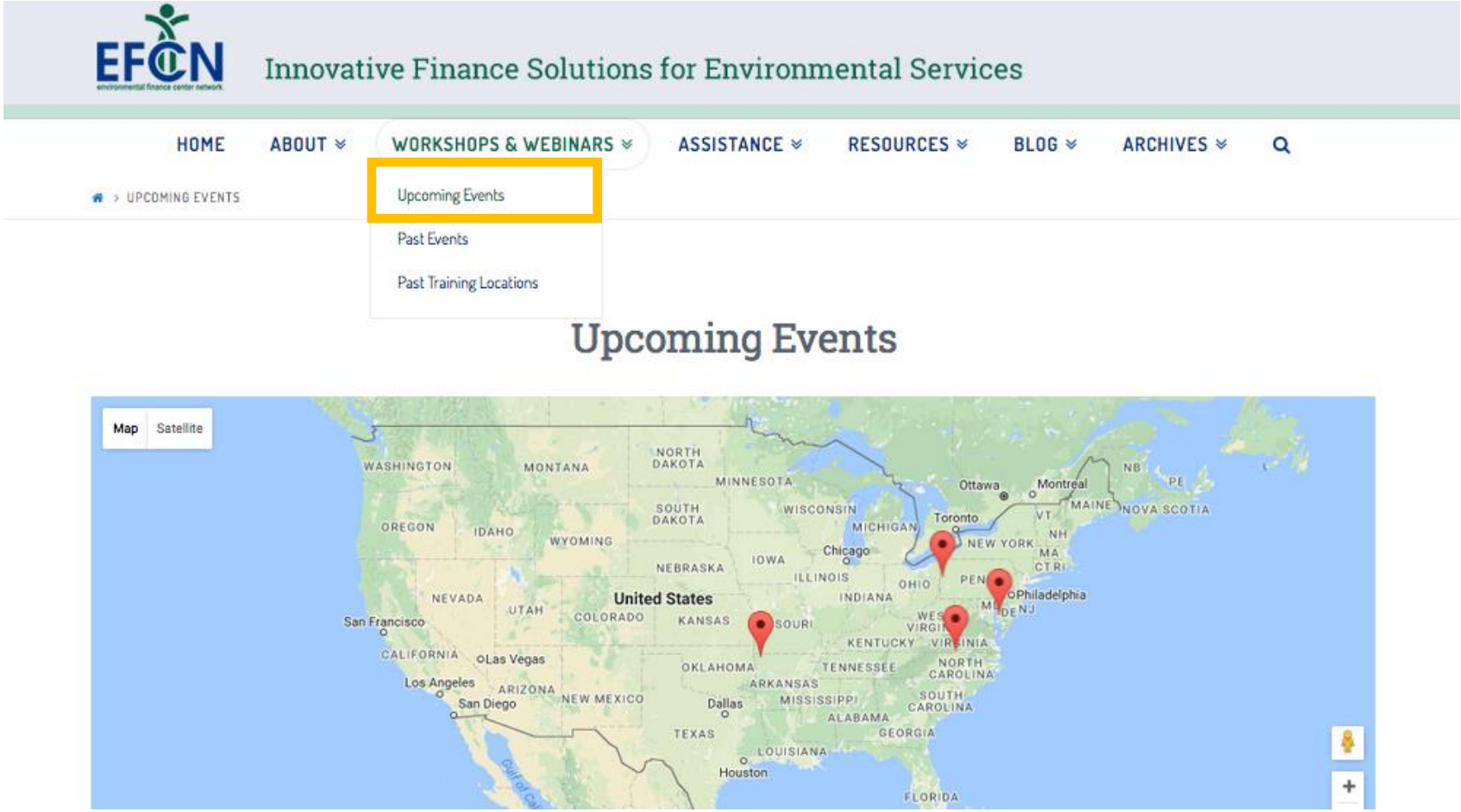
Visit the EFCN Website – *www.efcnetwork.org*

for more information on upcoming events, funding, and resources.



Upcoming Events Calendar

Select “Upcoming Events” under the Workshops & Webinars Tab.

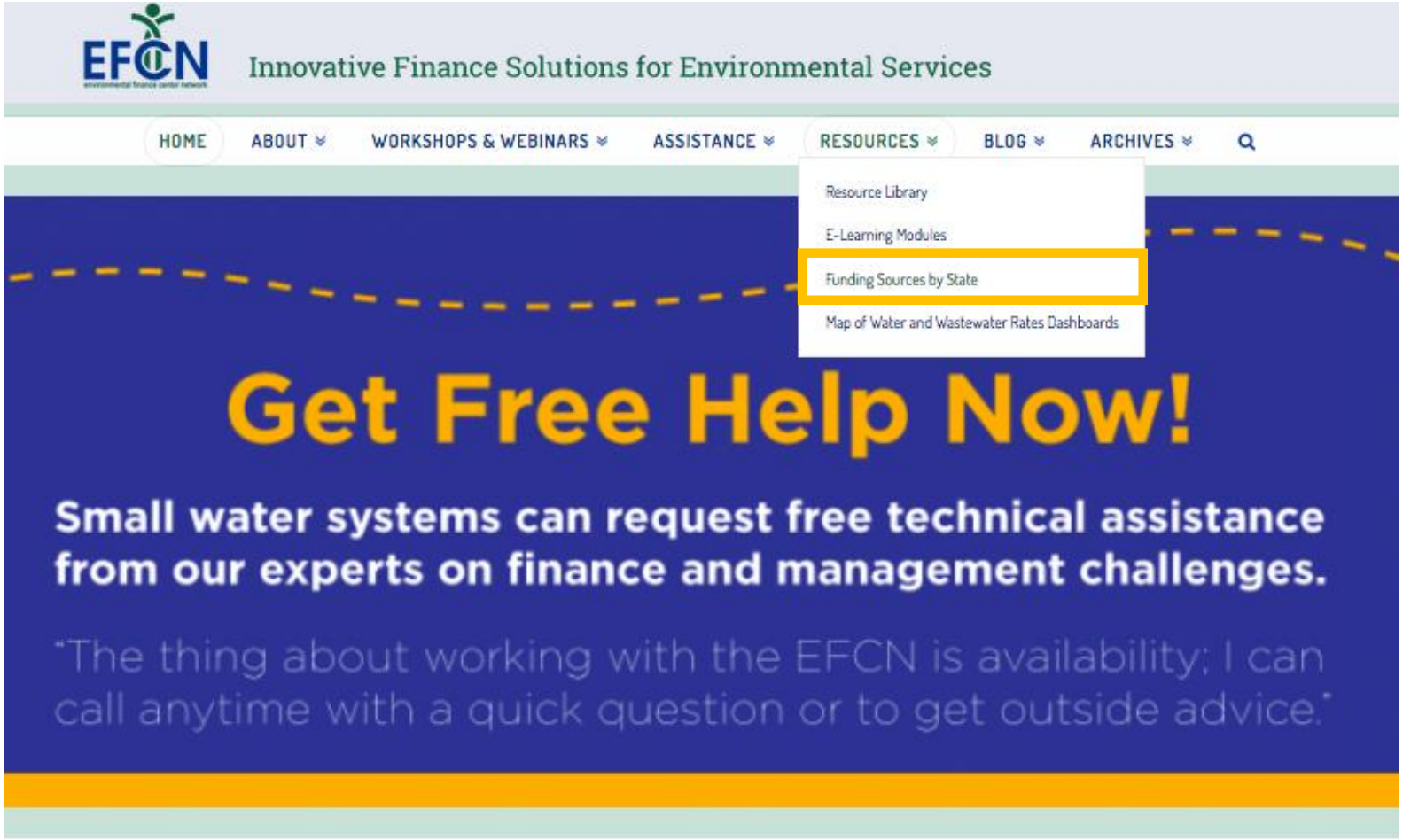


= In Person Event = Webinar

Type	Date/Time	Event
	03/09/2017 2:00 pm - 3:00 pm	WEBINAR I Preparing Winning Financing Applications for Water Infrastructure Projects
	03/22/2017 2:00 pm - 3:00 pm	WEBINAR I Water Audits and Water Loss Control: Entering Your Data into the Spreadsheet
	03/30/2017 9:00 am - 4:30 pm	Maryland I Rates and Finance Workshop for Small Water Systems *Easton Utilities, Easton MD*
	04/04/2017 1:00 pm - 2:00 pm	WEBINAR: Workforce Development: An Overview of Key Components
	05/11/2017 9:00 am - 4:30 pm	Virginia I Rates and Finance Workshop for Small Systems *The Institute for Advanced Learning and Research, Danville Virginia*
	05/25/2017 9:00 am - 4:30 pm	Arkansas I Rates and Finance Workshop for Small Water Systems *Beaver Water District, Lowell AR*
	09/13/2017 9:00 am - 4:30 pm	Pennsylvania I Rates and Finance Workshop for Small Water Systems *Pennsylvania American Water Co, New Castle PA*

Funding Tables By State

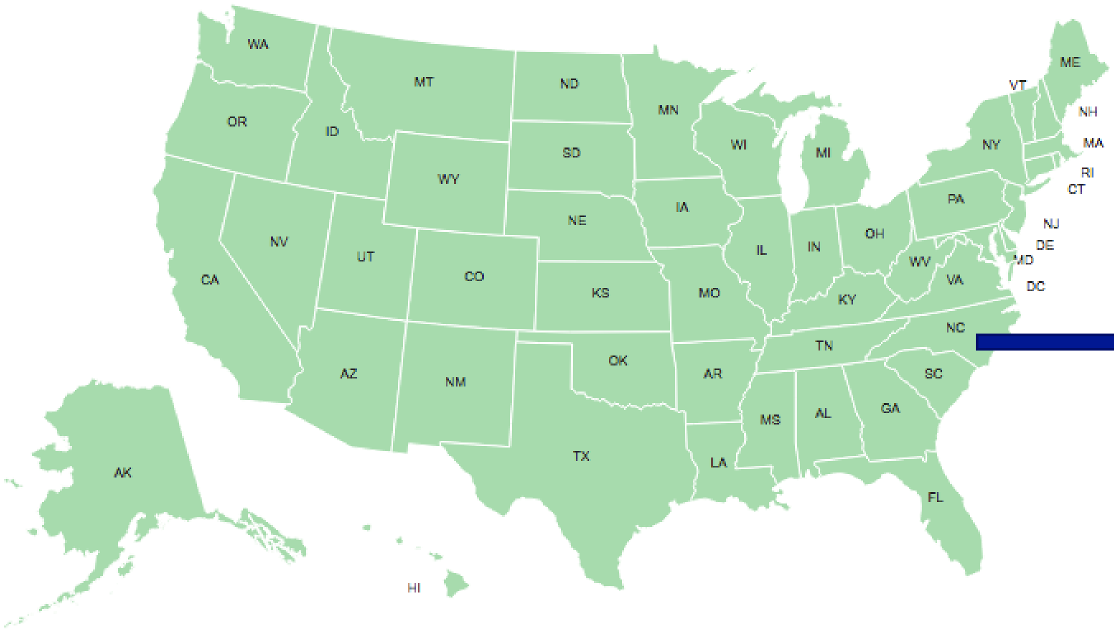
Select “Funding Sources by State” under the Resources Tab.



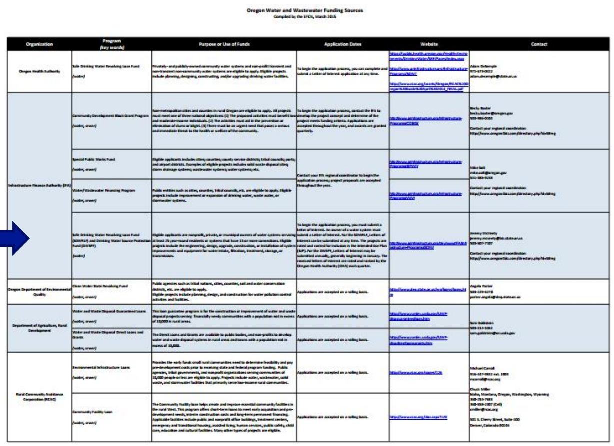
Funding Sources by State

Note: Some states may have additional resources listed below the map.

Click on the map below to view funding sources for each state:

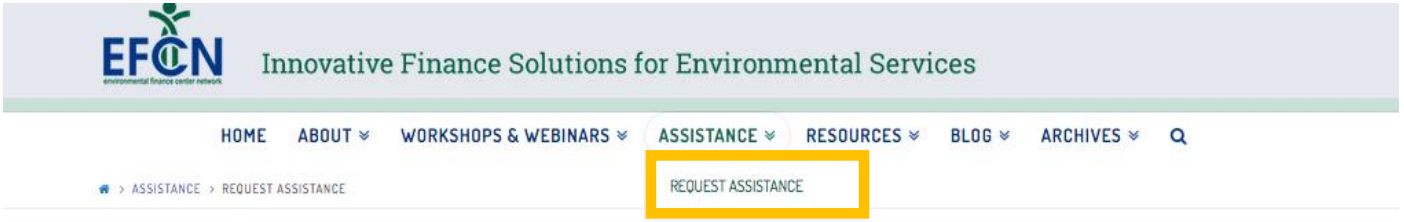


Click on an individual state to view funding table.



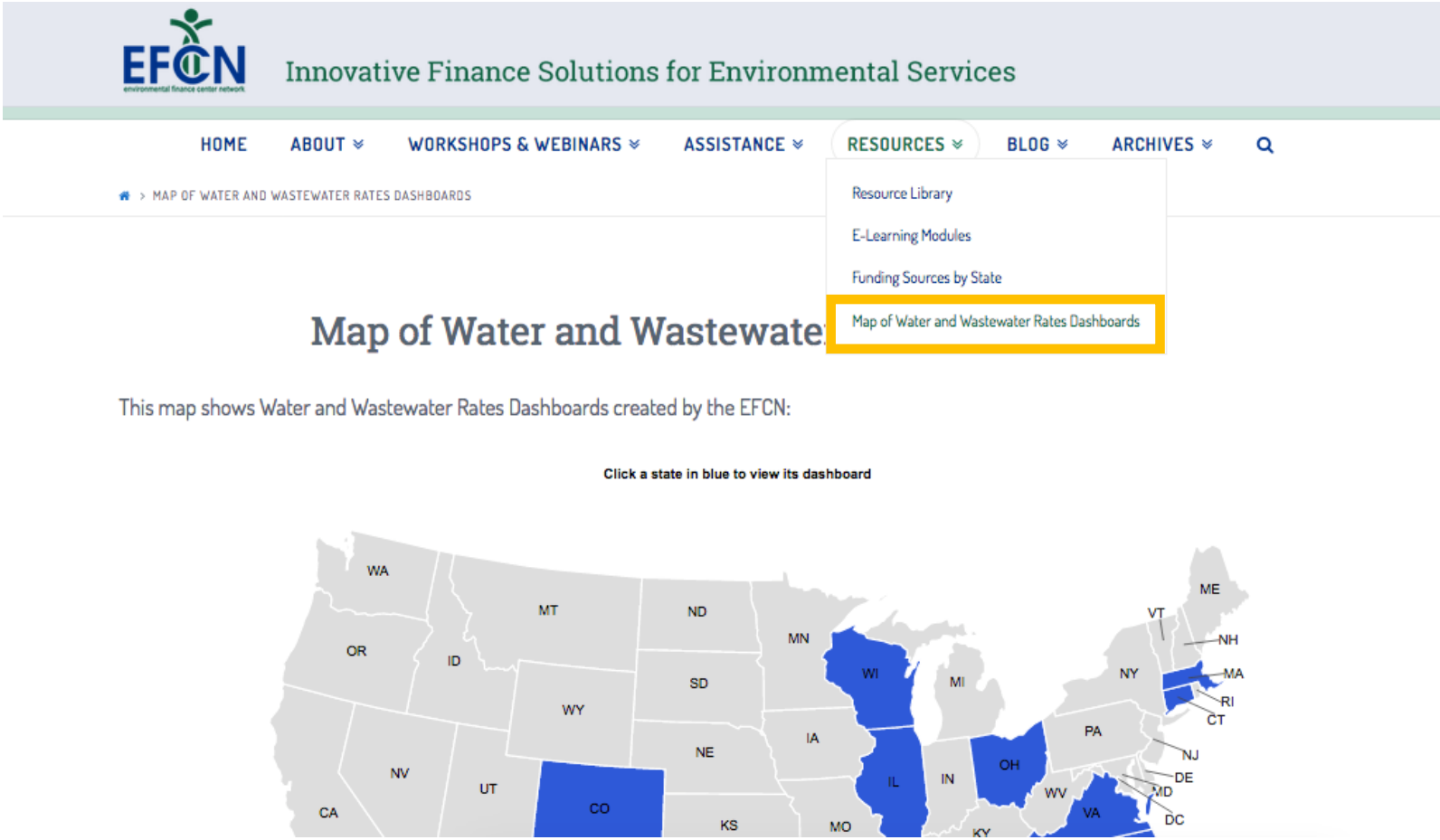
Request Technical Assistance

Select “Request Assistance” under the Assistance Tab off the EFCN homepage to access and submit the TA request form electronically.



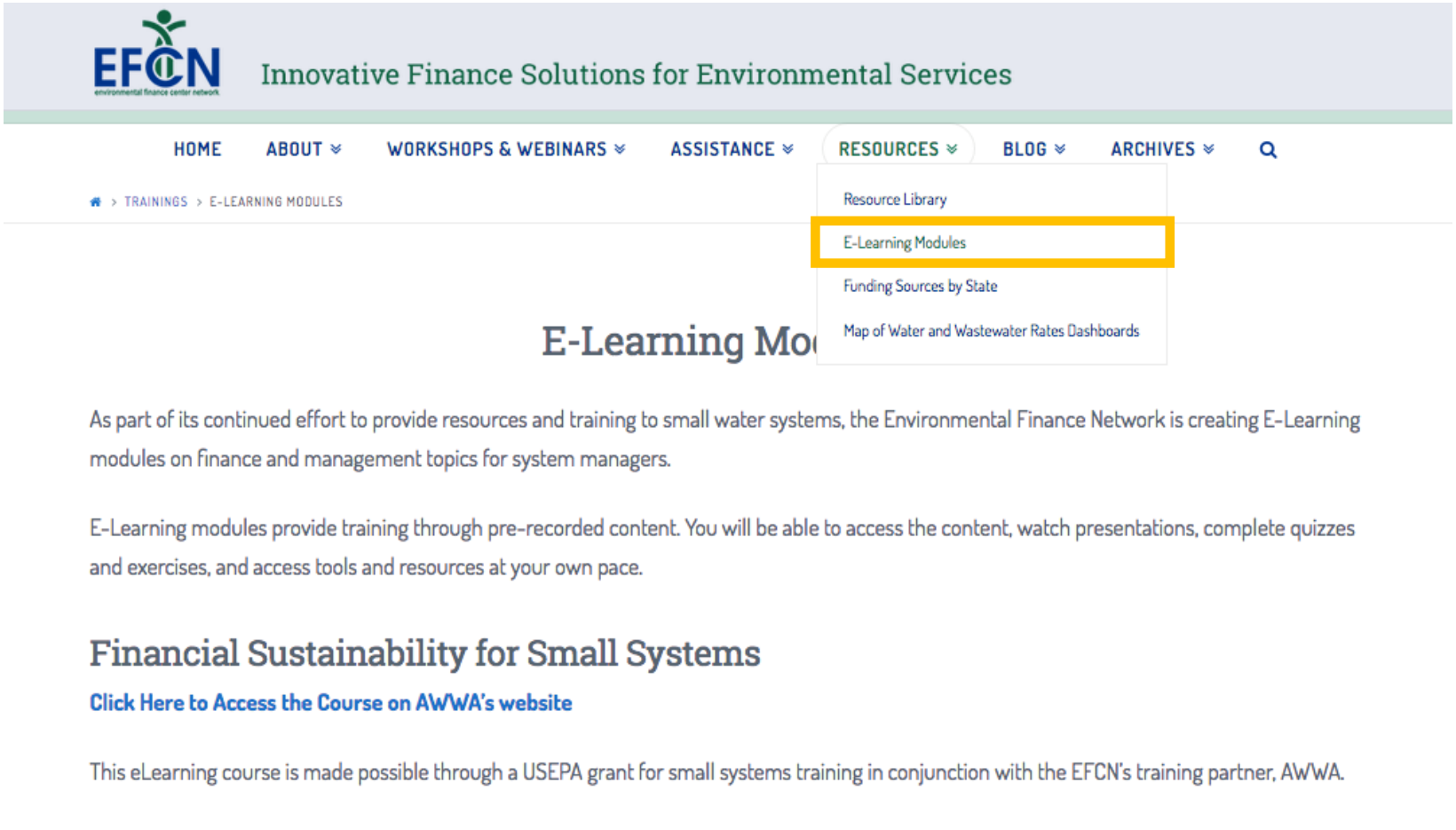
Rates Dashboards

Select “Map of Water and Wastewater Rates Dashboards” under the Resources Tab, and click on any state in blue to view its dashboard.



E-Learning Modules

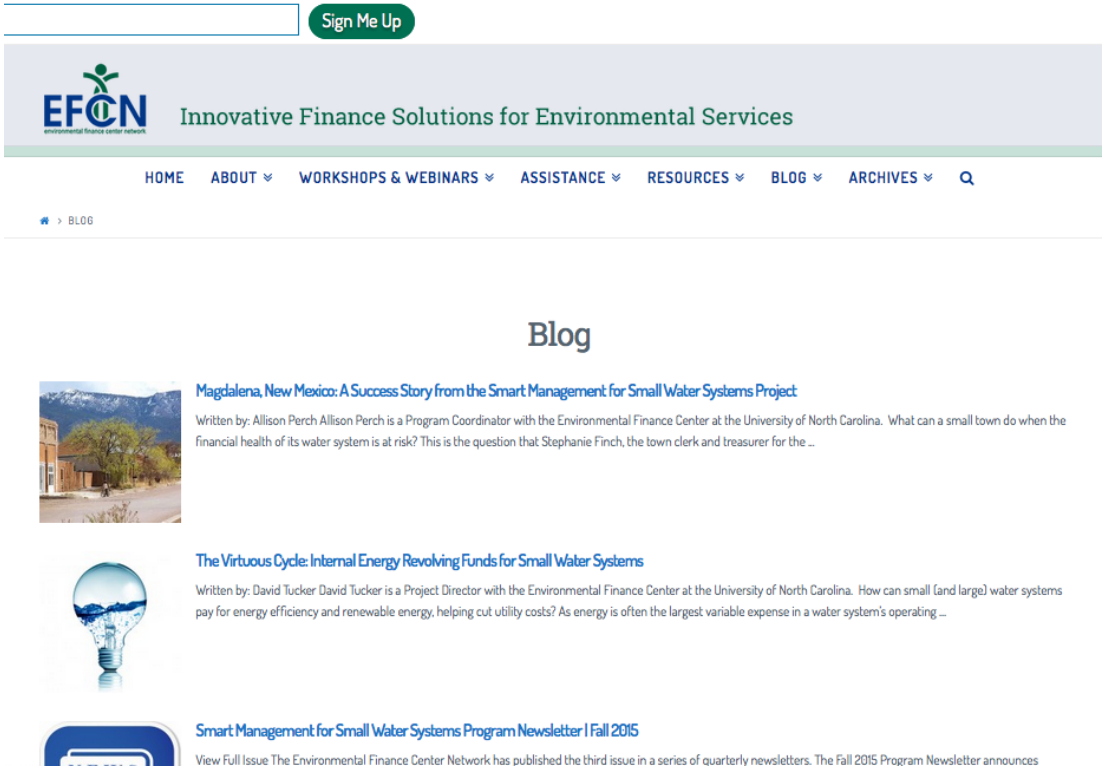
Select “E-Learning Modules” under the Resources Tab off the EFCN homepage.



Small Systems Blog

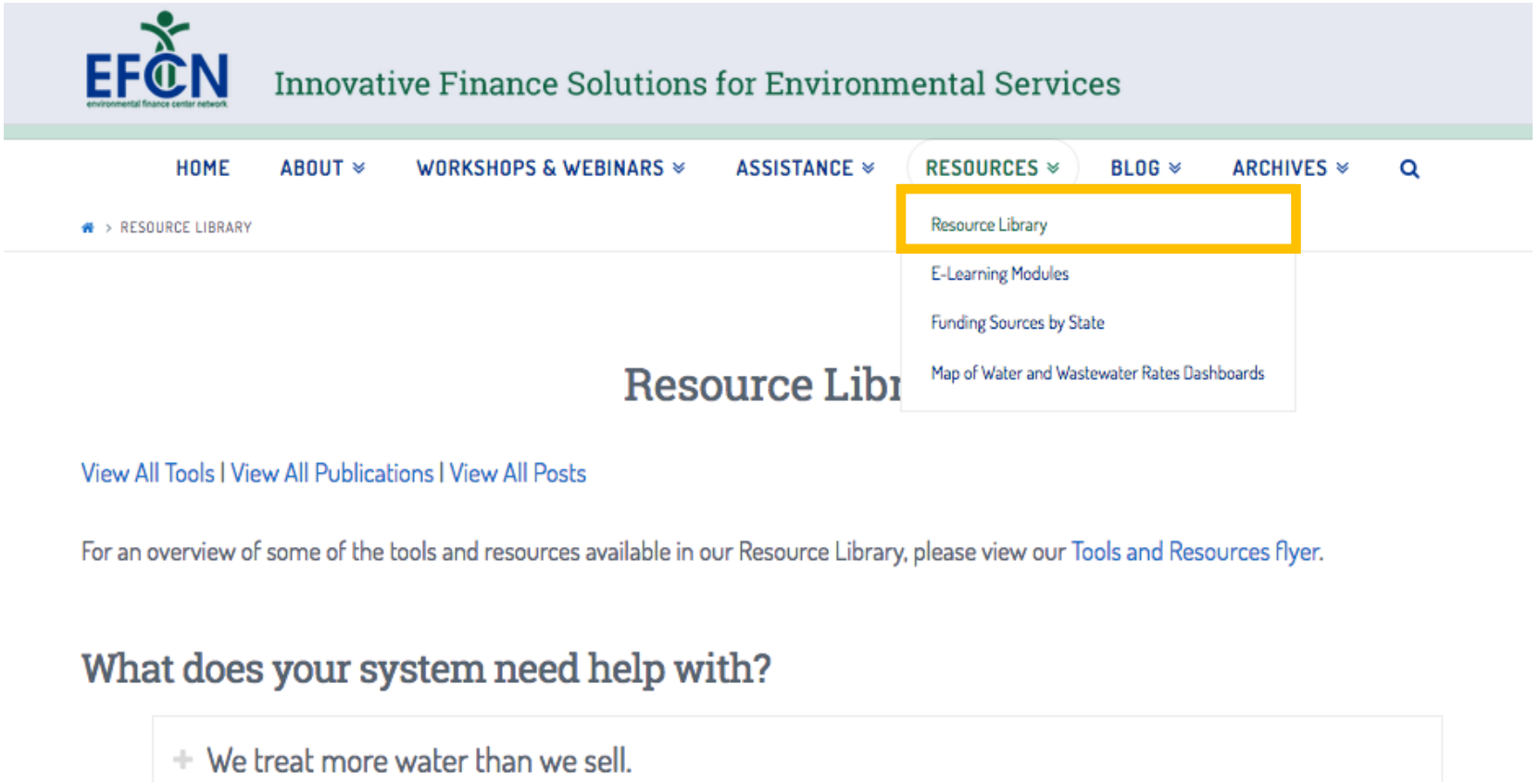
Learn more about water finance and management through our Small Systems Blog! Blog posts feature lessons learned from our training and technical assistance, descriptions of available tools, and small systems “success stories.”

efcnetwork.org/small_systems_blog/



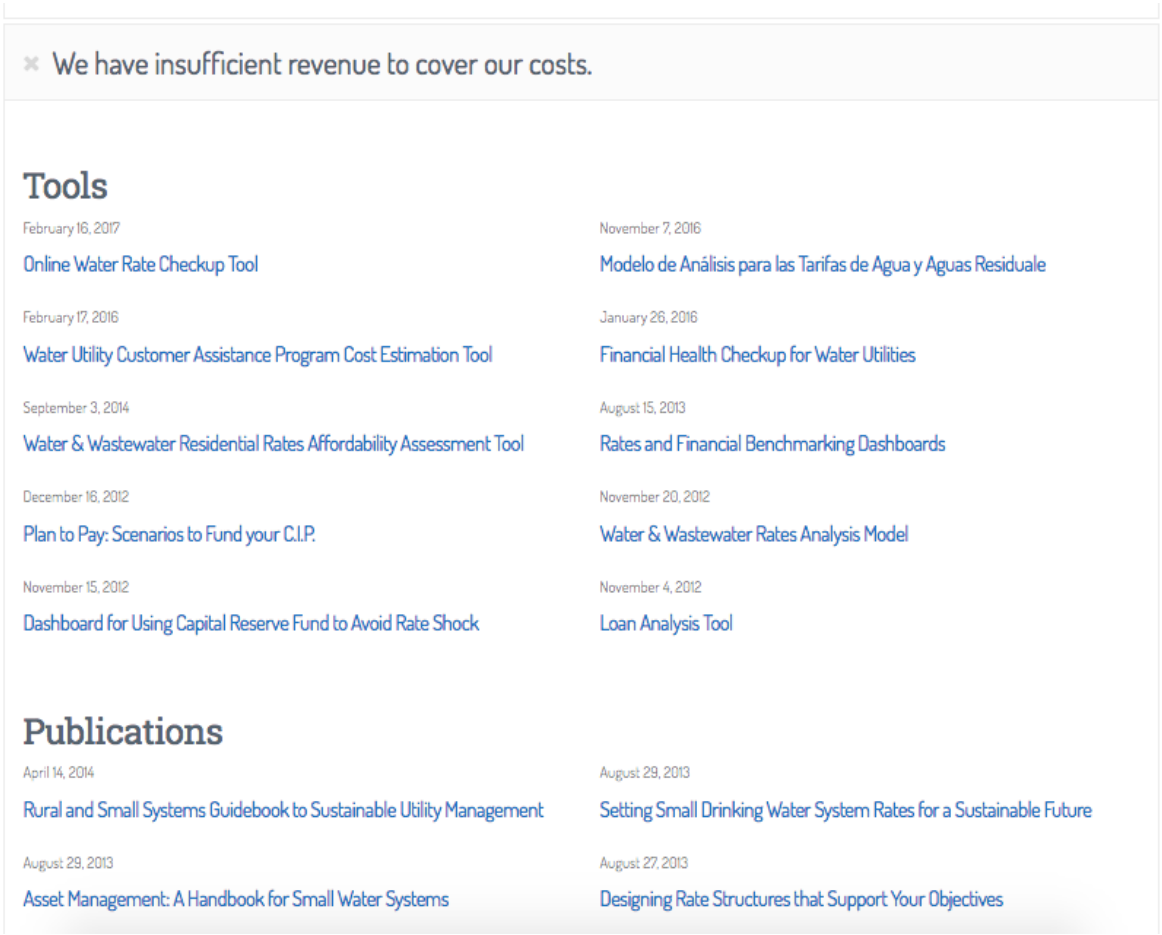
Resource Library

Select “Resource Library” under the Resources Tab off the EFCN homepage.



Resource Library Continued…

Click on a what your system needs help with to reveal tools and publications related to that topic.



Smart Management for Small Water Systems

Thank you.

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efc.sog.unc.edu and efcnetwork.org

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