



Financing for the Future: Financial Longevity for Municipal Operations

Thursday, February 16, 2017
1:00 – 2:00 PM EST

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



American Water Works
Association

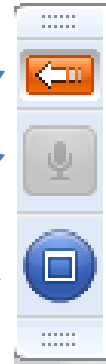
Logistics

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

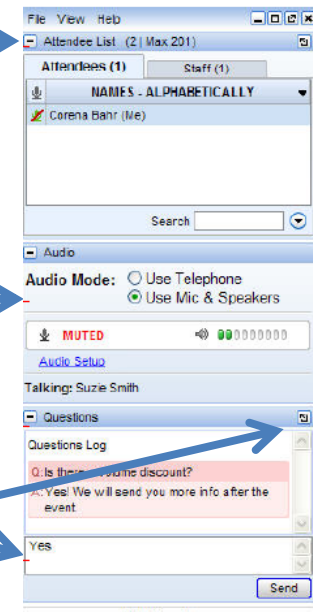


Control Panel:

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.





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.



www.efcnetwork.org



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- 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
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- EFC West
- Great Lakes Environmental Finance Center at Cleveland State University
- New England Environmental Finance Center at University of Southern Maine



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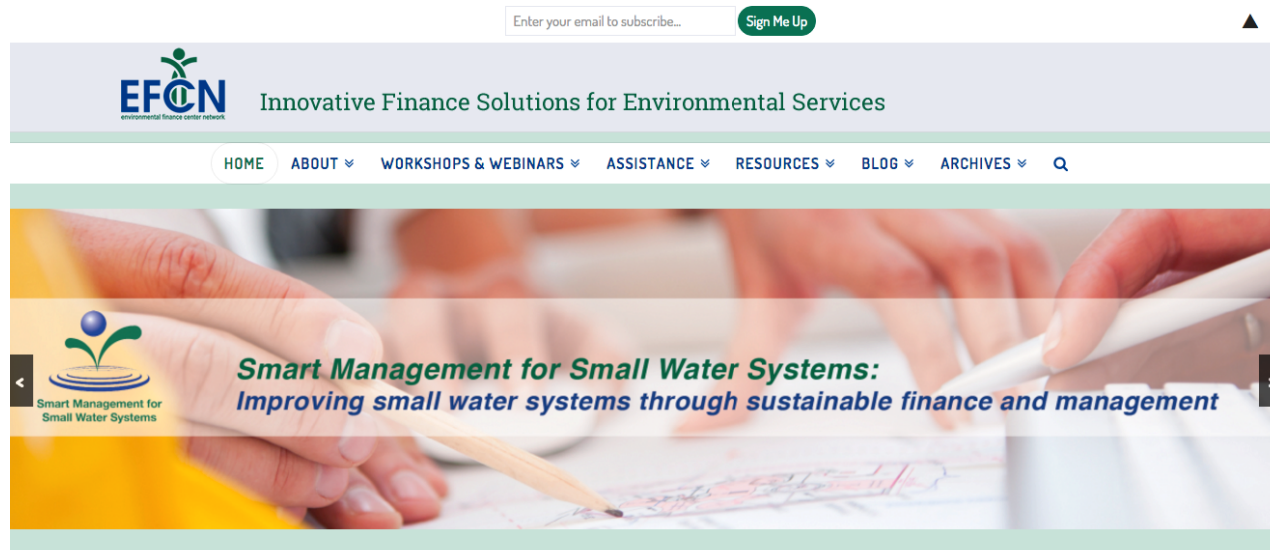
Areas of Expertise

- Asset Management
- Energy Management Planning
- Financial Management
- Leadership Through Decision-making and Communication
- Managing Drought
- Water Loss Reduction
- Collaborating with Neighboring Communities
- Multi-funding
- Water Conservation
- Management and Finance 101
- Climate Resiliency
- Workforce Development



Resources for small water systems:

www.EFCNetwork.org



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Financing for the Future: Financial Longevity for Municipal Operations



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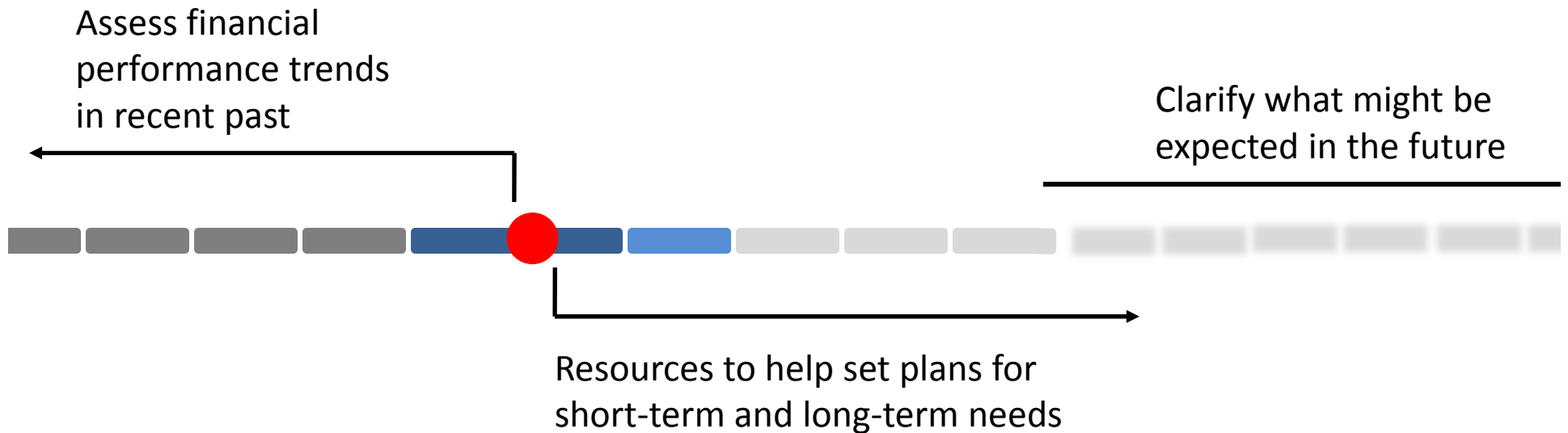


Budgeting



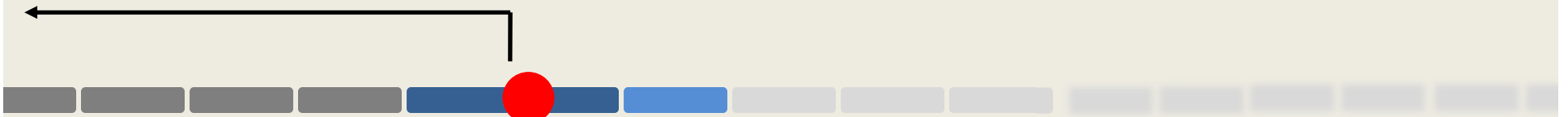


What will be covered today





Assess financial performance trends in recent past





Can you answer these questions?

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 of
Cash on Hand

Can your system meet its short term obligations?

Current
Ratio



Whiteboard video: Financial benchmarking for water utilities

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





Where do we get started?

Local governments:

annual audited financial statements

Non-governments:

balance sheets, shareholder reports, annual reports, etc.

BAVARIA STATEMENT OF NET ASSETS PROPRIETARY FUND JUNE 30, 2011	
Assets	Water and Sewer Enterprise Fund
Current Assets:	
Cash - operating	\$ 368,101
Accounts Receivable (Net)	60,346
Prepaid Insurance	5,856
Total Current Assets	434,293
Noncurrent Assets:	
Restricted cash	177,208
Capital assets	
Land	209,556
Buildings	22,082
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	38,833
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	460,505
Current Portion of Long Term Debt	343,811
Total Current Liabilities	898,474
Noncurrent Liabilities:	
Compensated Absences	15,609
Revenue Bonds (Net of current portion)	233,357
Notes Payable (Net of current portion)	646,873
Total Noncurrent Liabilities	895,839
Total Liabilities	1,794,313
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	163,267
Total fund net assets	4,633,079



Operating Ratio

OPERATING REVENUES



OPERATING EXPENSES



DEPRECIATION

ANNUAL COST OF WEAR
AND TEAR ON THE SYSTEM

Include or
Exclude

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



What is it?

DEPRECIATION

ANNUAL COST OF WEAR
AND TEAR ON THE SYSTEM

- Loss of value of an asset not restored by current maintenance
- An economic fact for every water system
- From both physical factors and functional or non-physical factors





Recorded webinar on depreciation for water systems

<https://www.youtube.com/watch?v=d8A7MJXFV1U&t=1115s>



Webinar: Demystifying Depreciation and How to Make Use of It



Operating Revenues

Operating Expenses
incl. Depreciation

> 1 ✓



Debt Service Coverage Ratio

OPERATING REVENUES – OPERATING EXPENSES
(EXCLUDING DEPRECIATION)

PRINCIPAL + INTEREST PAYMENTS
ON LONG TERM DEBT

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



Debt Service Coverage Ratio

OPERATING REVENUES – OPERATING EXPENSES
(EXCLUDING DEPRECIATION)

PRINCIPAL + INTEREST PAYMENTS
ON LONG TERM DEBT

> 1.2

Check your bond covenants
or ask your funder



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/>

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Current Ratio

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

CURRENT LIABILITIES



Current Ratio

≥ 1 ✓



All numbers can be found in the Proprietary Fund (Water/Sewer Fund) section in the audited financial statements

Example from an actual town's financial statement



Statement of Revenues, Expenses, and Changes in Net Position

Statement of Revenues, Expenses, and Changes in Fund Net Position Proprietary Fund For the Year Ended June 30, 2014		Major Enterprise Fund Water and Sewer Fund
OPERATING REVENUES		
Water sales	\$ 1,251,991	
Sewer charges	1,134,271	
Reuse water charges	50,490	
Reconnection fees and penalties	36,870	
Miscellaneous	27,664	
Total operating revenues	2,501,286	①
OPERATING EXPENSES		
Administrative	389,633	
Water operations	842,864	
Sewer treatment	541,834	
Public utilities	431,935	③
Depreciation	534,000	
Total operating expenses	2,740,266	②
Operating income (loss)	(238,980)	



Statement of Cash Flows

Statement of Cash Flows Proprietary Fund For the Year Ended June 30, 2014		Major Enterprise Fund Water and Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES		
Cash received from customers	\$ 2,723,882	
Cash paid for goods and services	(1,401,533)	
Cash paid to or on behalf of employees for services	(948,905)	
Customer deposits received	1,710	
Other operating revenues	27,664	
Net cash provided (used) by operating activities	402,818	
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Transfer to other funds	(12,000)	
Total cash flow from noncapital financing activities	(12,000)	
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Capital contribution - access fees	382,983	
Capital contribution - NC Rural Center grant	1,469	
Capital contribution - CDBG grant	12,600	
Principal paid on bonds/loans	(436,459)	4
Interest paid on bonds/loans	(55,535)	4b
Acquisition and construction of capital assets	(254,138)	
Net cash provided (used) by capital and related financing activities	(349,080)	
CASH FLOWS FROM INVESTING ACTIVITIES		
Investment in investments	2,100	



Statement of Net Position

Statement of Net Position Proprietary Fund June 30, 2014		Major Enterprise Fund Water and Sewer Fund
ASSETS		
Current assets:		
Cash and cash equivalents		\$ 2,415,013
Accounts receivable (net) - billed		319,598
Accounts receivable (net) - unbilled		56,817
Due from other governments		150,201
Prepaid items	c)	14,811
Restricted cash and cash equivalents	b)	169,675
Total current assets	a)	3,126,115
Noncurrent assets:		
Capital assets:		
Land and construction in progress		2,870,862
Other capital assets, net of depreciation		10,090,950
Capital assets		12,961,812
Total noncurrent assets		12,961,812
Total assets		\$ 16,087,927
LIABILITIES		
Current liabilities:		
Accounts payable and accrued liabilities		109,426
Accrued bond interest		5,134
Customer deposits	e)	49,292
Current portion of long-term debt		432,459
Total current liabilities	d)	596,311
Noncurrent liabilities:		

$$(a) - (b) - (c) = 5$$

$$(d) - (e) = 6$$



Important: don't just look at last year

Example. Last fiscal year's ratios:

- Operating ratio = 1.02
- Debt service coverage ratio = 1.15
- Days cash on hand = 145
- Current ratio = 1.2



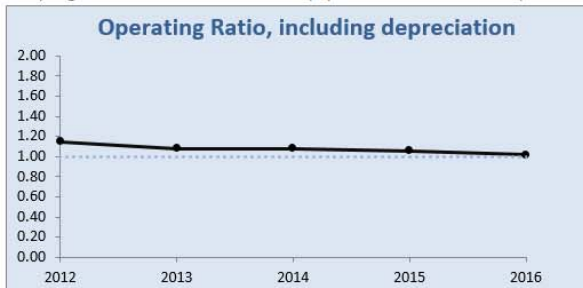
Potential conclusion: “we’re on the right track”



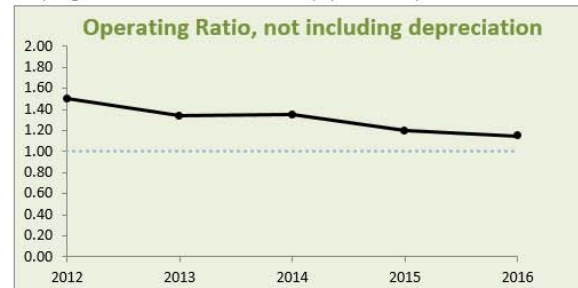
But consider the trends in the last 5 years

Assessment for Example utility

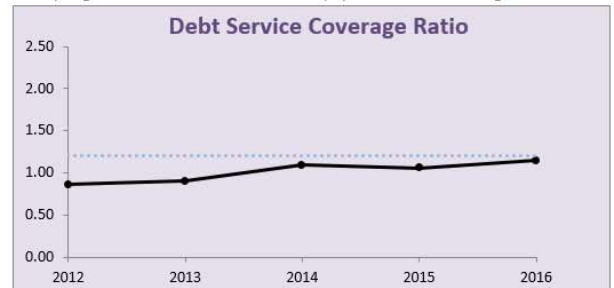
Did you generate the revenues needed to pay for O&M and a little for capital?



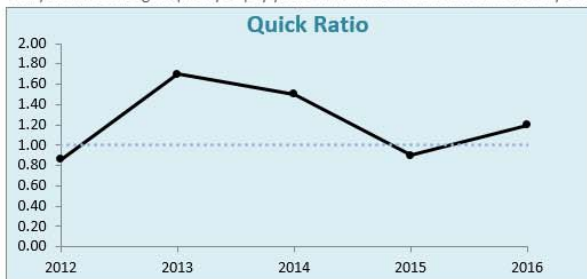
Did you generate the revenues needed to pay for O&M by itself?



Did you generate the revenues needed to pay for O&M and existing debt service?



Did you have enough liquidity to pay your current liabilities at the end of the year?



How many days could you continue to operate the utility with the cash levels available?



New conclusion: “we were OK, but something needs to change”





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

 **Smart Management for Small Water Systems**
A resource for water systems through the Environmental Finance Center Network's Smart Management for Small Water Systems project, funded under a cooperative agreement with the U.S. Environmental Protection. <http://efcnetwork.org>

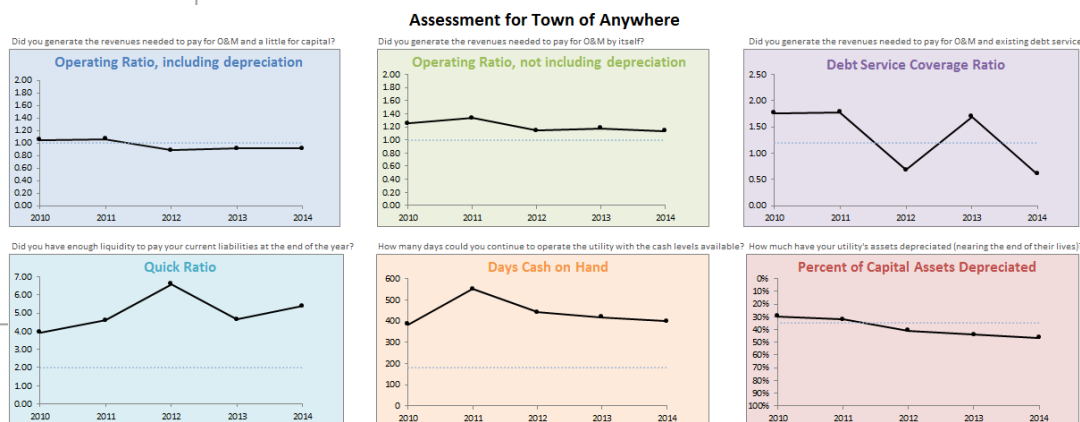
What does this tool do?
This tool assists in the assessment of the financial performance of a water (and/or wastewater) utility fund. Financial data readily available in annual financial statements are copied into this tool, which computes key financial indicators that measure a variety of important 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)
6 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** 

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.



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Tool: Financial Health Checkup for Water Utilities

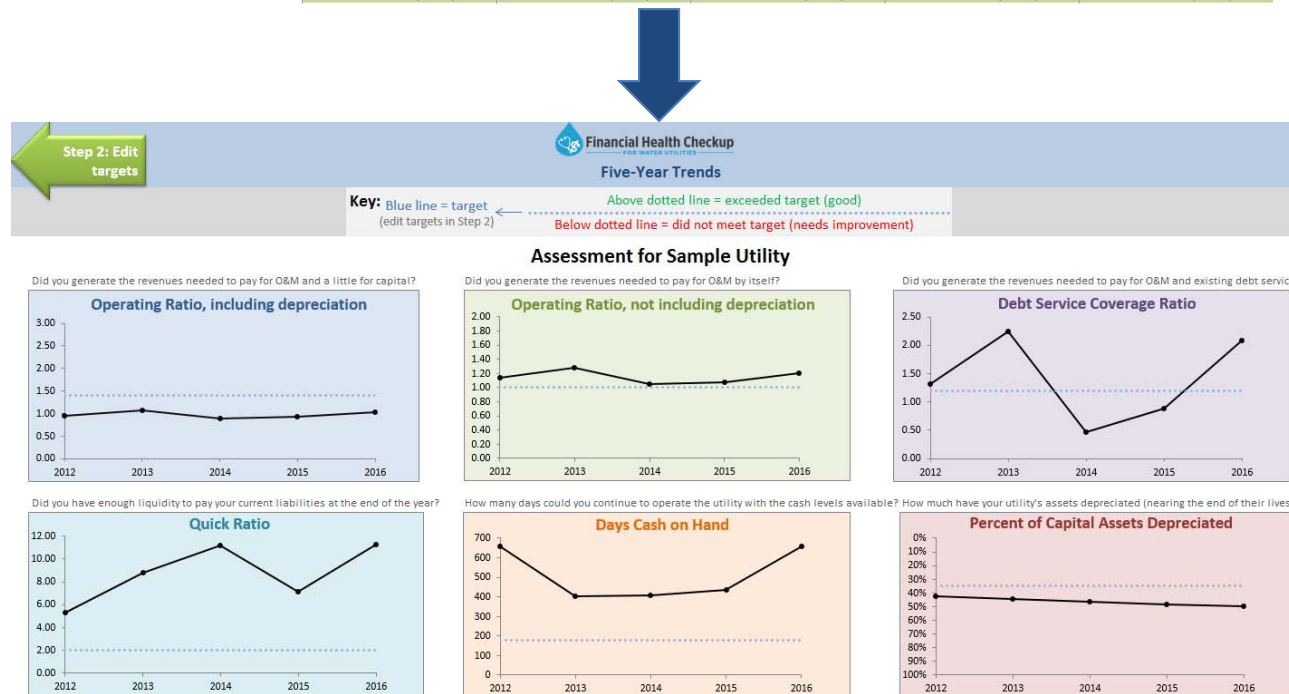
key Field in the financial statement/LARF

- [1] Total Operating Revenues
- [2] Total Operating Expenses
- [3] Depreciation & Amortization Expenses
- [4] Debt Principal Payments
- [4b] Debt Interest Payments
- [5] Current Assets, excluding inventories, restricted cash, prepaids
- [6] Current Liabilities, excluding deposits & bond anticipation notes
- [7] Unrestricted Cash & Investments
- [8] Total Accumulated Depreciation
- [9] Total Depreciable Capital Assets

	2012	2013	2014	2015	2016
[1] Total Operating Revenues	\$ 3,984,193	\$ 3,965,968	\$ 3,901,253	\$ 4,459,727	\$ 5,074,590
[2] Total Operating Expenses	\$ 4,165,641	\$ 3,736,470	\$ 4,378,937	\$ 4,789,087	\$ 4,896,441
[3] Depreciation & Amortization Expenses	\$ 681,808	\$ 635,807	\$ 656,255	\$ 668,160	\$ 684,561
[4] Debt Principal Payments	\$ 323,177	\$ 331,520	\$ 339,490	\$ 342,512	\$ 265,342
[4b] Debt Interest Payments	\$ 55,289	\$ 53,350	\$ 47,011	\$ 38,474	\$ 147,909
[5] Current Assets, excluding inventories, restricted cash, prepaids	\$ 6,614,237	\$ 4,004,526	\$ 4,756,504	\$ 5,362,317	\$ 7,808,389
[6] Current Liabilities, excluding deposits & bond anticipation notes	\$ 1,247,456	\$ 456,465	\$ 425,164	\$ 750,171	\$ 691,223
[7] Unrestricted Cash & Investments	\$ 6,297,233	\$ 3,406,963	\$ 4,149,266	\$ 4,929,329	\$ 7,580,205
[8] Total Accumulated Depreciation	\$ 12,976,114	\$ 13,611,921	\$ 14,268,176	\$ 14,936,336	\$ 15,620,897
[9] Total Depreciable Capital Assets	\$ 30,575,353	\$ 30,686,885	\$ 30,867,768	\$ 30,994,872	\$ 31,291,993

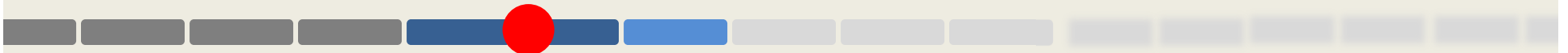
Instructions

Enter as shown in the Total Operating
Enter as shown in the Total Operating
Depreciation and amortization are list
Enter \$0 if there were no debt service
Enter \$0 if there were no debt service
Total Current Assets minus all invento
Total Current Liabilities minus all refu
Unrestricted Cash & Investments (and
Total accumulated depreciation on ca
Enter the total value of capital assets





Clarify what might be expected in the future

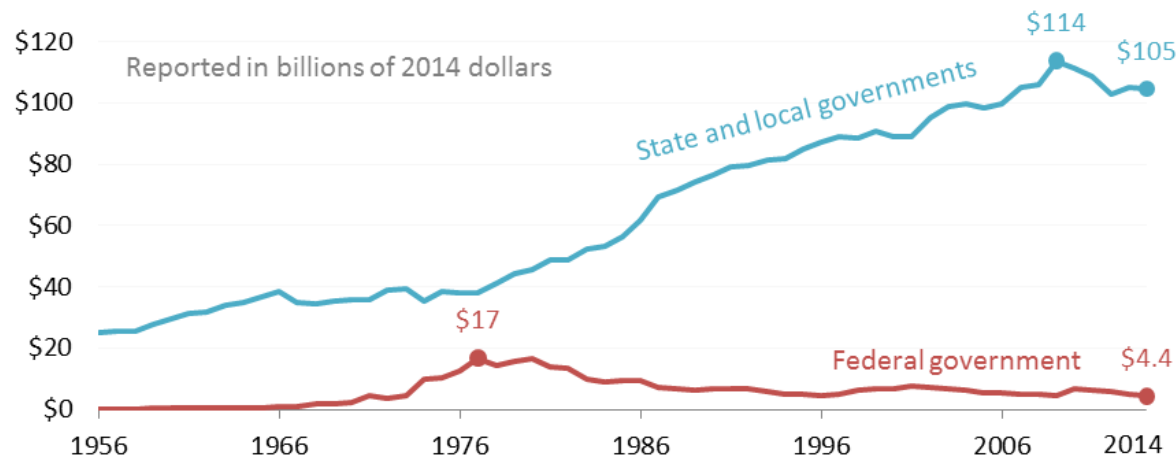




The onus will continue to be on local governments to pay for their own infrastructure

State and local government spending on water and wastewater utilities continued to grow while federal spending declined since the 1980s

State and local governments spent 24 times as much as the federal government in 2014



Graphed by the Environmental Finance Center at the University of North Carolina, Chapel Hill.

Source: Congressional Budget Office supplemental data for the *Public Spending on Transportation and Water Infrastructure, 1956 to 2014* report (March 2015). Displays public spending on supply systems for distributing potable water as well as wastewater and sewage treatment systems and plants. Real spending is shown after adjusting nominal spending to their 2014 dollar equivalent using infrastructure-specific price indexes.



<http://efc.web.unc.edu/2015/09/09/four-trends-government-spending-water/>
www.efcnetwork.org



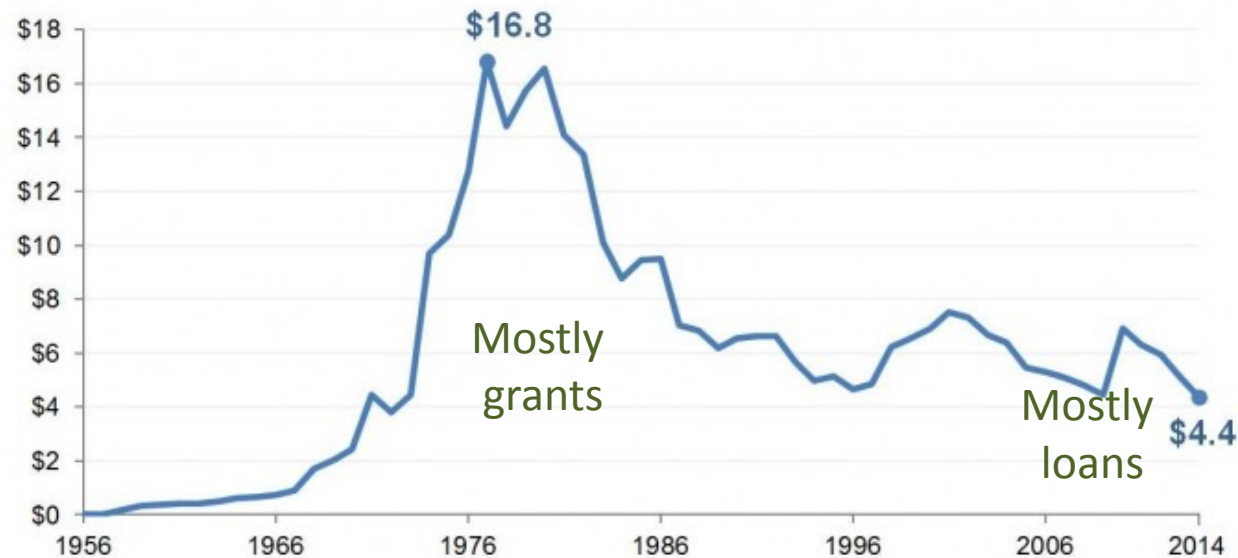
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Federal funding has declined.

Federal spending on water and wastewater utility infrastructure decreased in the 1980s and after 2000

Reported in billions of 2014 dollars



Source: Congressional Budget Office (March 2015), Public Spending on Transportation and Water Infrastructure, 1956 to 2014.

<http://efc.web.unc.edu/2015/05/14/federal-funding-trends-for-water-and-wastewater/>



<http://efc.web.unc.edu/2015/09/09/four-trends-government-spending-water/>

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Source: Congressional Budget Office supplemental data for the *Public Spending on Transportation and Water Infrastructure, 1956 to 2014* report (March 2015). Displays public spending on supply systems for distributing potable water as well as wastewater and sewage treatment systems and plants. Real spending is shown after adjusting nominal spending to their 2014 dollar equivalent using infrastructure-specific price indexes.

Four Trends in Government Spending on Water and Wastewater Utilities Since 1956

SEPTEMBER 9, 2015 / SHADI ESKAF / 0 COMMENTS

 Print  PDF

According to data collected and published by the Congressional Budget Office (CBO), federal, state and local governments in the United States spent more than \$2.2 trillion in the last 59 years on operations, maintenance and capital infrastructure of water and wastewater utilities. That equates to more than \$4 131 000 000 000 in 2014 dollars adjusting for inflation of infrastructure-



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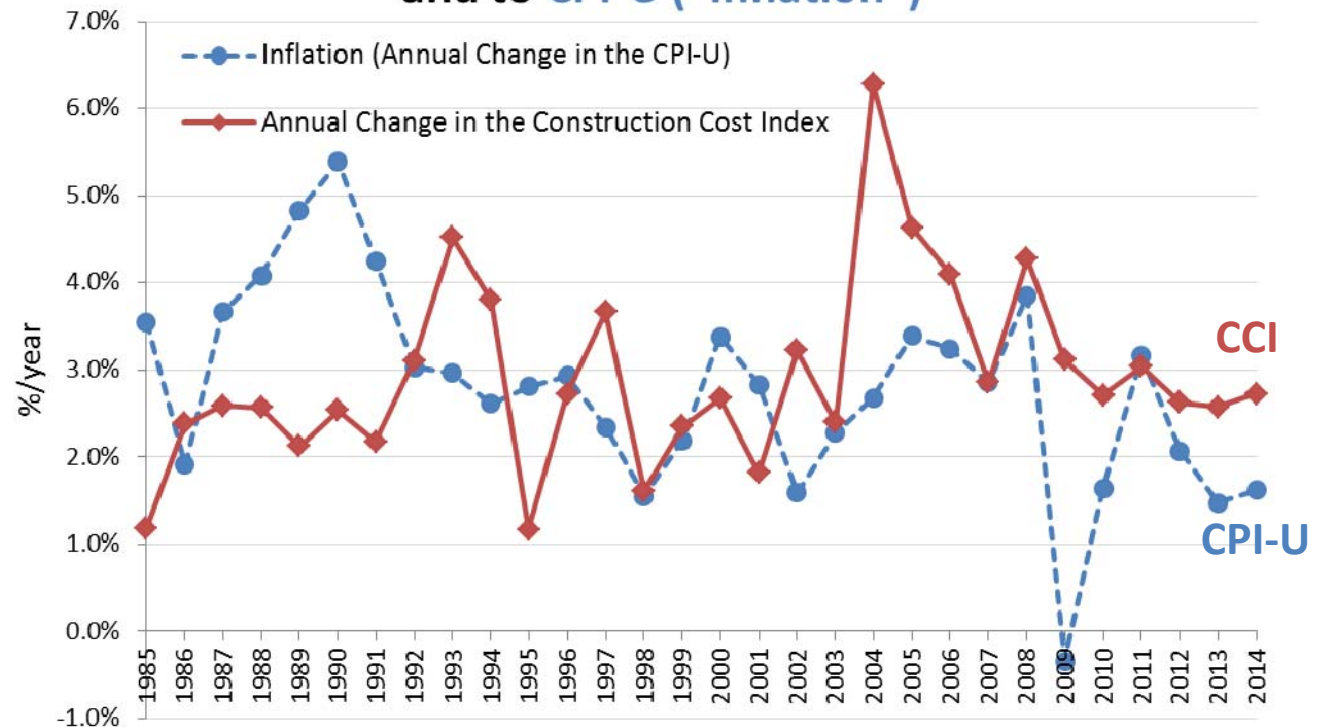
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Annual Changes to the Construction Cost Index and to CPI-U ("Inflation")

Nationally, construction costs are growing at a little less than 3%/year (CCI).

Faster than the “rate of inflation” (CPI-U).



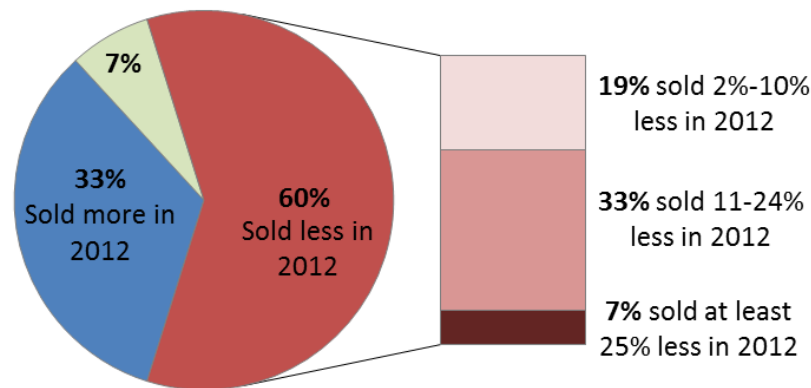
Data analyzed by the Environmental Finance Center at the University of North Carolina, Chapel Hill.
Data Sources: Bureau of Labor Statistics, Engineering News-Record ENR.com, InflationData.com, USDA Natural Resources Conservation Services.

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



Water use is declining for many systems. Could mean lower revenues.

**Total Water Volume Sales in 2012 Compared to 2006 in
129 Utilities Nationwide**



Data analyzed by the Environmental Finance Center at the University of North Carolina, Chapel Hill and Raftelis Financial Consultants, Inc. Data Source: Biennial, national AWWA-RFC Water and Wastewater Rate Surveys in 2006 and 2012. Water utilities that reported their total daily gallons sold (MGD) in 2006 and 2012 are included in this analysis. 81% of the sampled utilities increased total number of accounts from 2006 to 2012.

Source: EFC *Environmental Finance* blog post “Even Total Water Demand is on the Decline at Many Utilities”
<http://efc.web.unc.edu/2014/04/15/total-water-demand-on-the-decline/>



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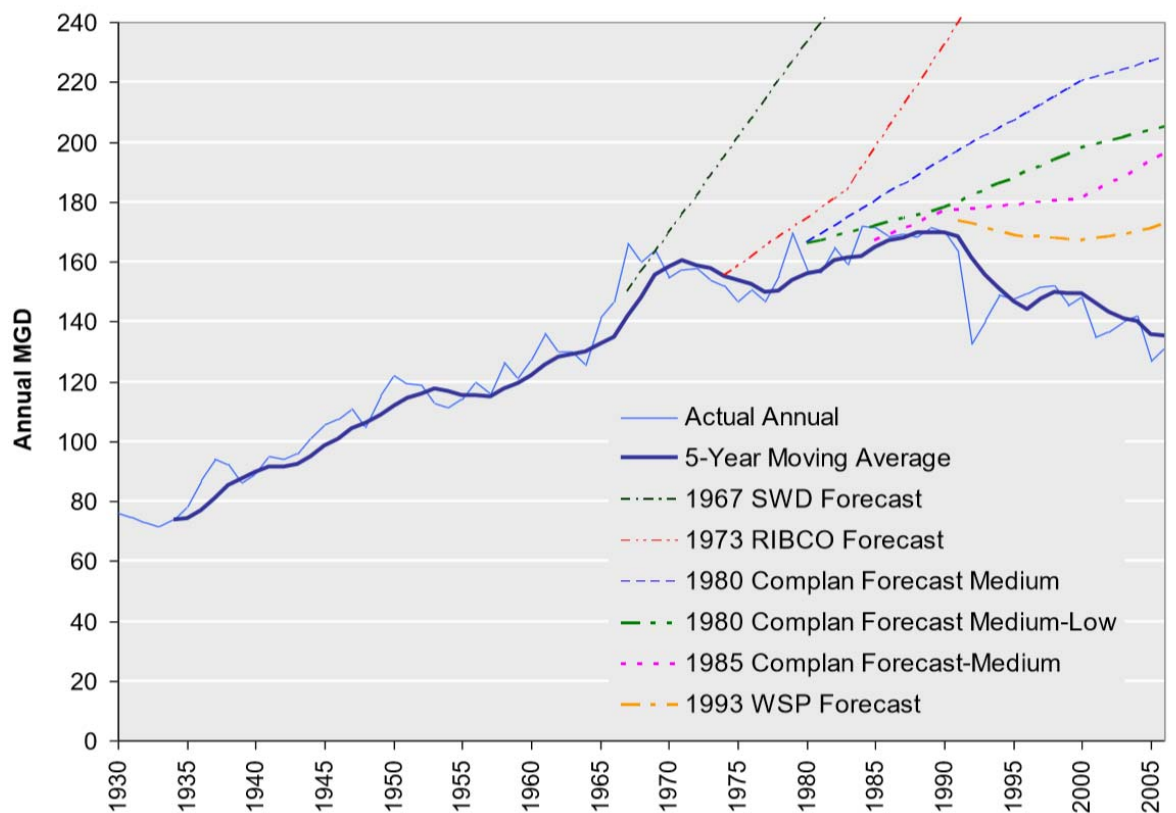


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Seattle's demand forecasts

Water Demand & Forecasts: 1930-2006





Long-term planning for municipalities is critical

Growing operations and maintenance expenses

Capital expenses to rehab/replace existing infrastructure

Capital expenses to add new infrastructure

Changing customer base

Changing demand patterns

Demographics and conditions

Sources of (capital) funding and priorities



Focus on capital planning

Growing operations and maintenance expenses

Capital expenses to rehab/
replace existing infrastructure

Capital expenses to add new infrastructure

Changing customer base

Changing demand patterns

Demographics and conditions

Sources of (capital) funding
and priorities



Two things all water systems should
(or even must) do:

Asset Management Planning
&
Capital Improvement Planning



Five Core Components of AM



- 1) Current State of the Assets
- 2) Level of Service
- 3) Criticality
- 4) Life Cycle Costing
- 5) Long-Term Funding



Current state of the assets

List all of your 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?



Example of an Asset Inventory

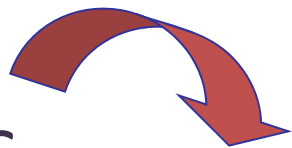
Asset Inventory

ID Number	Category	Type	Size	Manufacturer	Serial Number	Location	Installation Date	Condition	Energy user Y/N (if Yes, see Energy Inventory)	Comments



Level of service

Involve
Customers



Measurable
Goals: Internal
and External



Track Progress
Towards
Meeting Goals

Involve
Staff



What would my customers want?



Criticality – 2 parts

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

What is the **consequence** if the asset does fail?





Criticality – 2 parts





Prioritize asset rehabilitation / replacement

Example System Inventory Worksheet							Prioritization Worksheet		
Date Worksheet Completed/Updated: 8/14/02									
Asset	Expected Useful Life	Condition	Service History	Adjusted Useful Life	Age	Remaining Useful Life	Importance	Redundancy	Priority (1 is high)
Well 1 (1993)	30	Good		30	9	21	Needed for service	Other well, but need backup	6
Well 1 pump	10	Good	Rehab (1996)	10	9	1	Needed for service	Other well, but need backup	3
Well 2 (1993)	30	Good		30	9	21	Needed for service	Other well, but need backup	6
Well 2 pump	10	Good	Rehab (1998)	10	9	1	Needed for service	Other well, but need backup	3
Pumphouse (1993)	30	Good		30	9	21	Needed for service	Other well, but need backup	6
Electrical components	10	Some corrosion	Rehab (1994)	10	9	1	Needed for control	No redundancy - corrosion	2
Chlorinator (1993)	10	Good	Rehab (1998)	5	3	2	Mandatory	No redundancy - need backup	1
Storage tank 1 (1993)	40	Good	Rehab (2000) - \$17,000	40	9	31	eed for fire flow and demand	Other tanks	6
Storage tank 2 (1993)	40	Good	Rehab (2000) - \$17,000	40	9	31	eed for fire flow and demand	Other tanks	6
Storage tank 3 (2000)	40	Almost new		40	2	38	eed for fire flow and demand	Other tanks	6
Distribution System:									
Hydrants (15)	40	Unknown		40	9	11	Needed for public safety	Other hydrants	5
Valves (45)	40	Unknown	6 valves don't work	40	9	11	Needed for isolation	Other valves, but some are out of service	4
6-inch (PVC)	60	Unknown		60	9	51	Needed for delivery	No redundancy	6
4-inch (PVC)	60	Unknown		60	9	51	Needed for delivery	No redundancy	6
2-inch (PVC)	60	Unknown	Repair breaks (2/year)	60	9	51	Needed for delivery	No redundancy	6



Asset Management Plan (AMP)

- Once assets are prioritized, come up with a timeline to replace or rehabilitate your current assets in grouped projects
- AMPs can be for 20+ years – as long as necessary
- You don't have to figure out how to pay for everything 20 years from now, but...



Capital Improvement Plan (CIP)

An official multi-year document that identifies and prioritizes capital projects in the near future, identifies funding sources, and sets timelines for projects.

Include projects not listed in the AMP.



Example of a simple Capital Improvement Plan

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



How to pay for capital improvements

- Pay as you go (current receipts)
- Save in advance and pay (reserve funds)
- Pay later (someone loans you money)
- Grants (let someone else pay)



Typical sources of external funding

Bonds

Revenue bonds, GO bonds

Loans

From banks, or can be subsidized:
e.g. WIFIA, USDA, SRFs (EPA/State), State agencies

Grants

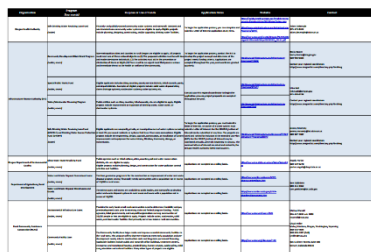
From agencies:
e.g. CDBG (HUD), EDA, ARC, State agencies

Funding Sources by State

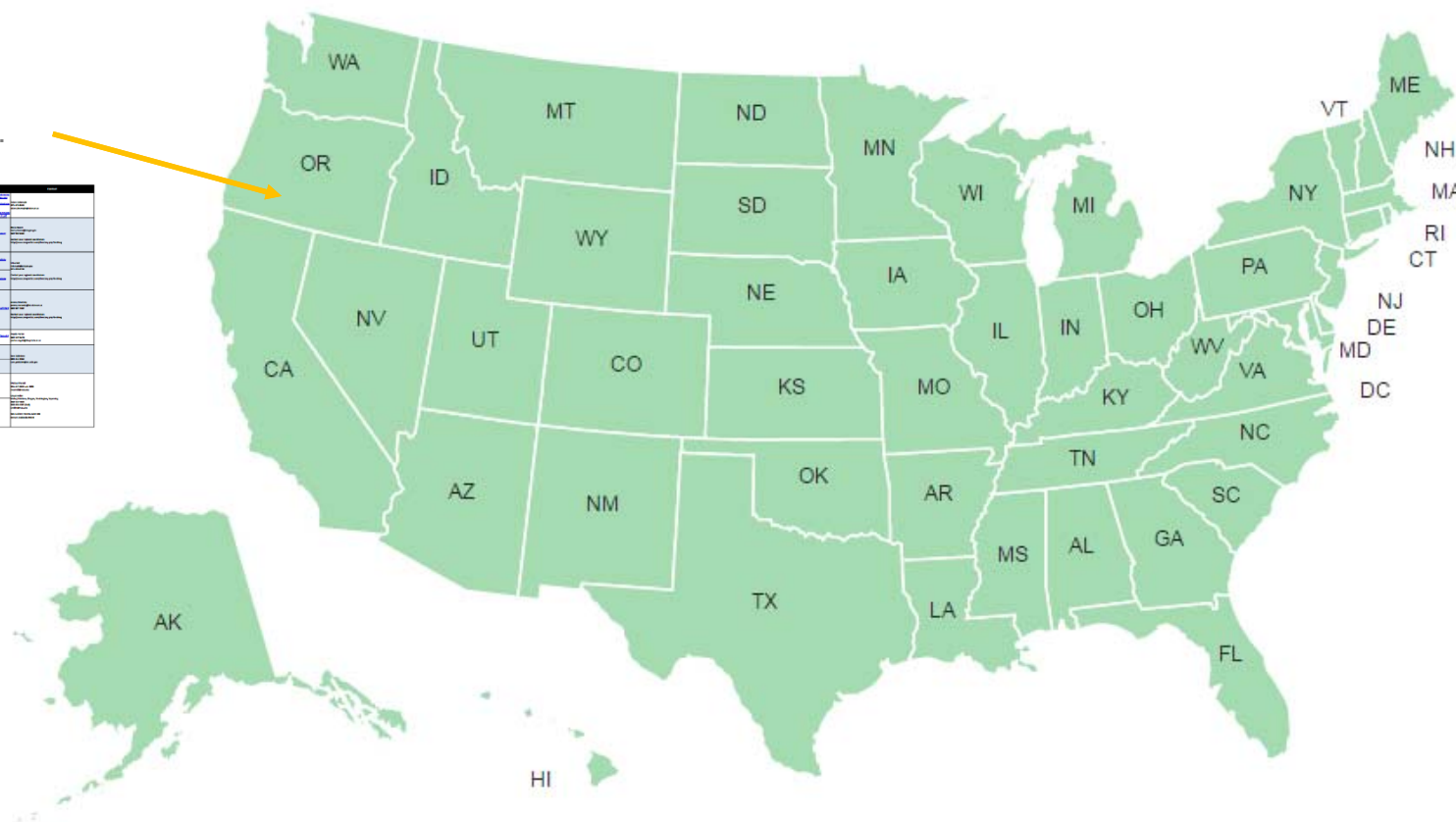
Note: Some states may have additional resources listed below the map.

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

Click on an individual state to view funding table.

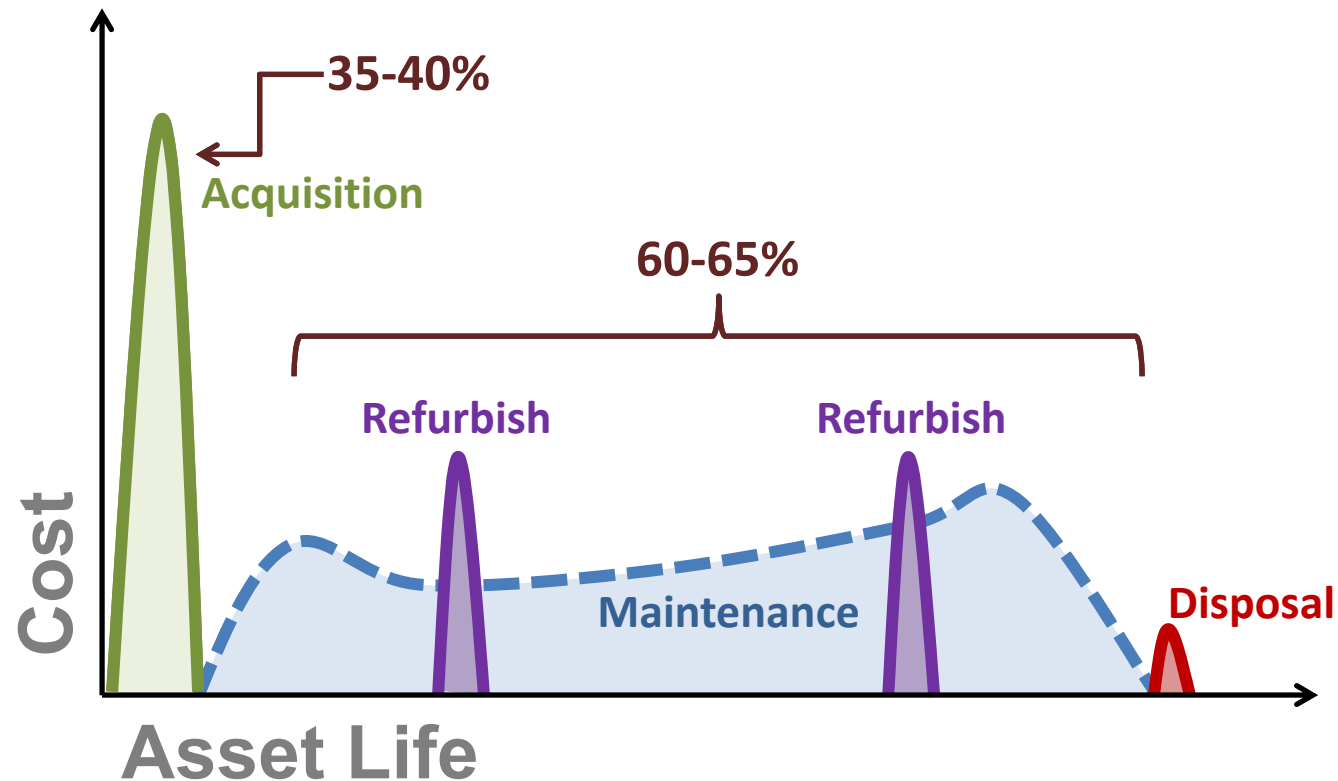


Funding Source	Description	Contact	Link
State of Oregon	State of Oregon Department of Environmental Quality	John Smith	Link
Local Government	City of Portland	Jane Doe	Link
Non-Profit	Portland Water Bureau	Bob Johnson	Link
Academic	University of Oregon	Alice Brown	Link






Capital investments are just the tip of the iceberg...



Source: Adapted from Steve Allbee, USEPA



Resources to help set plans for short-term and long-term needs




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


Free, simplified Excel tool allowing you to track and benchmark financial performance metrics for your water/sewer fund in the past 5 years

Financial Health Checkup for Water Utilities



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Developed by the Environmental Finance Center
at the University of North Carolina, Chapel Hill
<http://efc.sog.unc.edu>



A resource for water systems through the Environmental Finance Center Network's
Smart Management for Small Water Systems project, funded under a cooperative
agreement with the U.S. Environmental Protection. <http://efcnetwork.org>

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 this tool, which computes 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)
- 6 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.






Funding Sources by State

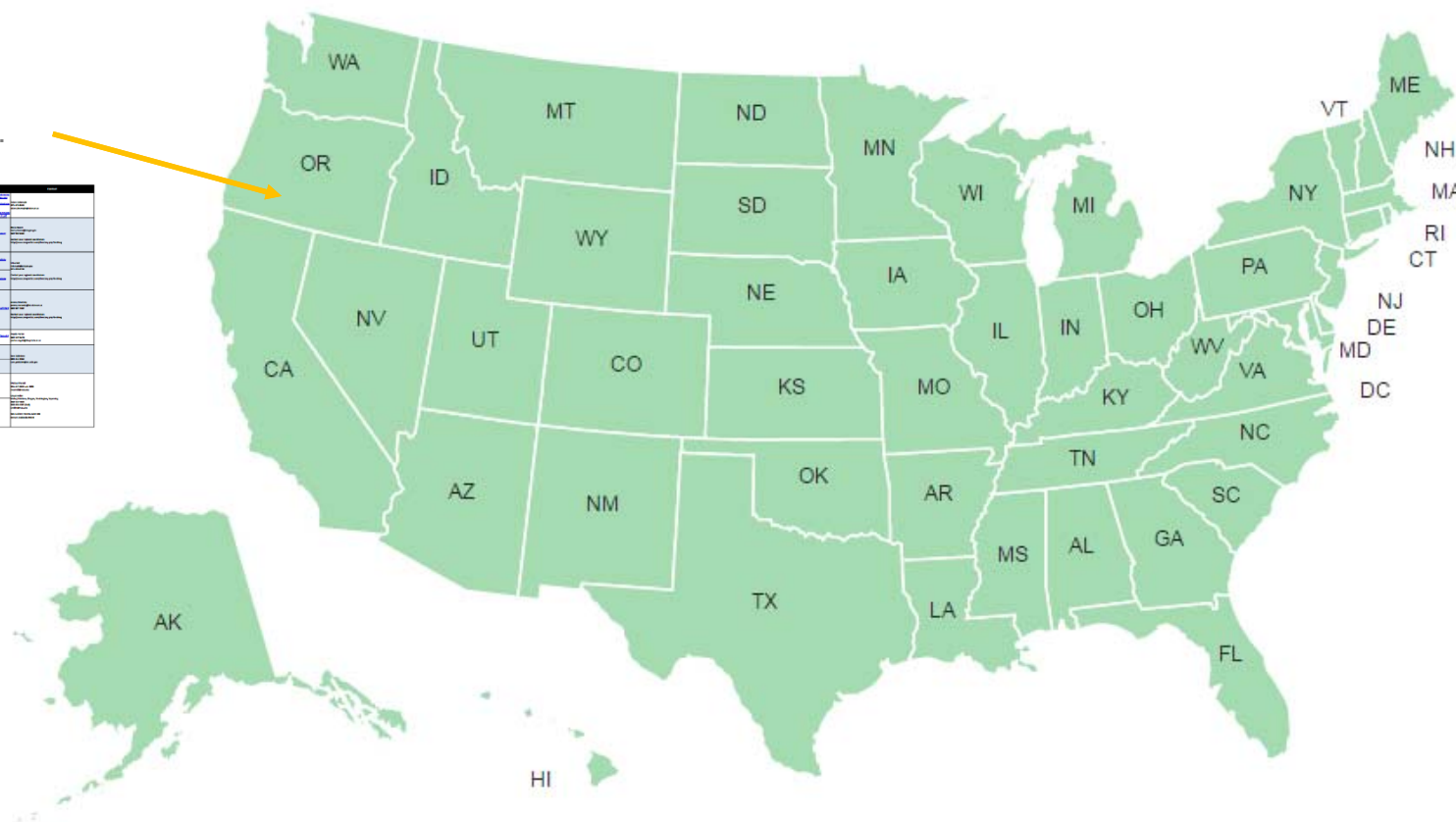
Note: Some states may have additional resources listed below the map.

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

Click on an individual state to view funding table.



State	Funding Source	Amount	Year	Notes
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon
OR	State of Oregon	\$1,000,000	2010	State of Oregon






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

Water & Wastewater Rates Analysis Model
Version 2.8.2 (last updated August 4, 2015)



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Developed by the Environmental Finance Center at the University of North Carolina, Chapel Hill
<http://efc.sog.unc.edu>



Funded by the U.S. Environmental Protection Agency and the Public Water Supply Section of the North Carolina Department of Environment and Natural Resources

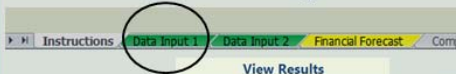
DESCRIPTION
A do-it-yourself, simplified financial model to assist utility managers and private system owners in setting water and wastewater rates.

FEATURES

- Comparisons of annual fund balance projections (for up to 20 years) under proposed new rates vs. staying with existing rates
- Adjust rates for the next 1-5 years
- Model changes to accounts and water use
- Compare monthly bills under new rates vs. existing rates
- Up to 12 rate structures
- Customizable list of operating and capital expenses
- Assess revenue sufficiency and fund balance
- Uniform or block rates (up to 10 blocks)
- Building up reserves through rates
- Error notifications

INSTRUCTIONS

1) Navigate using worksheet tabs at bottom of screen or following arrows and clicking on buttons




View Results

Financial forecast of the next few years under "Existing" rates versus "New" rates (graphs of cost recovery and end-of-year fund balance)

How new rates compare to existing rates (graphs of monthly bills)

2) In the green "Data Input" worksheets, input data in the dark green cells



Watch out for red "Error" messages describing where data entry errors



AWE Sales Forecasting and Rate Model

Available at

<http://www.financingsustainablewater.org/>

FINANCING SUSTAINABLE WATER
Rates. Revenue. Resources.

A project of the
Alliance for Water Efficiency

HOME WATER EFFICIENCY BUILDING RATES IMPLEMENTATION FISCAL SUSTAINABILITY **TOOLS** RESOURCE SEARCH

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AWE Sales Forecasting and Rate Model

Rate Model Video Tutorials

Request Tools

Rate Model User Guide

Appendices: Costing Methods, Demand Forecasting and Revenue Modeling

Communications Tools

RATES HANDBOOK
Building Better

AWE Sales Forecasting and Rate Model

The AWE Sales Forecasting and Rate Model is a new analytical tool that can explicitly model the effects of rate structures. Typical water rate models assume that future sales are known with certainty, and do not respond to price, weather, the economy, or supply shortages — that is to say, not the world we live in. The AWE Sales Forecasting and Rate Model addresses this deficiency and enables analysis of the following:

- Customer Consumption Variability – weather, drought/shortage, or external shock
- Demand Response – Predicting future block sales (volume and revenue) with empirical price elasticities
- Drought Pricing – Contingency planning for revenue neutrality
- Probability Management – Risk theoretic simulation of revenue risks
- Fiscal Sustainability – Sales forecasting over a 5 Year Time Horizon

The Rate Design Module can answer these questions:

- What effect would increasing the top tier rate by 15% have on water demand?
- Will shifting to seasonal rates cause water use to increase or decrease?
- What block rate design could allow us to preserve our current level of revenue while reducing demand?
- How should we adjust rates to support our water demand management objectives during water shortages?
- What proportion of customer bills will

The output shows a table with columns for 'Change in demand and revenue across three scenarios for customer class' and 'AWE Sales Forecasting and Rate Model'. Below the table is a bar chart titled 'Single Family Customer Class Bill Impact Management' showing the percentage of bills in different revenue ranges.



Plan to Pay: Scenarios to Fund your C.I.P.

<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 list your capital projects and plans for funding them, and automatically estimates rate increases

Tool developed by
UNC ENVIRONMENTAL FINANCE CENTER

Plan to Pay: Scenarios to Fund your C.I.P. (Capital Improvement Plan)

Version 2.6 (Updated November 2015)

20-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

Start

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.

INSTRUCTIONS

FINANCED
\$ 950,000
\$ 750,000

Pre-Exist
Input amount incurred for

CAPITAL IMPROVEMENT PROJECTS - 20 YEARS

Project	Project Description	Project Start Year	Project End Year	Project Cost (\$)	Annual Construction Cost (\$)	Annual Construction Cost Factor	Estimated Cost at the Start Year	Estimated Cost at the End Year
1	Water main replacement	2015	2016	100,000	100,000	1.0	100,000	100,000
2	Water main replacement	2017	2018	100,000	100,000	1.0	100,000	100,000
3	Water main replacement	2019	2020	100,000	100,000	1.0	100,000	100,000
4	Water main replacement	2021	2022	100,000	100,000	1.0	100,000	100,000
5	Water main replacement	2023	2024	100,000	100,000	1.0	100,000	100,000
6	Water main replacement	2025	2026	100,000	100,000	1.0	100,000	100,000
7	Water main replacement	2027	2028	100,000	100,000	1.0	100,000	100,000
8	Water main replacement	2029	2030	100,000	100,000	1.0	100,000	100,000
9	Water main replacement	2031	2032	100,000	100,000	1.0	100,000	100,000
10	Water main replacement	2033	2034	100,000	100,000	1.0	100,000	100,000
11	Water main replacement	2035	2036	100,000	100,000	1.0	100,000	100,000
12	Water main replacement	2037	2038	100,000	100,000	1.0	100,000	100,000
13	Water main replacement	2039	2040	100,000	100,000	1.0	100,000	100,000
14	Water main replacement	2041	2042	100,000	100,000	1.0	100,000	100,000
15	Water main replacement	2043	2044	100,000	100,000	1.0	100,000	100,000
16	Water main replacement	2045	2046	100,000	100,000	1.0	100,000	100,000
17	Water main replacement	2047	2048	100,000	100,000	1.0	100,000	100,000
18	Water main replacement	2049	2050	100,000	100,000	1.0	100,000	100,000
19	Water main replacement	2051	2052	100,000	100,000	1.0	100,000	100,000
20	Water main replacement	2053	2054	100,000	100,000	1.0	100,000	100,000

Estimated Rate Changes Needed to Maintain the Fund Balance

	FY15	FY16	FY17	FY18
Year Increase (Decrease) in Rate Base and Investment	N/A	0.0%	0.1%	2.0%
Increase (Decrease) in the Monthly Bill for 5,000 Gallons	N/A	\$0.00	\$1.01	\$0.79
Increase (Decrease) in the Monthly Rate Charge	N/A	\$0.00	\$0.04	\$0.34
Monthly Rate Charge ("Minimum Charge")	\$12.34	\$12.34	\$12.98	\$13.31
Volume Rate at 5,000 gallons/month (\$1000 gallons)	\$5.67	\$5.67	\$5.96	\$6.11
Volume Included with the Base Charge (1,000 of gallons)	2	2	2	2
Approximate Monthly Charge for 5,000 gallons (\$)	\$29.35	\$29.35	\$30.96	\$31.65

Projected Fund Balance

	FY15	FY16	FY17	FY18
Total Revenues	\$ 515,000	\$ 503,589	\$ 528,307	\$ 554,888
Rate Charges	\$ 1,776,960	\$ 1,795,322	\$ 1,807,288	\$ 1,919,733
Usage Charges	\$ 3,153,840	\$ 3,094,086	\$ 3,216,188	\$ 3,281,762
Interest Earned from Previous Year's Positive Balance	\$ 5	\$ 9,405	\$ 9,167	\$ 9,007
Revenues from Other Sources (Reserve Charges)	\$ 103,200	\$ 104,266	\$ 106,348	\$ 108,431
Total Revenues, including Projected	\$ 5,448,005	\$ 5,406,668	\$ 5,667,296	\$ 5,864,001

Expected Revenues and Expenses - FY15

Annual Operating and Non-Operating Revenues: \$ 5,448,005
Annual Non-Capital Expenses (SOG Admin, etc.): \$ 4,525,000
Expected Annual Balance of Revenues (Projected): \$ 923,005

Usage Billed to Customers in FY15

Input the residential customer water & sewer rates at 5,000 gallons/month of use for FY15. General use monthly rates.

Volume Rate at 5,000 gallons/month (\$1000 gallons): \$ 5.67
Monthly Rate Charge ("Minimum Charge"): \$ 12.34

Financial Reserves (End of Year)

Line graph showing financial reserves over time.

Rate Increases

Bar chart showing rate increases over time.

Total Capital Expenses

Bar chart showing total capital expenses over time.

Total Cumulative System Investment

Line graph showing total cumulative system investment over time.



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](#)

[Create or Update My Schematic](#)

[Create or Update My Inventory](#)

[Print My Check Up Reports](#)

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

[Search Asset and Maintenance](#)

[Enter My Finances](#)

[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



Guidebooks on setting rates/financial planning



Setting Small Drinking Water System Rates for a Sustainable Future

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



<http://www.awwa.org>



<http://www.epa.gov/safewater/smallsystems>

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



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<https://www.epa.gov/dwcapacity/asset-management-resources-small-drinking-water-systems>



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Compliance Help

Capacity Development
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Asset Management Resources for Small Drinking Water Systems

Asset management is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them, while delivering the service level customers desire. This management framework has been widely adopted by the water sector as a means to pursue and achieve sustainable infrastructure.

The documents and tools below explain the benefits of asset management and ways to implement specific asset management practices for small systems.

You may need Adobe Reader to view files on this page. See EPA's [About PDF page](#) to learn more.

- [Asset Management: A Best Practices Guide](#)

(PDF) (1.1 MB) (April 2008, EPA 816-F-08-014)



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https://www.epa.gov/sites/production/files/2016-04/documents/am_tools_guide_may_2014.pdf



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Resource Webpage for Capital Planning

www.efc.sog.unc.edu/ Search for "Capital Planning"

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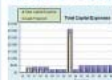
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Mission Statement

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, p
Support projec
Department of
together many
water and wast
creation of a C
Management P

Blog Post on "Using an Index to Future"

Read a short blog post on selecting an appropriate

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

Categories	EPA's Asset Management: A Handbook for Small Water Systems	WPA's Vop 1000 Facility's Capital Budgeting and Finance Guide	DEHM PWS Capacity Development Program	DEHM PWS Loans and Grants	G.S. 156-23	USDA Loans and Grants	NC Rural Economic Development Center	Local Government Commission 100C Form	DEHM DWA Local Water Supply Plans	EPA Software: CIPSS
Goal statement/Introduction to your capital plan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date of documentation of capital plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Capital planning time period	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Description of systems	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Existing capacity and demand	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Description of customers	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Inventory of existing assets (details on each asset)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Condition of systems	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Project-specific details (complete for each project in every year)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Financial planning (complete for each year in time period)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Long-term planning descriptions (may be not project-specific)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Approvals	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Updating the capital plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ties or links to other studies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

Created by the Environmental Finance Center at the UNC School of Government



www.efcnetwork.org





Environmental Finance blogs

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

or http://efcnetwork.org/small_systems_blog/



SEARCH RESULTS: "RACHEL BAUM"



The Revenue Ups and Downs of the Water Business

AUGUST 19, 2015 / RACHEL BAUM / 2 COMMENTS

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Written by: David Tucker

David Tucker is a Project Director at the Environmental Finance Center at the University of North Carolina at Chapel Hill.



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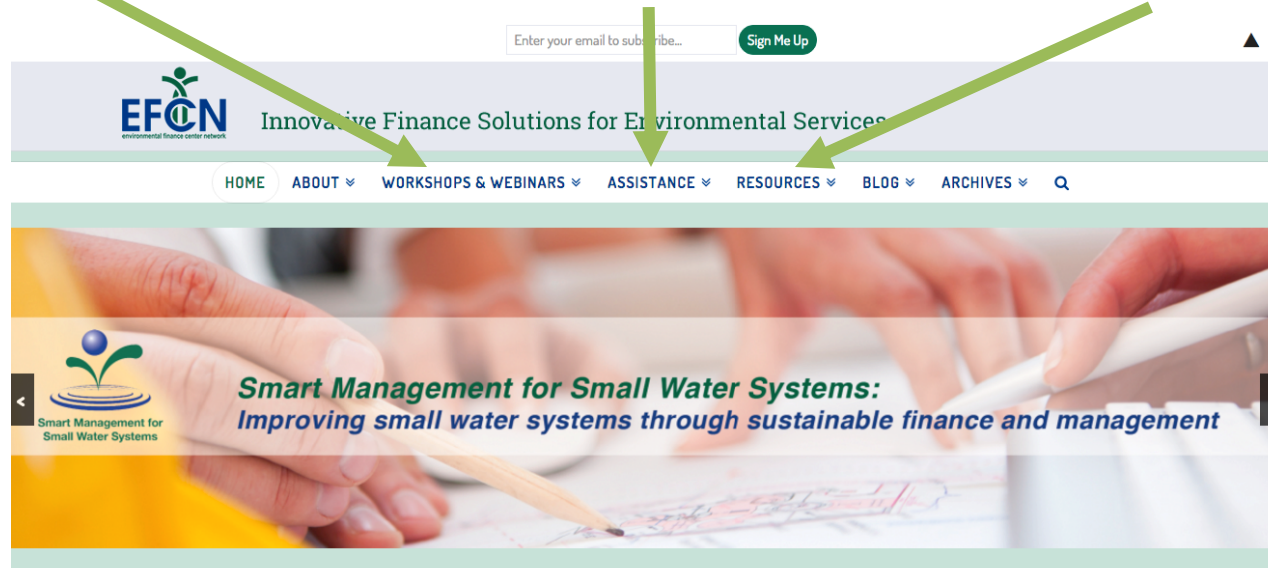


Small water systems: www.EFCNetwork.org

Workshops, webinars,
and recordings

Sign up for free in-depth
(multi-day or multi-hour)
direct assistance

Collection of resources for
small water systems
(tools, guides)



Free, thanks to
a cooperative
agreement with
the U.S. E.P.A.



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Financing for the Future: Financial Longevity for Municipal Operations

Shadi Eskaf

Senior Project Director

Environmental Finance Center at the University of North Carolina,
Chapel Hill

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