



Smart Management for
Small Water Systems

WEBINAR: How to Navigate the SRF Program in Utah

Monday, November 14, 2016
1:00 – 3:00 PM MST

This program is made possible under a
cooperative agreement with EPA.



American Water Works
Association



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**DRINKING
WATER**



UNC
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Logistics

At the top right corner of your screen:

Show your control panel to submit questions and see answers

All phones/microphones are muted for the duration of the webinar.

Toggle between full screen/window screen view

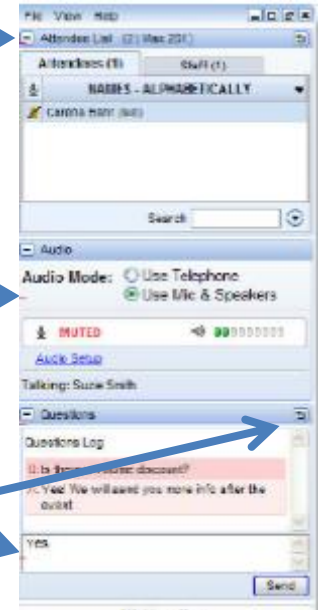


Control Panel:

Attendee List

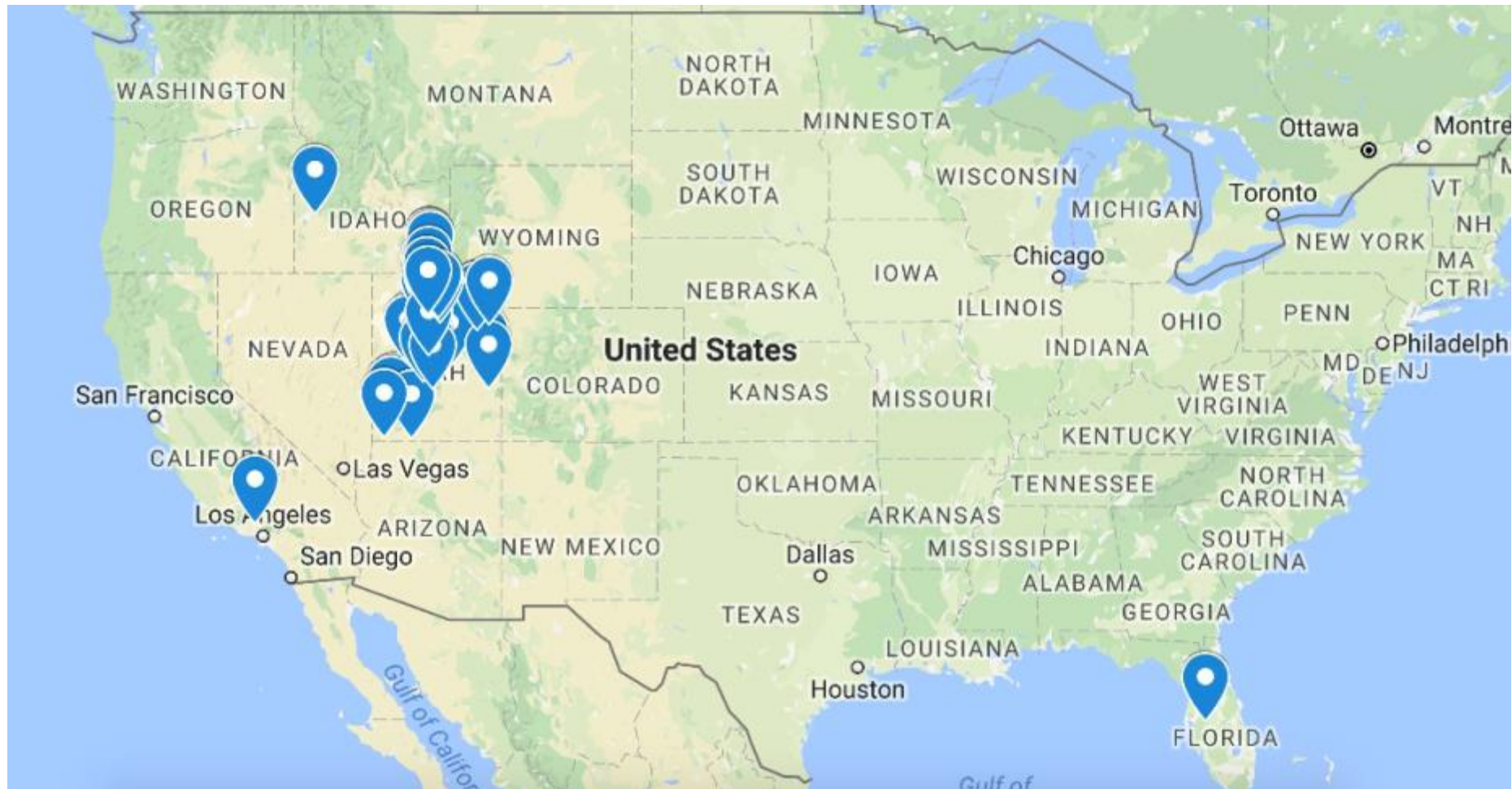
Audio: please choose between speakers and telephone. If you do not hear audio right now, please check your speaker volume or enter #[audio pin]# if using phone.

Submit questions in the Questions box at any time, and press [Send]. To undock and increase the size of the box, click on top right corner icon.





Registrants of this webinar





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



Who We Are

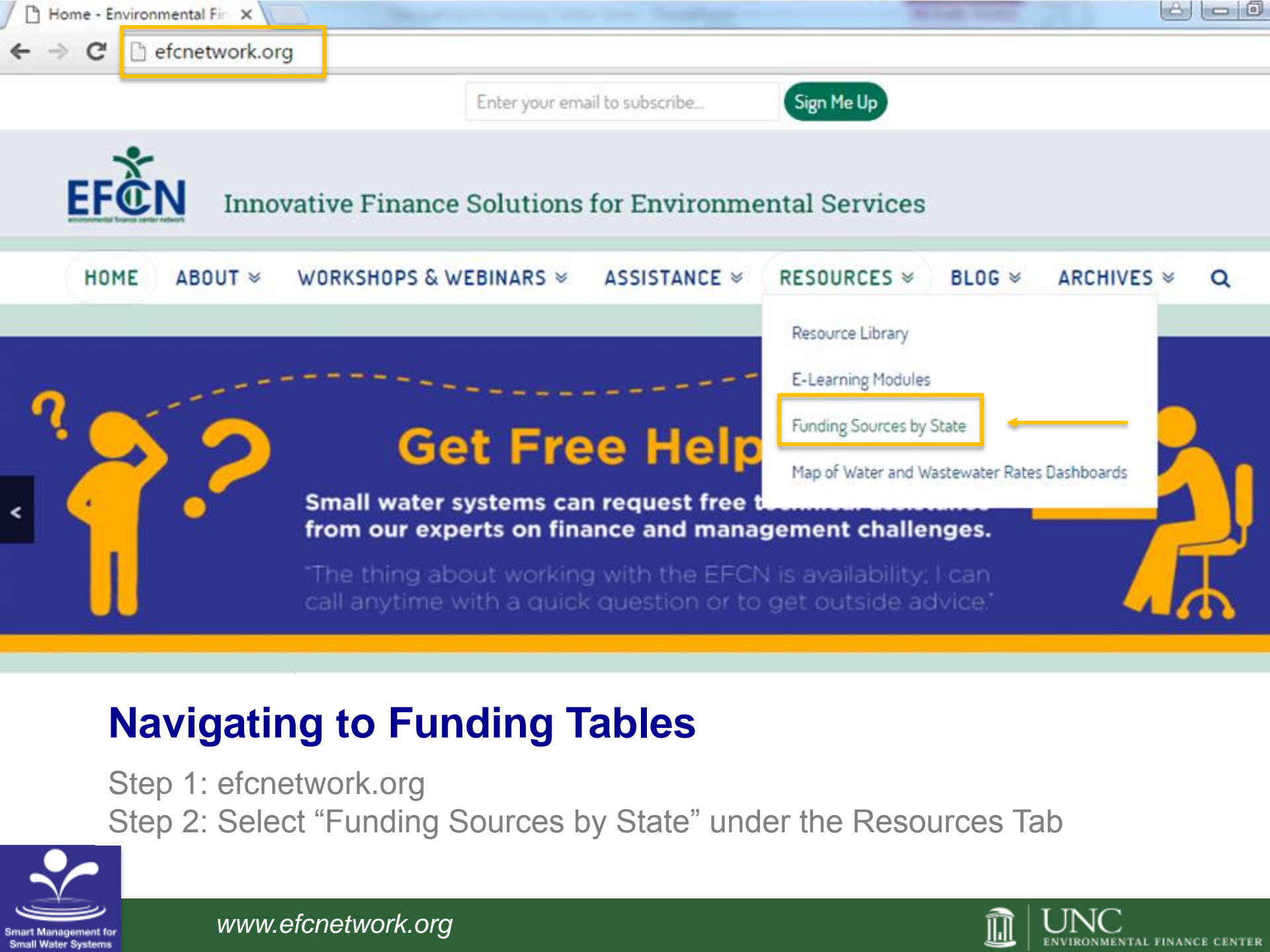
- **Environmental Finance Center at University of North Carolina at Chapel Hill**
- Southwest Environmental Finance Center
- **Syracuse University Environmental Finance Center**
- Environmental Finance Center at Wichita State University
- Environmental Finance Center at University of Louisville
- EFC West
- Great Lakes Environmental Finance Center at Cleveland State University
- New England Environmental Finance Center at University of Southern Maine





Areas of Expertise

- Fiscal Planning and Rate Setting
- Asset Management
- Energy Use and Efficiency
- Meeting Regulatory Compliance
- Multi-funding Coordination
- Communications and Decision-making
- Water Loss Reduction
- Working with Other Water Systems
- Financing
- Funding Programs
- Managing Small Utilities in Drought



Navigating to Funding Tables

Step 1: efcnetwork.org

Step 2: Select “Funding Sources by State” under the Resources Tab

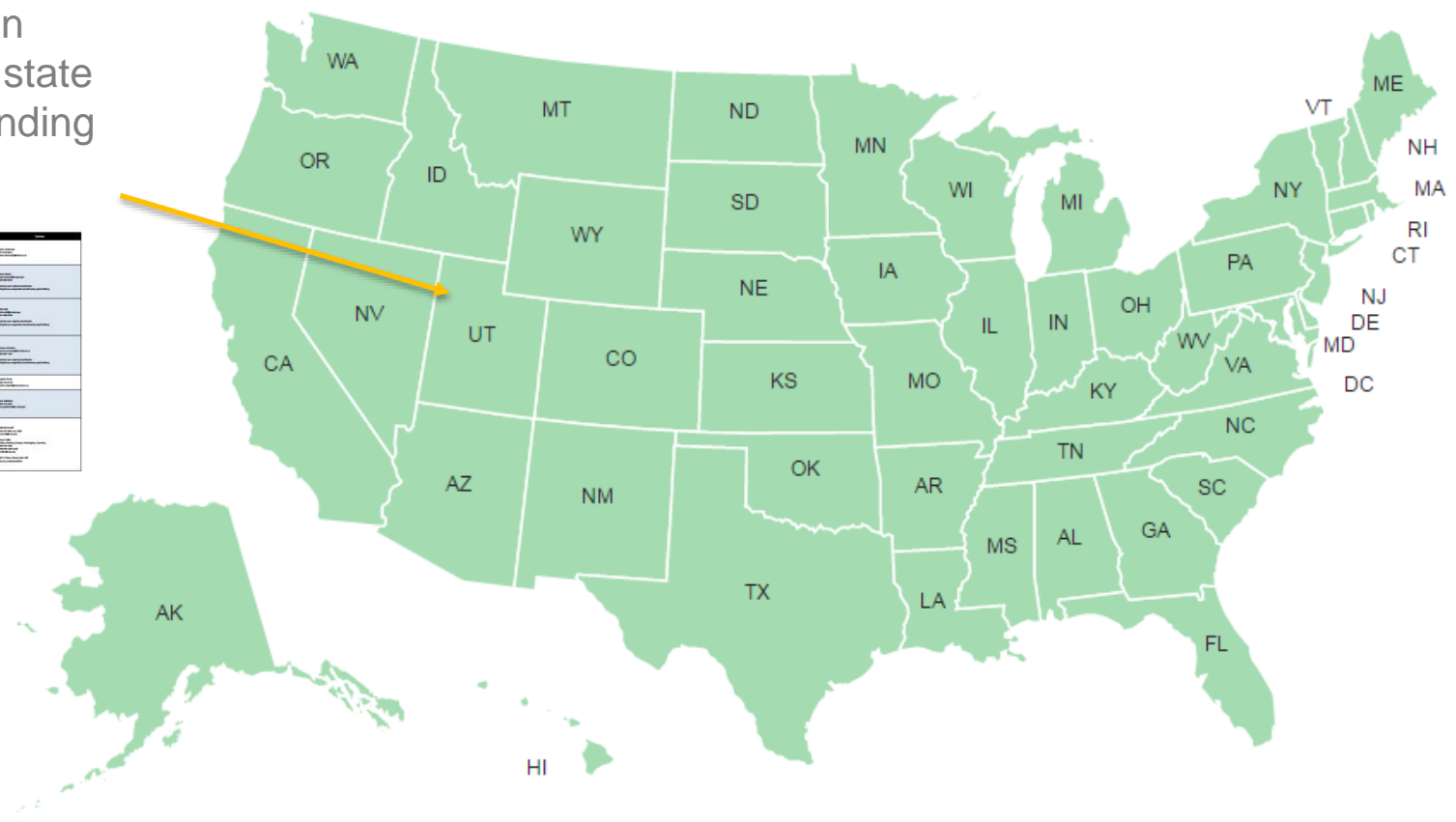
Funding Sources by State

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.

State	Funding Source	Link
AK
AL
AR
AZ
CA
CO
CT
DC
DE
FL
GA
IA
IL
IN
KS
KY
LA
MA
MD
ME
MI
MN
MO
MS
MT
NC
ND
NH
NJ
NM
NV
NY
OH
OK
OR
PA
RI
SC
SD
TN
TX
VA
VT
WA
WI
WV
WY





Presenters

Ken Bousfield



Division Director
Utah Department of
Environmental Quality

Michael Grange



Construction Assistance
Section Manager
Utah Department of
Environmental Quality

Stacey Berahzer



Senior Project Director
Environmental Finance Center
at the University of North
Carolina on Chapel Hill



UNC

ENVIRONMENTAL FINANCE CENTER



UNC SCHOOL *of* GOVERNMENT

Dedicated to enhancing the ability of governments and other organizations to provide environmental programs and services in fair, effective, and financially sustainable ways through:

- Applied Research
- Teaching and Outreach
- Program Design and Evaluation



How you pay for it matters



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

 @EFCatUNC



Objectives

- Understand the background of the State and Federal funded State Revolving Fund (SRF) Programs
- Learn what types of projects are eligible for SRF funding
- Understand some of the requirements related to federal funding
- Learn about the timelines and process for SRF applications
- Get tips on how to score higher on your SRF application



INTRODUCTION





The Debt Market

- Why Borrow?
- Water infrastructure has a long useful life
- Amortizing the loan over the life of the equipment allows your customers to benefit from system improvements now and pay for them over time



When You Need Cash Now: The Debt Market

- Lenders consider the following when determining whether to loan money and at what interest rate:
 - your creditworthiness,
 - your ability to repay the debt



When You Need Cash Now: The Debt Market

- The SRF Programs consider the following when providing assistance:
 - Median Adjusted Gross Income (MAGI)
 - Average monthly water bill
 - Project cost per connection
 - System contribution
 - Special incentives



The Debt Market

- Two types—Loans and Bonds
 - Loans, can be more universally available, depending on the state
 - Bonds - In Utah, political subdivisions have to bond for their longer term projects



Loans

- Typically from a bank
- Can be from a government-sponsored program



What is the State Revolving Fund (SRF) Program?

- There are 2 programs:
 - Drinking Water State Revolving Fund (DWSRF) – for “drinking water”
 - Clean Water State Revolving Fund (CWSRF) – traditionally for wastewater and other water quality projects
- A federal-state partnership:
 - States provide a 20% match on federal funds
 - Programs are administered by staff in the specific state



Drinking Water SRF

- Established by the 1996 amendments to the Safe Drinking Water Act (SDWA)
- All 50 states and PR have a DW SRF
- Congress appropriates funding for the DWSRF
- EPA then awards capitalization grants to each state based on the results of the Drinking Water Infrastructure Needs Survey and Assessment
- Bulk of money goes into a revolving loan fund
- Provides loans and other authorized assistance to water systems for eligible infrastructure projects



**Federal Capitalization
Provides Initial Funding**



**States Match Federal
Capitalization Grants (20
percent of federal
capitalization)**



**Bond Holders Provide
Additional Funding**

State DWSRF Program



**Bond
Proceeds**

**Low-
Interest
Loans**

**Loan
Repayments**

**Bond
Repayments**





ELIGIBILITY



Eligible Water Systems

- The Division of Drinking Water (DDW) provides oversight for two SRF Programs
 - Federal
 - State
- These programs, while similar, have some significant differences



Eligibility - State Program

- Limited to “Political Subdivisions/Entities”
 - Municipalities
 - Water Districts
 - Special Service Districts



Eligibility - Federal Program

- Publicly Owned Systems, Privately Owned Systems, or Non-profit, Non-community Systems
 - Municipalities, Improvement Districts, etc.
 - HOA's, "Mom & Pop" systems, etc.
 - Church Camps, Scout Camps, etc.



Eligible Projects

- Treatment
- Transmission and distribution
- Source
- Storage
- Consolidation
- Creation of new systems
- Green Projects
- Funding is not available for future development only
 - However, considering a reasonable amount of future growth is encouraged



ADVANTAGES OF THE SRF PROGRAM FOR FUNDING YOUR INFRASTRUCTURE PROJECT



Disadvantaged Communities

“Disadvantaged Communities” - a median adjusted gross income which is $\leq 80\%$ of the State’s median adjusted gross income; or where the established annual cost of drinking water service to the average residential user exceeds 1.75% of the median adjusted gross income



Lower Rates

- 2016 interest rates of 1.5-2.5% - The most current Revenue Bond Buyer Index (RBBI) is used as the base rate
 - As of November 3, 2016 RBBI was 3.44%
- 2016 origination fee of 1%
 - Disadvantaged communities do not pay origination fee



Targeted to Small Systems

- A minimum of 15% of all dollars credited to the loan fund must provide loans to systems that serve fewer than 10,000 persons



Green Infrastructure Projects Reserve?

- Green Projects include:
 - Water efficiency, including meters
 - Energy efficiency
- Congress decides from year to year whether to include the Green Project Reserve as a requirement
 - In 2016, no green projects required
 - However, states are encouraged to include green projects to the extent possible



Principal Forgiveness

- Basically the same as a grant
- Must qualify as a Disadvantaged Community to be considered
 - Local MAGI is less than or equal to 80% of the State MAGI
 - or
 - Average water bill is greater than 1.75% of Local MAGI



REQUIREMENTS RELATED TO FEDERAL SRF FUNDING



Terms of Loan

- Repayment must begin no later than one year after completion of the project
- 20 year term (after the completion of the project)
 - A disadvantaged community loan may have up to 30 years as long as the period of the loan does not exceed the expected design life of the project



Davis-Bacon Act Wage Rules

- Must use the most recent wage determination, found here:
 - <http://www.wdol.gov/dba.aspx>
- Select the appropriate state and county
- Select Construction Type “Heavy”
- Click “Search”
- Print the determination page and include it in project specifications and bid documents



American Iron and Steel Provision

- Requires iron and steel products in construction of projects be produced in the United States
- Waivers may be requested for an exception when necessary
- EPA Q&A document may be found here:
 - <https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-guidance-and-questions-and-answers>
- EPA Training Material may be found here:
 - <https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-training-materials>



Disadvantaged Business Enterprises (DBE)

- Typically Minority or Woman-Owned
- Must be given the opportunity to bid on any federally-funded project
- Assistance recipient must show a “good faith effort” to allow DBE’s to bid
- Not required to hire DBE



Reporting

- 3 major areas for federal programming
 - DBE
 - American Iron & Steel
 - Davis-Bacon



Project Signage

- Required for federally funded projects
- Options
 - Standard Signs
 - Posters or flyers hung in a public place
 - Newspaper or periodical advertisement
 - Online “sign” on community webpage or social media
 - Press release



SRF FUNDING TIMELINES AND PROCESS



The Intended Use Plan (IUP)

- IUP – describes how the state plans to use available funds, includes list of *potential* projects
- A draft IUP must be posted for public comment
- Includes the Project Priority List ...



The Project Priority List

- Each application assigned priority points
- Systems whose projects have a high priority score have chance to be considered for financial assistance ahead of projects with lower scores
- Calculation is as follows:

Priority rating = (Average number of points received) X (Rate Factor) X (AGI Factor)

Where: Rate Factor = (Average System Water Bill / Average State Water Bill)

AGI Factor = (State Median AGI / System Median AGI)



Drinking Water Board Financial Assistance Committee Application Submittal Schedule 2016

Application Cut-Off Date	SRF Packet Due	SRF Conference Call	DWB Meeting
11/09/2015	12/02/2015	12/09/2015	01/08/2016
01/04/2016	01/26/2016	02/03/2016	03/03/2016 (St. George)
03/14/2016	04/06/2016	04/13/2016	05/13/2016
05/09/2016	06/01/2016	06/08/2016	07/08/2016
06/30/2016	07/26/2016	08/03/2016	08/31/2016 (Layton)
09/26/2016	10/12/2016	10/19/2016	11/18/2016



The State Environmental Review Process (SERP) – Potential Outcomes

- CatEx - Categorical Exclusion From Environmental Review
- EA - Environmental Assessment
- FONSI - Finding of No Significant Impact
- EIS - Environmental Impact Statements
- ROD - Record of Decision



The Bonding Process

- Public notice and public hearing are required
 - Public hearing typically held as part of City Council Meeting or other public body meeting
- Parameters Resolution
- Bond Resolution



The Plan Review Process

- Project plans and specifications must be submitted to DDW for review and approval before going out for bid
- DDW has thirty days to respond
- Plan schedules accordingly
- DDW must receive a copy of the bid tabulation as well as the detailed bid for the chosen contractor



TIPS ON HOW TO SCORE HIGHER ON YOUR SRF APPLICATION



Capacity Assessment Worksheets for Public Water Systems

- Online at:

– <http://www.deq.utah.gov/forms/water/dw/docs/2014/03Mar/pdf/e-capassworksheet.pdf>

The Technical Portion of your System

Please mark the appropriate box: Yes, No, or Unknown for each section. Please try to determine the answer to every question. *If a section or question does not apply to your system, please write NA for not applicable.*

Water Supply and Existing Demands	Yes	No	Unknown
Do you know how much water you pump on an average day ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount <input style="width: 150px;" type="text"/>			
Do you know how much water you pump on a peak day ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount <input style="width: 150px;" type="text"/>			
Have you been able to provide adequate volumes of water during drought cycles ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have an Emergency Response Plan that will allow you to meet system demand during a drought or shortage, such as the loss of the largest source ? <i>If Yes, please attach.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a contract to purchase water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, with who ? <input style="width: 150px;" type="text"/>			
Do you know the terms affecting your supply during drought conditions ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System Maintenance			
Are locations, size, and type of mains and service lines detailed on records ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Can You Sleep at Night?

Is your system self sufficient?

Operating Ratio

Are you able to cover your debt service after paying for your day to day operations?

Debt Service Coverage Ratio

If your customers stop paying their bills, how long can you maintain operations?

Days Cash on Hand

Can your system meet its short term obligations?

Current Ratio

How much of your system's expected life has already run out?

Asset Depreciation



Whiteboard Video: Financial Benchmarking for Water Utilities

<http://www.waterrf.org/Pages/Projects.aspx?PID=4366>





Quick Review of Key Financial Indicators

Operating Ratio

Current Ratio

Debt Service
Coverage Ratio

Days of Cash
on Hand

Asset Depreciation



Is your system self-sufficient?



Operating Ratio

OPERATING REVENUES



OPERATING EXPENSES



Include or
Exclude

DEPRECIATION

ANNUAL COST OF WEAR
AND TEAR ON THE SYSTEM

Read more: <http://efc.web.unc.edu/2015/02/27/operating-ratio/>



Are you able to cover your debt service after paying for your day to day operations?



Debt Service Coverage Ratio

OPERATING REVENUES - OPERATING EXPENSES

(EXCLUDING DEPRECIATION)

PRINCIPAL + INTEREST PAYMENTS
ON LONG TERM DEBT

GREATER THAN 1.25

Read more: <http://efc.web.unc.edu/2015/04/23/debt-service-coverage-ratio/>

www.efcnetwork.org



Can your system meet its short term obligations?



Current Ratio

**UNRESTRICTED CURRENT ASSETS
EXCLUDING INVENTORIES AND
PREPAID ITEMS**

CURRENT LIABILITIES

Read more: <http://efc.web.unc.edu/2015/10/01/key-indicator-current-ratio/>

www.efcnetwork.org



If your customers stop paying their bills, how long can you maintain operations?



Days Cash on Hand

UNRESTRICTED CASH AND INVESTMENTS

**OPERATING EXPENSES EXCLUDING
DEPRECIATION & AMORTIZATION / 365**

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

www.efcnetwork.org



How much of your system's
expected life has already run out?



Asset Depreciation

$$= \frac{\textit{Accumulated Depreciation}}{\textit{Gross Plant and Equipment}}$$

Caveat: this indicator is only as accurate as your depreciation schedule, and even then historic pricing is likely to distort the results.

Where Do We Get Started?

- Local governments: audited financial statements
- Non-governments: balance sheets, shareholder reports, annual reports, etc.

BAVARIA	
STATEMENT OF NET ASSETS	
PROPRIETARY FUND	
JUNE 30, 2011	
	Water and Sewer Enterprise Fund
Assets	
Current Assets:	
Cash - operating	\$ 568,001
Accounts Receivable (Net)	60,346
Prepaid Insurance	5,856
Total Current Assets	640,203
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	6,421,418
Liabilities	
Current Liabilities:	
Accounts Payable	21,090
Accrued Expenses	2,767
Due to Other Funds	8,176
Customer Deposits	62,625
Deferred Subsidy Revenue	460,905
Current Portion of Long Term Debt	343,811
Total Current Liabilities	899,474
Noncurrent Liabilities:	
Compensated Absences	15,605
Revsoc Bonds (Net of current portion)	233,357
Notes Payable (Net of current portion)	646,833
Total Noncurrent Liabilities	895,825
Total Liabilities	1,795,299
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	163,361
Total fund net assets	\$ 4,633,077

Financial Health Checkup for Water Utilities

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

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

Financial Health Checkup for Water Utilities

UNC ENVIRONMENTAL FINANCE CENTER
Developed by the Environmental Finance Center at the University of North Carolina, Chapel Hill

A resource for water systems from the EFCN's Smart Management for Small Water Systems project, funded under a cooperative agreement with the U.S. Environmental Protection Agency.

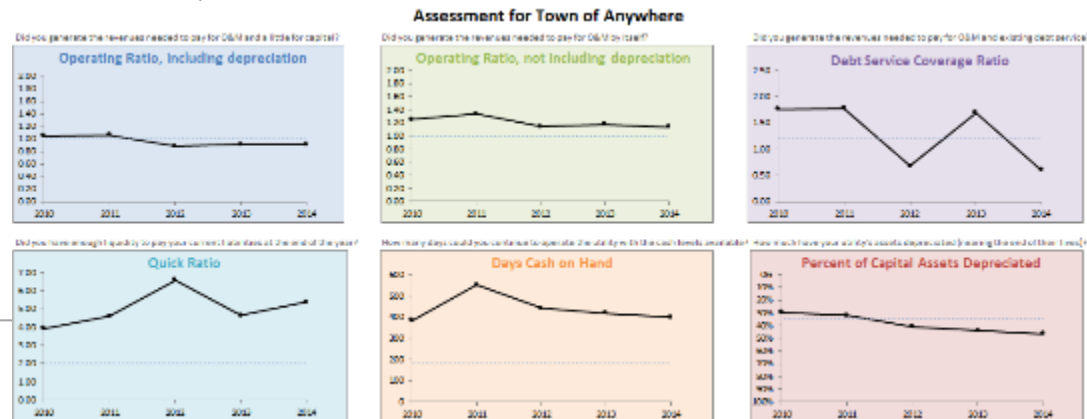
What does this tool do?
This tool assists in the assessment of the financial performance of a water (and/or wastewater) utility fund. Financial data readily available in annual financial statements are copied into the tool, which compares key financial indicators that measure a variety of important metrics, such as the ability to pay debt service, availability of cash to pay for operations and maintenance, the sufficiency of revenues generated, etc. Each metric is compared against targets that are specified by the user. The tool demonstrates the financial strengths and weaknesses of the utility fund in the past 5 years.

Features:
Simple data entry (uses data already reported in your audited financial statements)
Key financial performance indicators with explanations
Set your own targets
Assessment of last year's financial ratios, improvements since previous year, and five-year trends
Guided navigation through hyperlinked images

What are financial indicators?
Watch a whiteboard video explaining financial performance indicators in lay terms.

FINANCIAL BENCHMARKING [Play]

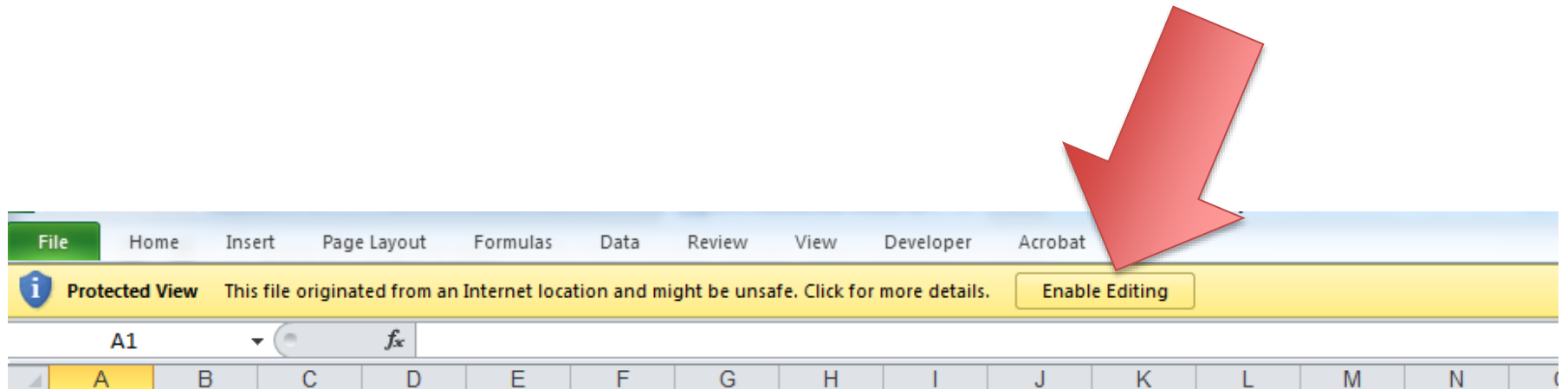
Excel®- based tool
Free to use



Created by the Environmental Finance Center at the University of North Carolina, Chapel Hill's School of Government
A resource for water systems from the EFCN's Smart Management for Small Water Systems project
funded under a cooperative agreement with the U.S. E.P.A.



Tip: when you first use this file after downloading from our website, click on “Enable Editing” at the top





Why Care About This?

- Funders and ratings agencies care about this
- As you think about the future needs of your system, you have to know where you are starting from



So....

- Now that we know where we are, let's decide where we are going...
- How do we estimate the future costs and revenues?



Two Related Concepts:

Asset Management & Capital Planning



Working **smarter** *not harder* is the essence of Effective Management / Asset Management



Asset Management
Helps You Have the
Most Impact in Your
System By Spending
Your Limited Dollars in
the Best Way Possible

Five Core Components of AM



Current State of the Assets



Level of Service



Criticality



Life Cycle Costing

Long-Term Funding





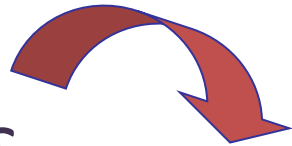
Current State of the Assets

- What do I own?
- Where are the assets?
- What condition are they in?
- How much useful life is remaining?
- What is the replacement value?



Level of Service

Involve
Customers



Measurable
Goals: Internal
and External



Track Progress
Towards
Meeting Goals

Involve
Staff



What would my customers want?

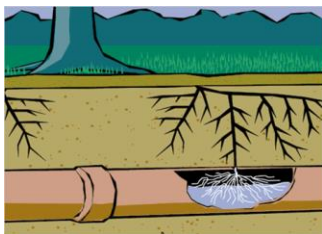


Asset Criticality

What is the probability or likelihood that a given asset will fail?

How do my assets fail?

What's the condition of my assets?





Asset Criticality

What is the consequence if the asset does fail?

What is the cost of the repair?

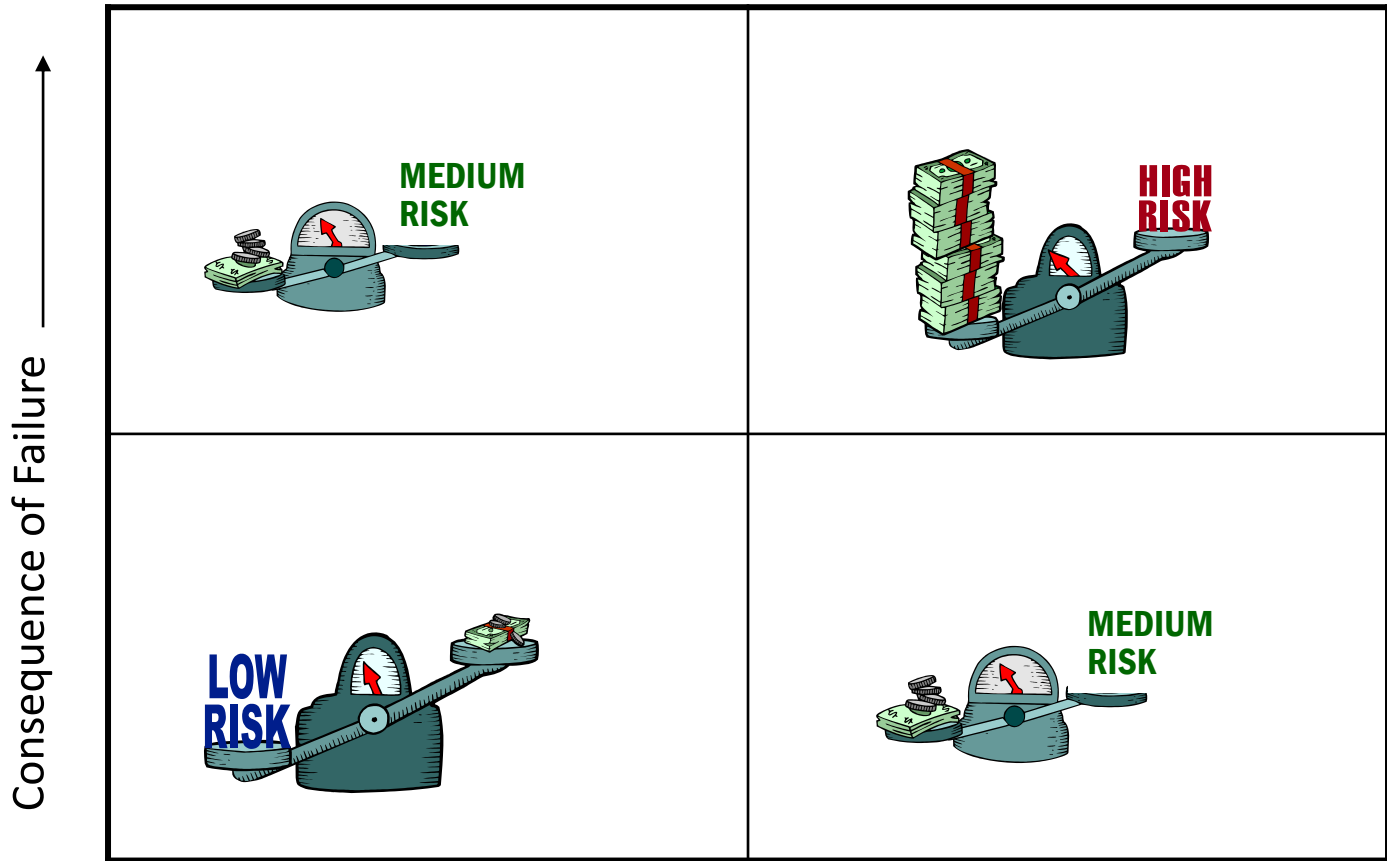
Are there legal consequences, environmental consequences, social consequences?

Are there redundant assets?



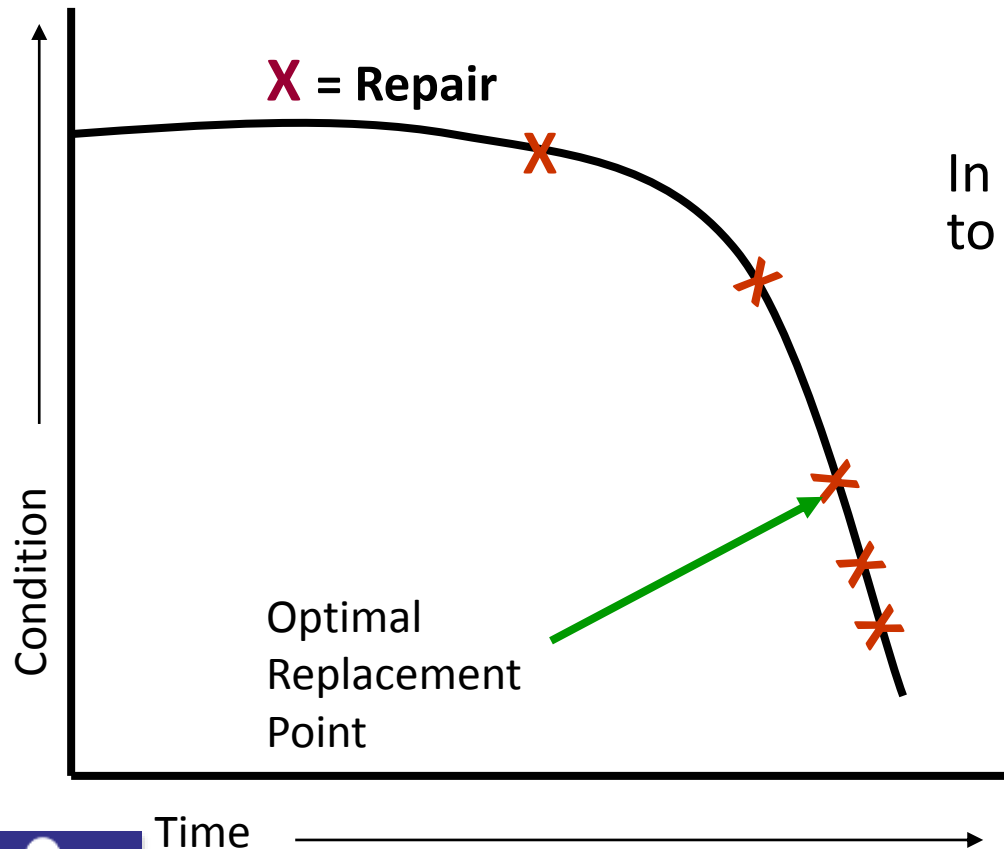


Asset Criticality



Which category of assets do I care the most about? The least?

Life Cycle Costing: Replacement of Assets



In Theory, there is an exact right time to replace an asset

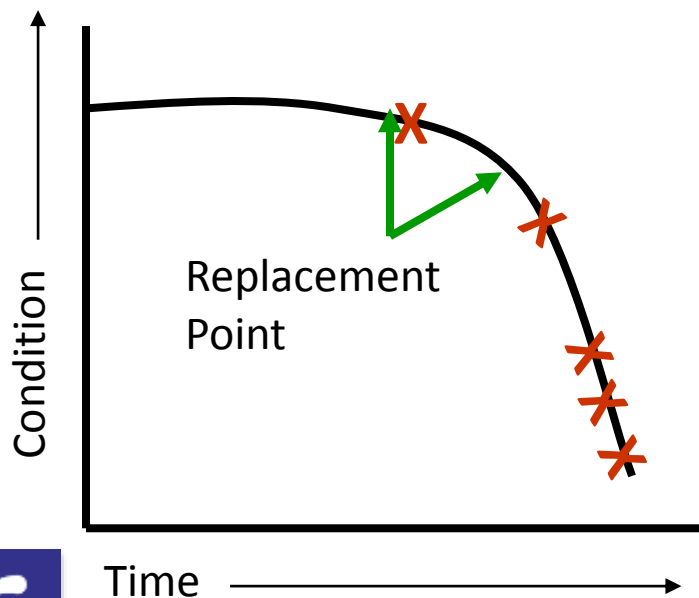
Not possible to know the optimal time to replace every asset

So... need to use the concept of risk

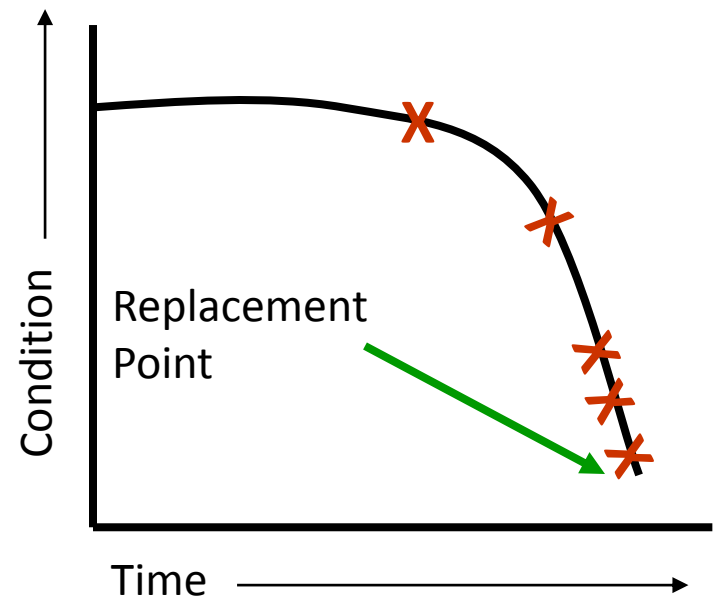


Life Cycle Costing & Risk

High risk : replace assets early, before failure



Low risk assets: run to failure and replace afterwards





Long Term Funding

- This is where capital planning comes in
- Once you figure out how to get the longest life out of your assets, plan to have the money you need to replace them when necessary
- More on this Asset Management Framework at:

<https://www.env.nm.gov/dwb/assistance/documents/AssetManagementGuide.pdf>



Long Term Capital Plan

- An official multi-year document that identifies and prioritizes capital projects, identifies funding sources, and sets timelines



Capital Improvement Program

- Identify regulatory deficiencies (discuss with regulatory agencies, look at proposed regulations, talk to consultants), in a 10-20 year window
- Identify growth needs, expansion



Capital Improvement Program

- Identify deferred maintenance problems or where current service is inadequate
- Prioritize based on need realizing that “hidden” infrastructure tends to be ignored



Capital Improvement Program - Timelines

- Use **Asset Management Plan** to plan for capital expenses in the long term (~20 years)



Capital Improvement Program - Timelines

- Create a **Capital Improvement Plan** with a narrower timeline (~5 years) in more detail. Specify the projects and accurate estimates of cost. Plan where money will come from.



Capital Improvement Program - Timelines

- Create a **Capital Improvement Budget** with an even narrower timeline (1 – 2 years) committing funds for the planned capital projects. Get it approved/adopted.

Example Capital Improvement Plan (CIP)

Project Name	Planning Years (Values in 000s)					Future	Total
	FY 02	FY 03	FY 04	FY 05	FY 06		
Water Supply & Treatment							
Water Treatment Objective							
Lime pumps and slakers	740						740
Chemical Enclosures		500					500
Filter 7-18 Control			330				330
Filter Gallery Rehab	1,140						1,140
High Service Pumps		1,500					1,500
Upgrade or Replace Reclaim System Drier	200						200
New Membrane Skids				5,700			5,700
Sodium Hypochlorite Plant	2,000						2,000
Additional Storage Tanks					5,000	3,300	8,300
Repair R/O Capacity		150					150
Filter Gallery Mech Parts	300						300
MMIS						150	150
VFDs - HSP		344					344
Membrane Replacement		1,600					1,600
Painting of Water Plant						3,000	3,000
Phase II Emergency Power Generator						1,500	1,500
Portable Generator - South Well Field				150			150
Replacement of Fuel Tanks			170				170
Upgrade of Existing Control System @ WTP						580	580
Water Treatment Total	4,380	4,094	500	5,850	5,000	8,530	28,354



Where Can You Find the Prices?

- Call a vendor. Actually, call a few.
- Ask other systems
- Look at past expenses but adjust for increases in costs

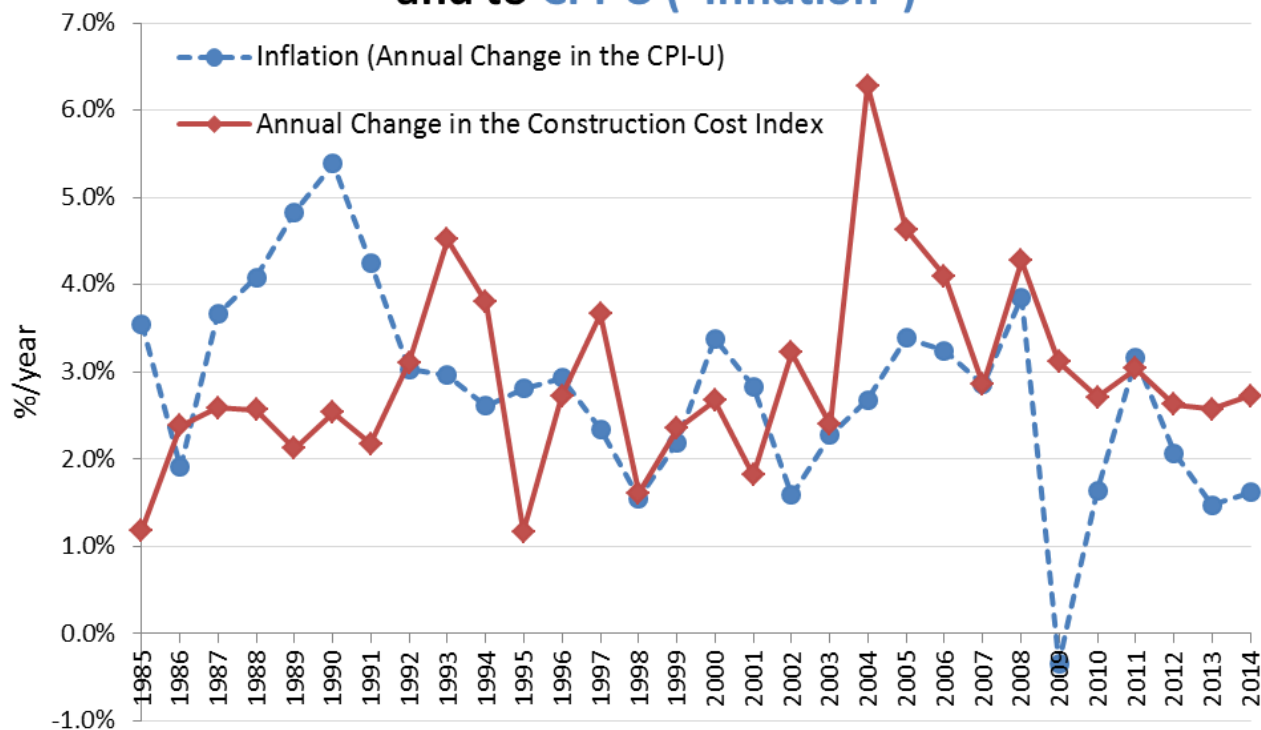


Measures of Inflation

- **Consumer Price Index (CPI)**—measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services
- **Construction Cost Index (CCI)**—average prices for labor and key construction materials from 20 cities across the United States



Annual Changes to the Construction Cost Index and to CPI-U ("Inflation")



Data analyzed by the Environmental Finance Center at the University of North Carolina, Chapel Hill.
 Data Sources: Bureau of Labor Statistics, Engineering News-Record ENR.com, InflationData.com, USDA Natural Resources Conservation Services.

<http://efc.web.unc.edu/2012/09/26/using-an-index-to-help-project-capital-costs-into-the-future/>



Drive Down the CIP Cost

- Is it possible to
 - Eliminate projects?
 - Defer projects?
 - Repair or refurbish instead of replace?
 - Find a non-asset solution?
 - Find collaboration/partnerships alternatives with neighboring systems?
 - Improve balance of cash vs. debt-financed?
- Re-evaluate water demands of your customers. Many systems are now noticing that *total* demand is *decreasing* over time.

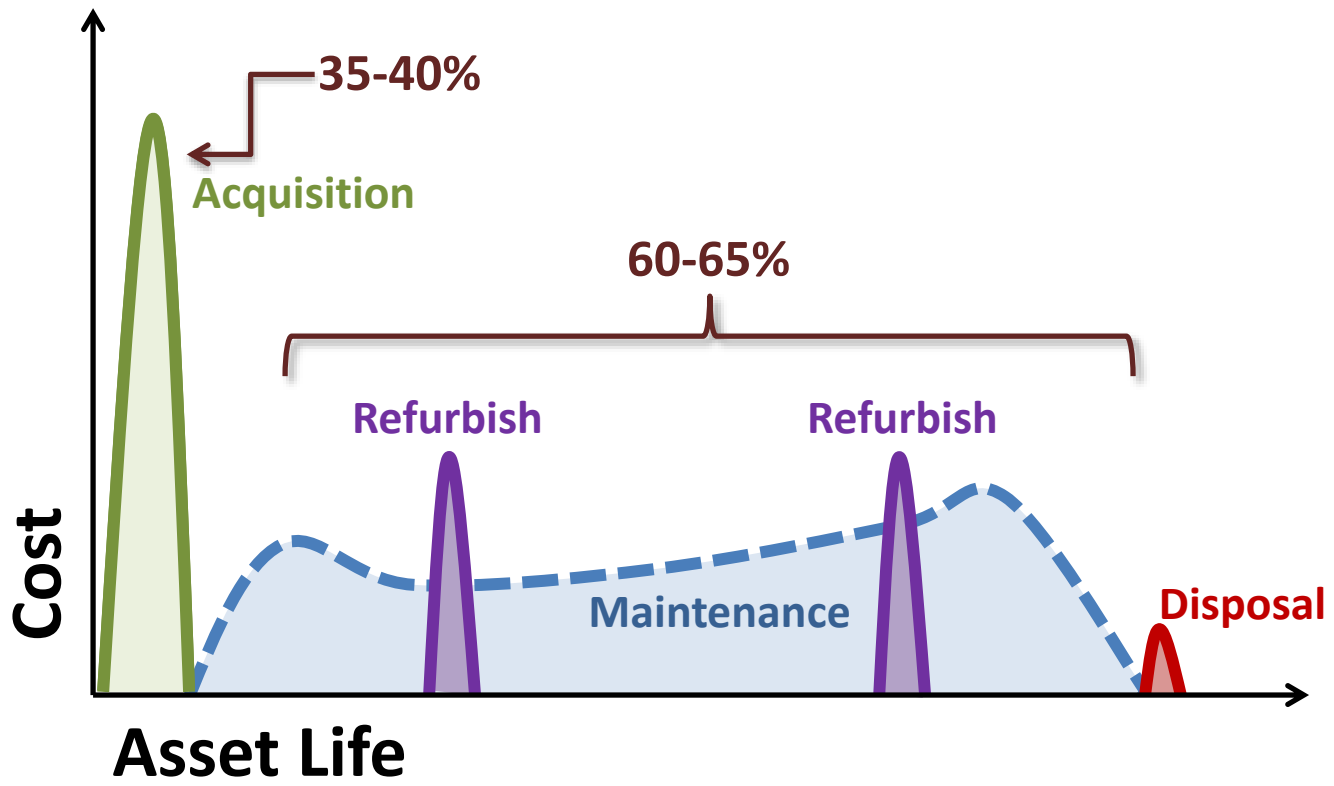


Reminder: Life Cycle Costing

- Purchase Price \neq Total Price



Capital Investments are Just the Tip of the Iceberg...



Source: Adapted from Steve Allbee, USEPA

Software: CUPSS (EPA)

<http://www.epa.gov/cupss/>



Check Up Program for Small Systems
Set-up | Switch Utility | Create User | Help | Training | Exit

My Home
 My Inventory
 My O & M
 My Finances
 My Check up
 My CUPSS Plan

Welcome Back Helen, Beauty View Acres Subdivision - DW

What would you like to do today?

[Do Some Training](#)

[Enter a New Task or Work Order](#)

[Create or Update My Schematic](#)

[Search Asset and Maintenance](#)

[Create or Update My Inventory](#)

[Enter My Finances](#)

[Print My Check Up Reports](#)

[Work on My CUPSS Plan](#)

My Calendar

April 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3
4	5	6	7	8	9	10

My Messages and Alerts

Popup Messages Are Off. [Click To Turn On.](#)

Reminder - Today's Tasks	8
Tasks Currently Past Due	160
Assets Needing Update	0
Number of High Risk Assets	2



Resource Webpage for Capital Planning

UNC SCHOOL of GOVERNMENT

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search this site

About Services Programs Resources Etc

Mission Statement

We work to enhance the ability of governments and other organizations to provide environmental programs and services in fair, effective and financially sustainable ways.

Project Tools

User-friendly Capital Improvement Plan (CIP) Tool for Water & Wastewater Utilities

Calculator, 03/20/2014 (MS Excel, 802 Kb)
Enter in all capital projects and this tool will project your fund balance (revenues, expenses and reserves), and necessary rate increases for the next 20 years, and more!

What to Include in your Capital Plan:

PROJECT CAPITAL PLANNING AND WASTEWATER



This project, supported by the Department of Environment and Natural Resources, together with many other water and wastewater utilities, is the creation of a Capital Management Plan.

Blog Post on "Using an Index to Measure the Future"

Read a short blog post on creating an asset...

Summary of "What to Include in Your Capital Plan: A Reference Guide for NC Water and Wastewater Utilities"
Last updated: February 2011

Categories	EPW Smart Management: A Handbook for Small Water Utilities	2010 Year 2010 Report: Capital Planning and Financial Analysis	2010 PWS Capacity Development Program	2010 PWS Loans and Grants	2010 PWS Construction Grants and Loans	WMA Loans and Grants	NC Water Economic Development Center	Local Government Commission (LGC) Form	2010 Drinking Water Needs Survey	2010 Drinking Water Supply Plan	2010 Software CIP/CP
Executive Statement/Introduction to your capital plan											
Date of documentation of capital plan											
Capital planning time period											
Description of systems											
Existing capacity and demand											
Description of customers											
Inventory of existing assets (details on each asset)											
Condition of systems											
Project-specific details (complete for each project in every year)											
Financial planning (complete for each year in time period)											
Long term planning descriptions (may be not project-specific)											
Approvals											
Updating the capital plan											
Ties or links to other studies											

For updates and to view details in each category, go to <http://www.efc.unc.edu/projects/capitalplanning.html>



User-Friendly Capital Improvement Plan (C.I.P.) for Water & Wastewater Utilities Tool

Free, simplified CIP tool using only MS Excel,
developed by the Environmental Finance Center at UNC.

Download the latest
version at
<http://efc.sog.unc.edu>.
Find it in Resources /
Tools.

Tool development was funded
by the
Public Water Supply Section
of DWR/ NCDENR
and partly by the USEPA.

User-friendly Capital Improvement Plan (CIP) for Water and Wastewater Utilities
Version 2.5 (Updated March 2014)

30-year capital planning | Debt and/or capital reserve financing options | Guided data inputs | Simple data needs
Financial dashboard outputs | Estimates necessary rate increases over time to pay for capital projects

INSTRUCTIONS

- 1) Use tabs at bottom of screen and buttons to navigate to different pages.
- 2) In "Data Input 1", enter utility characteristics, rates and usage information in blue cells:
- 3) In "Data Input 2", enter details on capital improvement projects in the light blue cells. Each row is a different project.
- 4) In "20-Year Projections", view your fund balance projections for 20 years and observe the estimated rate increases needed each year to pay for your Capital Improvement. No data entry required on this page.
- 5) After all your utility information and capital improvement project details are entered, go to the "Dashboard" to view long term trends in your financial reserves, rate increases and average bills, and capital investments

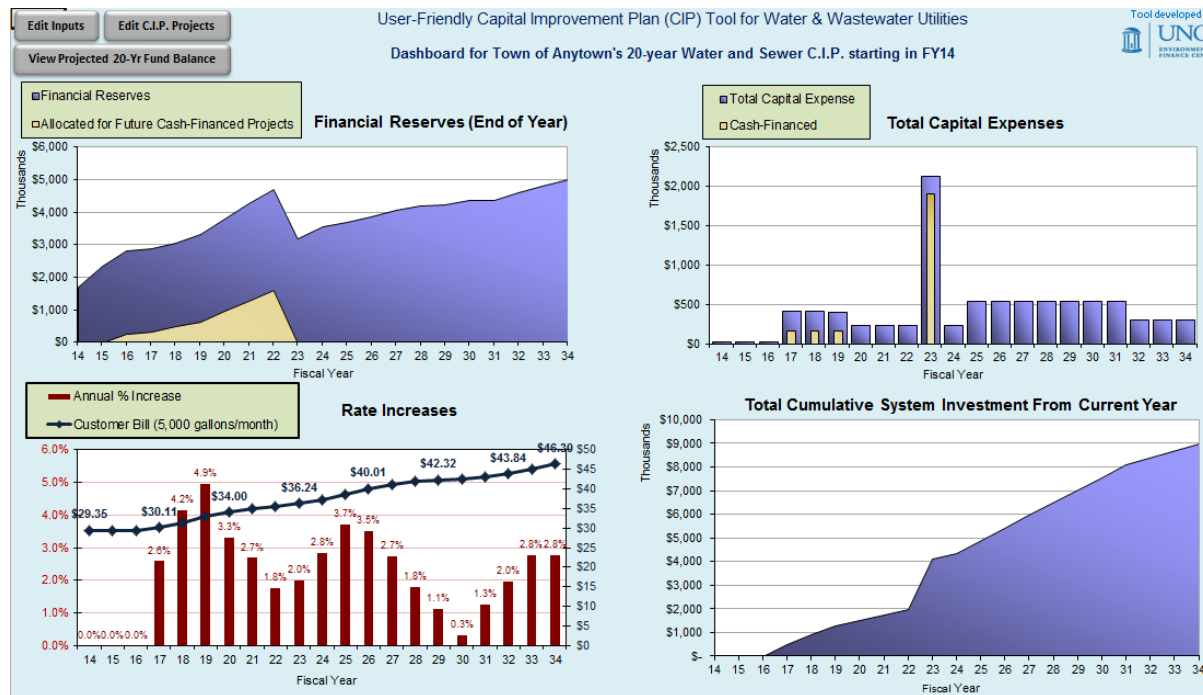
	2015	2016	2017	2018
Unfunded Rate Charges Needed to Maintain the Fund Balance				
Water System (Electricity, 2015 Base of \$100.00)	2,000	1,116	2,074	2,973
Wastewater System (Electricity, 2015 Base of \$100.00)	100	500	1,000	1,500
Capital Investment (2015 Base of \$100.00)	100	100	100	100
Net Rate Change (Minimum Charge)	210	716	1,174	1,573
Minimum Rate of 1.00 percent (100% of 2015 value)	100	100	100	100
Applicable Public Charge (2.00 percent)	100	100	100	100
Unfunded Rate Charge	110	616	1,074	1,473
Unfunded Rate Charge	110	616	1,074	1,473
Unfunded Rate Charge	110	616	1,074	1,473
Unfunded Rate Charge	110	616	1,074	1,473

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Development of this tool was funded by the NC Department of Environment and Natural Resources (Public Water Supply Section) and the U.S. Environmental Protection Agency.
[Download the latest version of this tool at efc.sog.unc.edu. Find it in Resources / Tools.](http://efc.sog.unc.edu)



What the Tool Does

Summarizes your utility's capital needs in the next 20 years, and estimates rate increases needed to fully fund the capital projects, based on debt and/or cash funding requirements





Rate setting

Will it provide sufficient cost recovery?

What exactly does this include?

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?

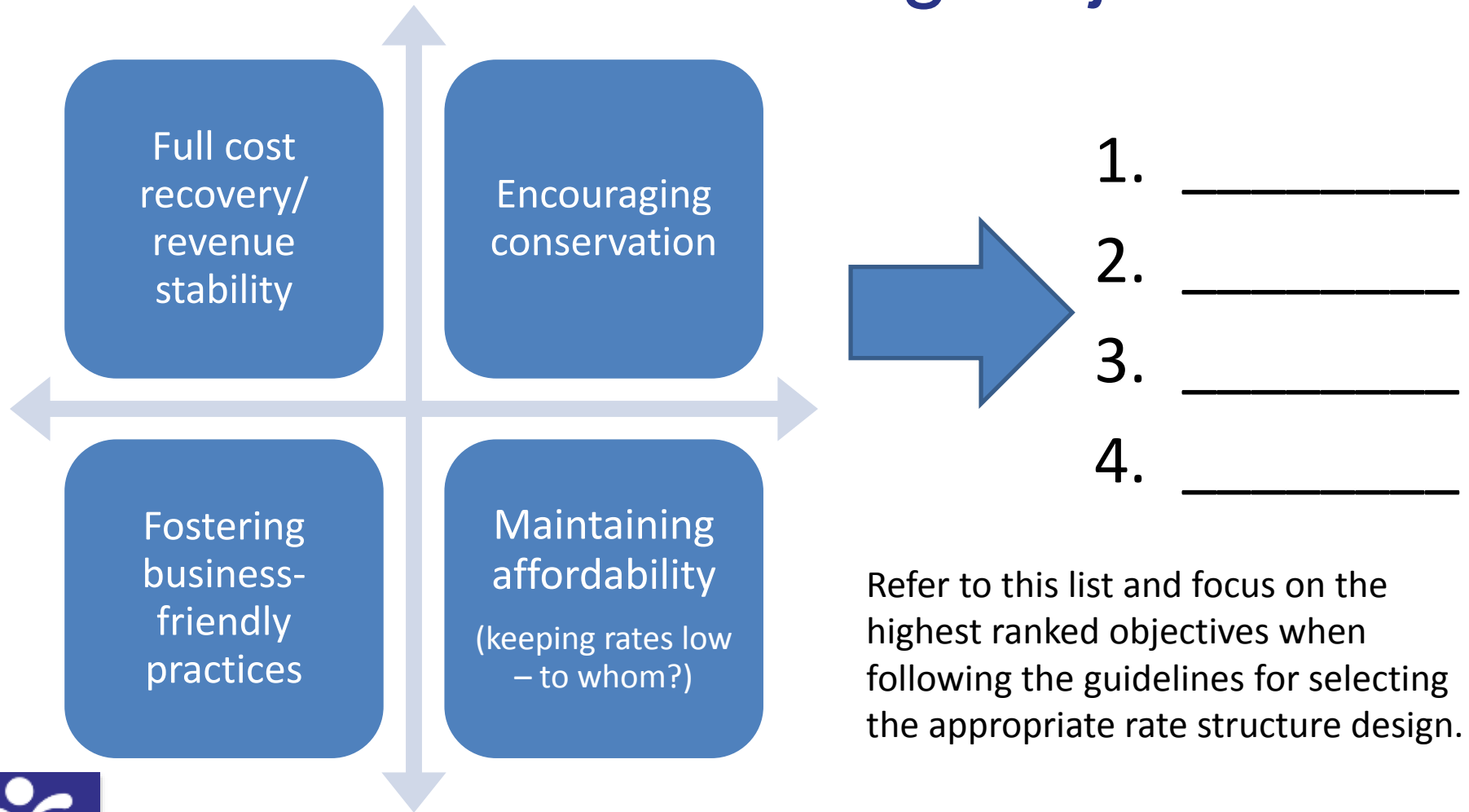


“Full Cost Pricing”

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



Rank Your Rate Setting Objectives



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



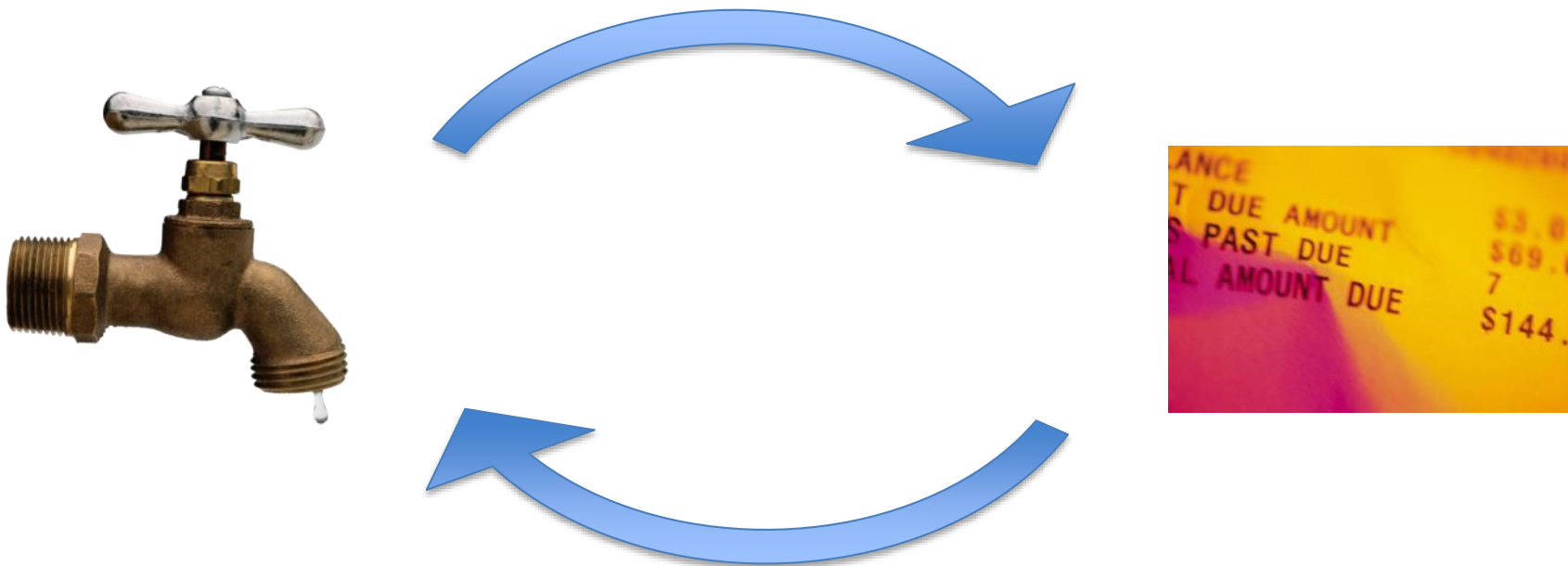
Elements of Rate Structure Designs

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



How Rates and Usage Interact

Set rates based on projected water use



Raising rates lowers water use

Rule of thumb: water use declines ~2-6% as rates increase 10%




Frequency of Rate Changes

- Always review your rates annually (recommended)
- Review your financial health indicators annually, and then review your rates if any of the indicators reflect poor financing
- Perhaps less politically charged option: Raise rates each year automatically based on inflation



Water and Sewer Rates Analysis Model

Free, rate-setting tool using only MS Excel, developed by the Environmental Finance Center at UNC.



Water and Sewer Rates Analysis Model

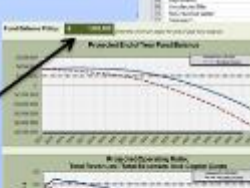
Version 2.7 (updated March 24, 2014)

70-year fund balance estimates under proposed new rates vs. existing rates • compare side-by-side
Uniform or block rates • Residential and non-residential rates • Changes to customers and demands

INSTRUCTIONS

- 1) Click on tabs at bottom of screen to navigate to different pages.
- 2) On the "Data Input 1" tab enter current and new rate details in the dark green cells.
- 3) On the "Data Input 2" tab enter current consumption levels, utility finances, and other assumptions in the dark green cells.
- 4) On the "Charts" tab, see projections of the End of Year Fund Balance, and input a Fund Balance Policy in the dark green cell at the top of the page.
- 5) Compare new rates to existing rates in "Compare Monthly Bills" and their impacts on costs and revenues in "Existing Rates" or "New Rates".

Rate Structure	2012	2012
Residential Rates	Existing	Existing
Water Base Rate		\$10.06
Water	100 gal/mo	100 gal/mo
Block Rate 1 (\$1,000 gal)	2,361 gal/mo	2,361 gal/mo
Block Rate 2 (\$1,000 gal)	5,361 gal/mo	5,361 gal/mo
Block Rate 3 (\$1,000 gal)	7,361 gal/mo	7,361 gal/mo
Block Rate 4 (\$1,000 gal)	12,361 gal/mo	12,361 gal/mo
Final Block Rate (\$1,000 gal)		\$10.60
Sewer Base Rate		\$10.06
Sewer	100 gal/mo	100 gal/mo
Block Rate 1 (\$1,000 gal)	2,361 gal/mo	2,361 gal/mo
Block Rate 2 (\$1,000 gal)	5,361 gal/mo	5,361 gal/mo
Block Rate 3 (\$1,000 gal)	7,361 gal/mo	7,361 gal/mo
Block Rate 4 (\$1,000 gal)	12,361 gal/mo	12,361 gal/mo
Final Block Rate (\$1,000 gal)		\$10.60



Note: This tool models the impact on a utility's fund balance of a one-time increase in rates, rather than an ongoing series of rate increases. Update this tool every year and do not rely on analysis conducted more than one year ago.

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Funded by the Public Water Supply Section, Division of Water Resources at the NC Department of Environment and Natural Resources, and the U.S. Environmental Protection Agency
[Download the latest version of this tool at http://efc.sog.unc.edu](http://efc.sog.unc.edu). Find it in Resources / Tools.
Provide feedback or ask questions by emailing Sheel Fisher at efc@efc.sog.unc.edu

Download the latest version at <http://efc.sog.unc.edu>. Find it in Resources / Tools.

Tool development was funded by the Public Water Supply Section of DWR/ NCDENR and partly by the USEPA.



<http://efc.sog.unc.edu/reslib/item/water-sewer-rates-analysis-model>

Data Input 1

Rate_Analysis-version2 - Microsoft Excel

Water and Sewer Rates Analysis Model. Version 2.0

Inputs: Rates and Rate Structures

Input current rate and account information in the dark green cells to analyze projected cashflows from rate changes.

Rate Structure FY: 2012 2013

Residential Rates	Existing	New
Water Base Rate	\$10.00	\$12.00
Water:		
Block Rate 1 (\$/1,000 gal)	\$1.00	\$1.25
Block Rate 2 (\$/1,000 gal)	\$2.00	\$2.25
Block Rate 3 (\$/1,000 gal)	\$3.00	\$3.25
Block Rate 4 (\$/1,000 gal)	\$4.00	\$4.25
Final Block Rate (\$/1,000 gal)	\$5.00	\$5.25
Sewer Base Rate	\$10.00	\$12.00
Sewer:		
Block Rate 1 (\$/1,000 gal)	\$1.00	\$1.25
Block Rate 2 (\$/1,000 gal)	\$2.00	\$2.25
Block Rate 3 (\$/1,000 gal)	\$3.00	\$3.25
Block Rate 4 (\$/1,000 gal)	\$4.00	\$4.25
Final Block Rate (\$/1,000 gal)	\$5.00	\$5.25

Rate Structure 2012 2013

Irrigation Rates	Existing	New
Irrigation Base Rate	\$0.00	\$0.00
Irrigation:		
Block Rate 1 (\$/1,000 gal)	\$3.50	\$3.50
Block Rate 2 (\$/1,000 gal)		
Block Rate 3 (\$/1,000 gal)		
Block Rate 4 (\$/1,000 gal)		
Final Block Rate (\$/1,000 gal)		

Tap Fees

	2012 Existing	2013 New
Average Sewer Tap Fee	\$2,000.00	\$2,400.00
Average Water Tap Fee	\$500.00	\$600.00
Average Irrigation Tap Fee	\$2,200.00	\$2,500.00

Commercial Rates 2012 2013

Commercial Rates	Existing	New
Water Base Rate	\$10.00	\$12.00
Water:		
Block Rate 1 (\$/1,000 gal)	\$1.00	\$1.25
Block Rate 2 (\$/1,000 gal)	\$2.00	\$2.25
Block Rate 3 (\$/1,000 gal)	\$3.00	\$3.25
Block Rate 4 (\$/1,000 gal)	\$4.00	\$4.25
Final Block Rate (\$/1,000 gal)	\$5.00	\$5.25
Sewer Base Rate	\$10.00	\$12.00
Sewer:		
Block Rate 1 (\$/1,000 gal)	\$1.00	\$1.25
Block Rate 2 (\$/1,000 gal)	\$2.00	\$2.25
Block Rate 3 (\$/1,000 gal)	\$3.00	\$3.25
Block Rate 4 (\$/1,000 gal)	\$4.00	\$4.25
Final Block Rate (\$/1,000 gal)	\$5.00	\$5.25

Number of Accounts 2012 Existing 2013 Growth Rate:

Residential Water	3000	0.50%
Residential Sewer	2500	0.50%
Commercial Water	200	0.50%
Commercial Sewer	80	0.50%
Irrigation Water	3000	0.50%

Miscellaneous 2012 Existing

Uncollected Bills	8.0%
Non-revenue Water	15.0%

Data Input Color Explanation:

- White: Data to be entered, can be changed
- Black: Automatically calculated data; do not change!
- Red: Important Results

cubic feet to gallons converter

100 cubic feet = 748 gallons

\$/ccf to \$/1000 gallons converter

\$ 1.00 /hundred cubic feet = \$1.34 /1,000 gallons

Input block sizes (state and end) in gallons/month
Input rates in \$/1000 gallons
Use the converters above for converting from cubic feet units

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Funded by the NC Department of Environment and Natural Resources and the U.S. Environmental Protection Agency

Instructions Data Input 1 Data Input 2 Charts Fund Balance - Existing Rates Fund Balance - New Rates



Water and Sewer Rates Analysis Model - Results

- Results are Excel Spreadsheet with:
 - The Fund Balance Under **Existing** Rates
 - The Fund Balance Under **Proposed** Rates
- ...Projected for the next 20 years



[http://www.deq.utah.gov/FeesGrants/funds/
drinkingwater/federal_srf.htm](http://www.deq.utah.gov/FeesGrants/funds/drinkingwater/federal_srf.htm)

Tour of Utah DEQ's website



Contact Information

Michael Grange: Construction Assistance
Section Manager

mgrange@utah.gov

801-536-0069

Ken Bousfield:

Utah Division of Drinking Water

kbousfield@utah.gov

(801) 536-4207



Polling Question 4

Would you like to subscribe to the Environmental Finance Center blog?
(choose one)

- Yes
- No



Polling Question 5 and Evaluation Survey Link

Are you interested in receiving in-depth technical assistance for your small water system? *(choose one)*

- Yes
- No
- Would Like More Information About This



QUESTIONS

Slides and a manual on this material are coming to:

<http://efcnetwork.org/events/webinar-navigate-utahs-srf-program/>



Thank You!

And please let us know if you have any questions.

Stacey Isaac Berahzer

UNC Environmental Finance Center

berahzer@unc.edu

Skype: StaceyBerahzer

Twitter: https://twitter.com/staceyib_enviro