



Smart Management for  
Small Water Systems

# Assessing the Financial Condition of your Water System Fund

Columbia, South Carolina  
Thursday, May 12, 2016

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



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# Objectives

- Know how to translate data in your financial statements to indicators that assess the overall financial health of your utility fund
- Interpret the indicator values to determine the strengths and weaknesses of the utility fund



# Can You Sleep at Night?

Is your system self sufficient?

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

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

Can your system meet its short term obligations?

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

Operating Ratio

Debt Service Coverage Ratio

Days Cash on Hand

Current Ratio

Asset Depreciation



# Whiteboard Video: Financial Benchmarking for Water Utilities

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





# Recording of a Webinar: Key Financial Indicators

<http://efcnetwork.org/events/webinar-is-your-water-system-financially-healthy-key-financial-indicators/>



## Key Financial Indicators

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# 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)

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**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)

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**PRINCIPAL + INTEREST PAYMENTS**  
ON LONG TERM DEBT

**> 1.2**



# Can your system meet its short term obligations?



# Current Ratio

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

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**CURRENT LIABILITIES**



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



# Days Cash on Hand

**UNRESTRICTED CASH AND INVESTMENTS**

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



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

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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

Assets	Water and Sewer Enterprise Fund	
<b>Current Assets:</b>		
Cash - operating	\$ 568,001	③
Accounts Receivable (Net)	60,346	
Prepaid Insurance	5,856	⑤
<b>Total Current Assets</b>	<u>640,203</u>	
<b>Noncurrent Assets:</b>		
Restricted cash	177,208	
<b>Capital assets</b>		
Land	209,556	
Buildings	22,982	
Improvements other than buildings	5,873,769	⑦
Machinery and equipment	896,073	
Construction in progress	1,454,079	
Less: Accumulated depreciation	(2,883,225)	⑧
Deferred Charge	39,833	
<b>Total noncurrent assets</b>	<u>5,781,215</u>	
<b>Total Assets</b>	<u>6,421,418</u>	
<b>Liabilities</b>		
<b>Current Liabilities:</b>		
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	
<b>Total Current Liabilities</b>	<u>899,474</u>	⑥
<b>Noncurrent Liabilities:</b>		
Compensated Absences	15,605	
Revenue Bonds (Net of current portion)	233,357	
Notes Payable (Net of current portion)	646,823	
<b>Total Noncurrent Liabilities</b>	<u>895,825</u>	
<b>Total Liabilities</b>	<u>1,795,299</u>	
<b>Fund Net assets</b>		
Invested in capital assets, net of related debt	4,355,133	
Restricted for debt service	114,583	
Unrestricted	163,361	
<b>Total fund net assets</b>	<u>\$ 4,633,077</u>	



# 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



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.

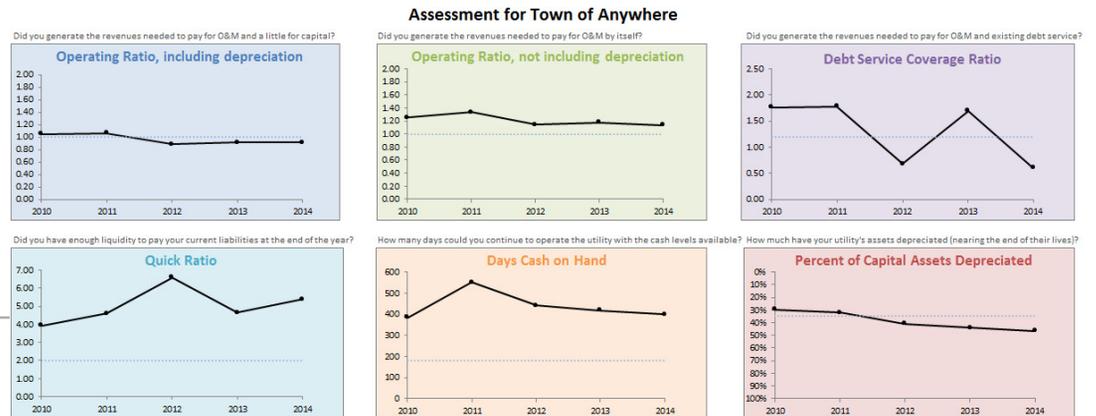
**Features:**  
Simple data entry (uses data already reported in your audited financial statements)  
6 financial performance indicators with explanations  
Set your own targets  
Assessment of last year's financial ratios, improvements since previous year, and five-year trends  
Guided navigation through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

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





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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# Key Financial Indicators Exercise

Use your own audited financial statements (if available)  
or use the financial statements of Bavaria from the handouts

And use the worksheet in the handout

**Key Financial Indicators Exercise**  

**1. Operating Ratio**  
Operating ratio measures self-sufficiency. The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running.  
Natural Benchmark: > 1.0; higher preferred

1a. 
$$\frac{\text{Operating Revenues (1)}}{\text{Operating Expenses (including depreciation) (2)}} = \text{[ ]}$$

1b. 
$$\frac{\text{Operating Revenues (1)}}{\text{Operating Expenses (excluding depreciation) (2-3)}} = \text{[ ]}$$

**2. Debt Service Coverage Ratio**  
A measure of the ability to pay debt service with operating revenue  
Natural Benchmark: > 1.0, though funders often set requirements above 1.0 (usually >1.2)

2. 
$$\frac{\text{Operating Revenues (1)} - \text{Operating Expenses (2-3) (excluding depreciation)}}{\text{Principal \& Interest on Long-Term Debt (4)}} = \text{[ ]}$$



# Quick Overview of Financial Statements

MAYBERRY STATEMENT OF NET ASSETS PROPRIETARY FUNDS DECEMBER 31, 2010		BAYARIA STATEMENT OF NET ASSETS PROPRIETARY FUND JUNE 30, 2011	
ASSETS		Water and Sewer Enterprise Fund	
Current Assets		\$ 368,001	(7)
Accounts receivable, net	201,130	60,346	(8)
Total current assets	201,130	5,856	(9)
Capital Assets		640,203	(10)
Land and Improvements	10,227		
Distribution and Collection Systems	5,745,840		
Other Infrastructure	12,500,337		
Total capital assets	18,356,384		
Total Assets	\$ 4,607,538	177,208	
LIABILITIES		209,556	
Current Liabilities		22,682	(11)
Accounts payable	9,252	5,873,709	(12)
Deferred revenues	41,225	896,073	(13)
Total current liabilities	50,477	1,454,079	(14)
Long-Term Liabilities		(2,883,225)	(15)
Bonds Payable	100,000	30,833	
Total long-term liabilities	100,000	5,781,214	(16)
Total Liabilities	\$ 4,607,538	6,471,271	
NET ASSETS			
Invested in capital assets net of related debt	17,856,384		
Unrestricted net assets	50,154		
Total net assets	\$ 4,607,538		
Total liabilities and net assets	\$ 4,607,538		
The accompanying notes are an integral part of these financial statements.			
		15,605	
		233,357	
		646,873	
		889,024	
		1,788,299	
		4,355,133	
		114,583	
		163,263	
		\$ 4,633,079	



# Statement of Net Assets

- The assets and liabilities of the water system on the day the financial statements were prepared



# Statement of Revenues, Expenses & Changes in Net Assets

- Annual operating and non-operating revenues and expenses for the water system
- Also transfers to and from the general fund



# Statement of Cash Flows

- Money in and money out of the water system



# Notes to Financial Statements

- Explanations, where needed, to the financial statements



# Calculate the Operating Ratio

**Key Financial Indicators Exercise** | UNC | EFCN

**1. Operating Ratio**  
 Operating ratio measures self-sufficiency. The revenue you get from daily operations, divided by the expenditures or expenses you need to keep operations running.  
 Natural Benchmark = 1.0; higher preferred

1a.  $\frac{\text{Operating Revenues (2)}}{\text{Operating Expenses (including depreciation) (2)}} =$

1b.  $\frac{\text{Operating Revenues (2)}}{\text{Operating Expenses (excluding depreciation) (2)}} =$

**2. Debt Service Coverage Ratio**  
 A measure of the ability to pay debt service with operating revenue.  
 Natural Benchmark = 1.0; though lenders often set requirements above 1.0 (usually 1.2)

2.  $\frac{\text{Operating Revenues (2)}}{\text{Operating Expenses (2) (including depreciation)}} =$

Principal & Interest on Long-Term Debt (2)

**OPERATING REVENUES**

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**OPERATING EXPENSES**

**DEPRECIATION**

ANNUAL COST OF WEAR AND TEAR ON THE SYSTEM

Include or Exclude

Please calculate two numbers—one including depreciation, and one excluding depreciation



# Operating Ratio - Bavaria

$$\begin{array}{r} \boxed{\$709,972} \\ \text{Operating Revenues (1)} \\ \hline \boxed{\$671,333} \\ \text{Operating Expenses (including depreciation) (2)} \end{array} = \boxed{1.06}$$

1a.



# Operating Ratio – Bavaria

Excluding Depreciation

**1b.** 
$$\frac{\$709,972}{\$459,082} = 1.55$$

Operating Revenues (1)

Operating Expenses (excluding depreciation) (2-3)

OE \$671,333  
- DEP \$212,251



# Calculate the Debt Service Coverage Ratio

**Key Financial Indicators Exercise**

**1. Operating Ratio**  
 Operating ratio measures self-sufficiency. The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running.  
 Natural Benchmark = 1.0; higher preferred

1a.  $\frac{\text{Operating Revenues (O)}}{\text{Operating Expenses (including depreciation) (E)}}$  =

1b.  $\frac{\text{Operating Revenues (O)}}{\text{Operating Expenses (including depreciation) (E)}}$  =

**2. Debt Service Coverage Ratio**  
 A measure of the ability to pay debt service with operating revenue.  
 Natural Benchmark = 1.0; though lenders often set requirements above 1.0 (usually 1.2)

2.  $\frac{\text{Operating Revenues (O)}}{\text{Operating Expenses (E) + Principal \& Interest on Long-Term Debt (D)}}$  =

**OPERATING REVENUES - OPERATING EXPENSES**  
 (EXCLUDING DEPRECIATION)

**PRINCIPAL + INTEREST PAYMENTS**  
 ON LONG TERM DEBT



# Debt Service Coverage Ratio – Bavaria

OE \$671,333  
- Dep \$212,251

$$\begin{array}{r}
 \boxed{\$709,972} - \boxed{\$459,082} \\
 \text{Operating Revenues (1)} \quad \text{Operating Expenses (2-3)} \\
 \text{(excluding depreciation)} \\
 \hline
 \boxed{2.} \quad \quad \quad = \quad \boxed{1.32} \\
 \boxed{\$190,633} \\
 \text{Principal \& Interest on Long-Term Debt (4)}
 \end{array}$$



# Calculate Days of Cash on Hand

**Key Financial Indicators Exercise** | UNC | EFCN

**1. Operating Ratio**  
Operating ratio measures self-sufficiency. The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running.  
National Benchmark = 1.0; higher preferred

1a.  $\frac{\text{Operating Revenue (O)}}{\text{Operating Expenses (including depreciation) (E)}} =$

1b.  $\frac{\text{Operating Revenue (O)}}{\text{Operating Expenses (excluding depreciation) (E-)}} =$

**2. Debt Service Coverage Ratio**  
A measure of the ability to pay debt service with operating revenue.  
National Benchmark = 1.0, though lenders often set requirements above 1.0 (usually 1.2)

2.  $\frac{\text{Operating Revenue (O)}}{\text{Operating Expenses (E-)} + \text{Principal \& Interest on Long-Term Debt (D)}} =$

UNRESTRICTED CASH AND INVESTMENTS

OPERATING EXPENSES EXCLUDING  
DEPRECIATION & AMORTIZATION / 365



# Days Cash on Hand – Bavaria

$$\begin{array}{r} \boxed{3.} \quad \boxed{\$568,061} \\ \text{Unrestricted Cash \& Cash Equivalents (5)} \\ \hline \boxed{\$459,082} \quad / \quad 365 \\ \text{Operating Expenses (excluding depreciation) (2-3)} \end{array} = \boxed{452}$$

OE \$671,333  
- DEP \$212,251



# Calculate the Current Ratio

**Key Financial Indicators Exercise**  

**1. Operating Ratio**  
Operating ratio measures self-sufficiency. The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running.  
Natural Benchmark > 1.0, higher preferred

**1a.**  $\frac{\text{Operating Revenue (2)}}{\text{Operating Expenses (including depreciation) (2)}} = \frac{\text{[ ]}}{\text{[ ]}}$

**1b.**  $\frac{\text{Operating Revenue (2)}}{\text{Operating Expenses (including depreciation) (2-4)}} = \frac{\text{[ ]}}{\text{[ ]}}$

**2. Debt Service Coverage Ratio**  
A measure of the ability to pay debt service with operating revenue.  
Natural Benchmark > 1.0, though lenders often set requirements above 1.0 usually > 1.2

**2.**  $\frac{\text{Operating Revenue (2)}}{\text{Operating Expenses (2-4) (including depreciation) (2-4)}} = \frac{\text{[ ]}}{\text{[ ]}}$

Principal & interest on Long-Term Debt (4)

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

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**CURRENT LIABILITIES**



# Current Ratio – Bavaria

$$4. \frac{\$568,061 + \$66,346}{\$898,474} = 0.71$$

*Unrestricted Cash & Cash Equivalents (5)*      *Receivables, net (6)*

*Current Liabilities (7)*



# What Happened to Bavaria?

*Or*

# Why the Notes to Financial Statements are Crucial

The accompanying notes are an integral part  
of these financial statements.

15



# Bavaria's Current Ratio corrected

C \$568,061  
+ G \$460,005

$$\begin{array}{r} \boxed{\$1,028,066} + \boxed{\$66,346} \\ \text{Unrestricted Cash \& Cash Equivalentts (5)} \quad \text{Receivables, net (6)} \\ \hline \boxed{4.} \quad \hline \boxed{\$898,474} \\ \text{Current Liabilities (7)} \end{array} = \boxed{1.22}$$



# Why Care About This?

- Setting rates and financial planning: as you think about the future needs of your system, you have to know where you are starting from
- Monitor system's financial performance to detect any negative trends (long-term)
- Funders care about these ratios → lower interest rates
- Accountable to your customers



# For More Information

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