



Assessing Financial Condition

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu



Session Objectives

- Understanding where your water system is right now financially
- Learning some standard measures that funders will be concerned with



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 utility's expected life has already run out (and how much is left)?

Operating Ratio

Debt Service
Coverage Ratio

Days Cash on
Hand

Current
Ratio


Asset
Depreciation



Whiteboard Video: Financial Benchmarking

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





A Tale of Two Systems That Look Similar On Paper...

- **Bavaria** and **Mayberry**
- Two average small town community water systems from the same state

Note: Actual numbers from actual towns



They Serve Similar Populations

Service
Population

Bavaria

1313

Mayberry

1508

Service
Connections

Bavaria

505

Mayberry

580



They Have Similar Demographics

MHI



Percent
Poverty



...Though Vastly Different in
Financial Indicators (and In
Actual Appearance)



Mayberry



Bavaria

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			
Current Assets			
Accounts receivable, net	244,130		
Prepaid expenses	44,825		
Total current assets	288,955		
Capital Assets			
Land and improvements	10,229		
Distribution and collection systems	5,732,840		
Buildings	15,500,334		
Less accumulated depreciation	(12,534,935)		
Total capital assets	8,708,468		
Total Assets	\$ 9,000,000		
LIABILITIES			
Current Liabilities			
Accounts payable	9,332		
Customer deposits	44,825		
Accounts payable - current	58,839		
Total current liabilities	113,000		
Noncurrent Liabilities			
Bonds payable	8,886,968		
Total noncurrent liabilities	8,886,968		
Total Liabilities	\$ 9,000,000		
Net Assets			
Invested in capital assets, net of related debt	2,848,217		
Restricted for debt service	114,583		
Unrestricted	5,957,200		
Total net assets	\$ 9,000,000		
The accompanying notes are an integral part of these financial statements.			
15			

Water and Sewer Enterprise Fund	
\$	568,001
	60,346
	5,856
	640,203
	177,208
	209,556
	22,982
	5,873,769
	896,073
	1,454,079
	(2,883,225)
	39,833
	5,781,215
	5,781,215
	5,781,215

	15,605
	233,357
	646,873
	889,825
	1,788,299
	4,355,133
	114,583
	163,267
\$	4,633,072



Statement of Net Position

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



Statement of Revenues, Expenses & Changes in Net Position

- 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



Operating Ratio

$$= \frac{\textit{Operating Revenues}}{\textit{Operating Expenses}}$$

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

Operating Ratio

Including Depreciation

MAYBERRY
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2010

	<u>Enterprise Funds</u> <u>Water and Sewer</u>	
OPERATING REVENUES		
Charges for services	\$ 444,231	
Grants	0	
Total operating revenues	<u>444,231</u>	- ①
OPERATING EXPENSES		
Personnel services	178,885	
Contractual services	63,898	
Other supplies and expense	126,202	- ③
Depreciation	<u>142,463</u>	- ②
Total operating expenses	<u>511,448</u>	
Operating income (loss)	<u>(67,217)</u>	



Operating Ratio – Mayberry

Including Depreciation

1a.

$$\frac{\$444,231}{\$511,448} = 0.87$$

Operating Revenues (1)

Operating Expenses (including depreciation) (2)

Operating Ratio

Excluding Depreciation

MAYBERRY
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2010

	<u>Enterprise Funds</u> <u>Water and Sewer</u>	
OPERATING REVENUES		
Charges for services	\$ 444,231	
Grants	0	
Total operating revenues	<u>444,231</u>	- ①
OPERATING EXPENSES		
Personnel services	178,885	
Contractual services	63,898	
Other supplies and expense	126,202	③
Depreciation	<u>142,463</u>	- ②
Total operating expenses	<u>511,448</u>	
Operating income (loss)	<u>(67,217)</u>	

Operating Ratio – Mayberry

Excluding Depreciation

1b.

$$\frac{\$444,231}{\$368,985} = 1.20$$

Operating Revenues (1)

Operating Expenses (excluding depreciation) (2-3)

OE \$511,448
- Dep \$142,463



Debt Service Coverage Ratio

$$= \frac{\text{Operating Revenues} - \text{Operating Expenditures (excludes depreciation)}}{\text{Principal} + \text{Interest Payments on Long Term Debt}}$$

Debt Service Coverage Ratio

MAYBERRY

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS PROPRIETARY FUNDS FOR THE YEAR ENDED DECEMBER 31, 2010

OPERATING REVENUES
Charges for services
Grants
Total operating revenues

OPERATING EXPENSES
Personnel services
Contractual services
Other supplies and expense
Depreciation
Total operating expenses
Operating income (loss)

CASH FLOWS FROM OPERATING ACTIVITIES
Receipts from customers
Payments to suppliers
Payments to employees
Net cash provided by operating activities

CASH FLOWS FROM NONCAPITAL

FINANCING ACTIVITIES

Transfers in (out)
Net cash (used) by noncapital
financing activities

CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES

Loan proceeds
Purchases of capital assets
Principal paid on capital debt
Interest paid on capital debt
Net cash (used) by capital and
related financing activities

Enterprise Funds Water and Sewer

\$ 437,947
(187,296)
(178,885)
71,766

(60,000)
(60,000)

0
(39,841)
(49,655)
(35,128)
(124,624)

Page 1 of 2

④

Debt Service Coverage Ratio

– Mayberry

OE \$511,448
- Dep \$142,463

\$444,231 - \$368,985

Operating Revenues (1) Operating Expenses (2-3)
(excluding depreciation)

2.

\$84,783

Principal & Interest on Long-Term Debt (4)

0.89

P \$49,655
+ I \$35,128



Days of Cash on Hand

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

Days of Cash on Hand

MAYBERRY
STATEMENT OF NET ASSETS
PROPRIETARY FUND
DECEMBER 31, 2010

Enterprise Funds
Water and Sewer

ASSETS

Current assets

Cash

107,706

Restricted cash

176,424

Receivables, net

41,870

Total current assets

326,000

Capital assets

Land and improvements

10,229

Distribution and collection systems

5,732,845

Buildings

503,398

Less accumulated depreciation

(2,514,933)

Total capital assets

3,731,539

Total Assets

\$ 4,057,539

LIABILITIES

Days of Cash on Hand – Mayberry

$$\begin{array}{rcccl} \boxed{3.} & \frac{\boxed{\$107,706}}{\boxed{\$368,985} / 365} & = & \boxed{107} \\ & \text{Unrestricted Cash \& Cash Equivalents (5)} & & \\ & \text{Operating Expenses (excluding depreciation) (2-3)} & & \end{array}$$

OE \$511,448
- Dep \$142,463



Current Ratio

$$= \frac{\text{Unrestricted cash and cash equivalents} + \text{Receivables, net}}{\text{Current Liabilities}}$$

Current Ratio – Mayberry

$$\begin{array}{rcl} \boxed{\$107,706} & + & \boxed{\$41,870} \\ \text{Unrestricted Cash \& } & & \text{Receivables, net (6)} \\ \text{Cash Equivalents (5)} & & \\ \hline \boxed{4.} & & \boxed{1.38} \\ \boxed{\$108,390} & & \\ \text{Current Liabilities (7)} & & \end{array}$$



Now You Calculate For **Bavaria**



Operating Ratio – Bavaria

Including Depreciation

1a.

\$709,972

Operating Revenues (1)

\$671,333

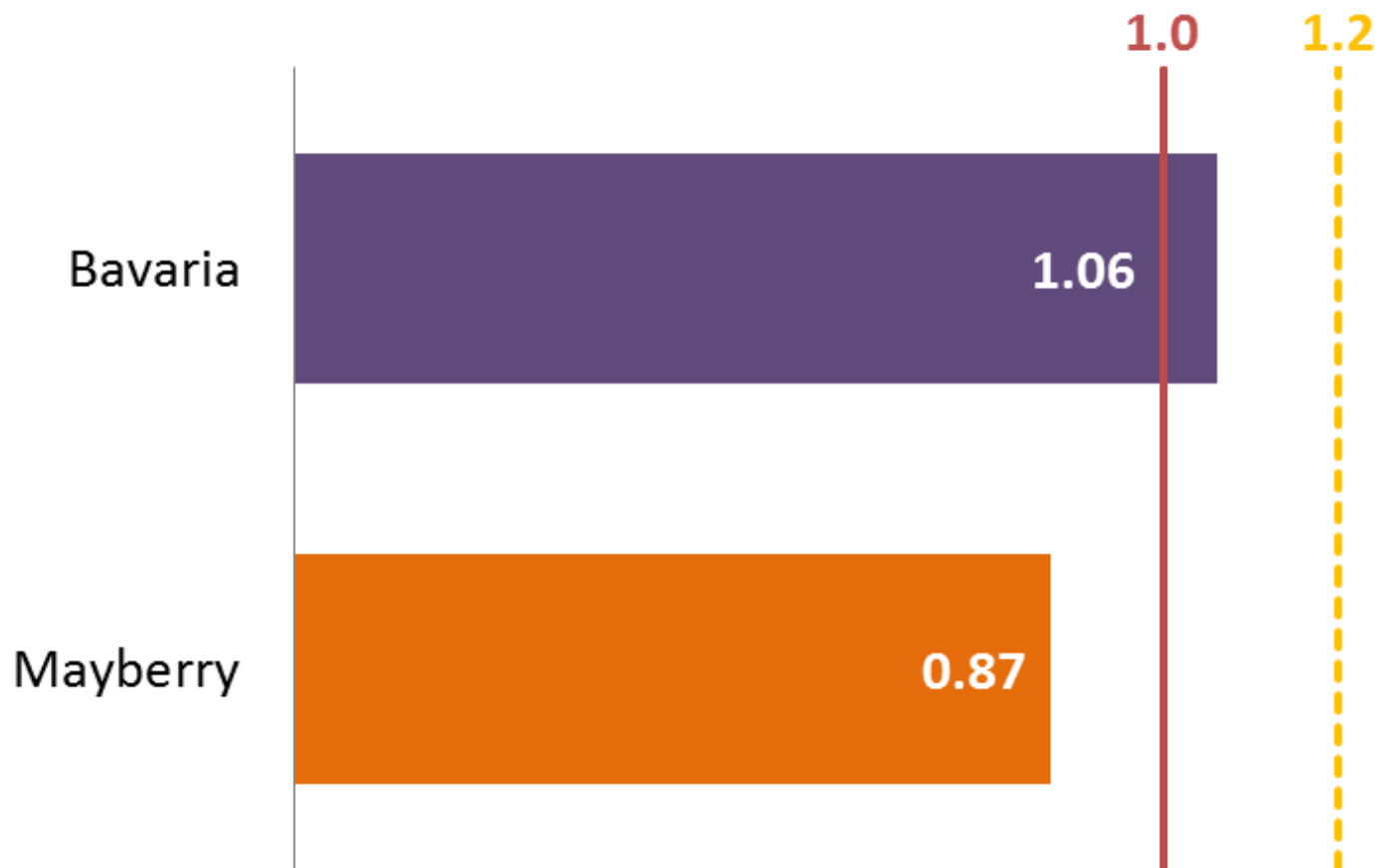
Operating Expenses (including depreciation) (2)

=

1.06

Operating Ratio

Including Depreciation



Operating Ratio – Bavaria

Excluding Depreciation

1b.

\$709,972

Operating Revenues (1)

=

1.55

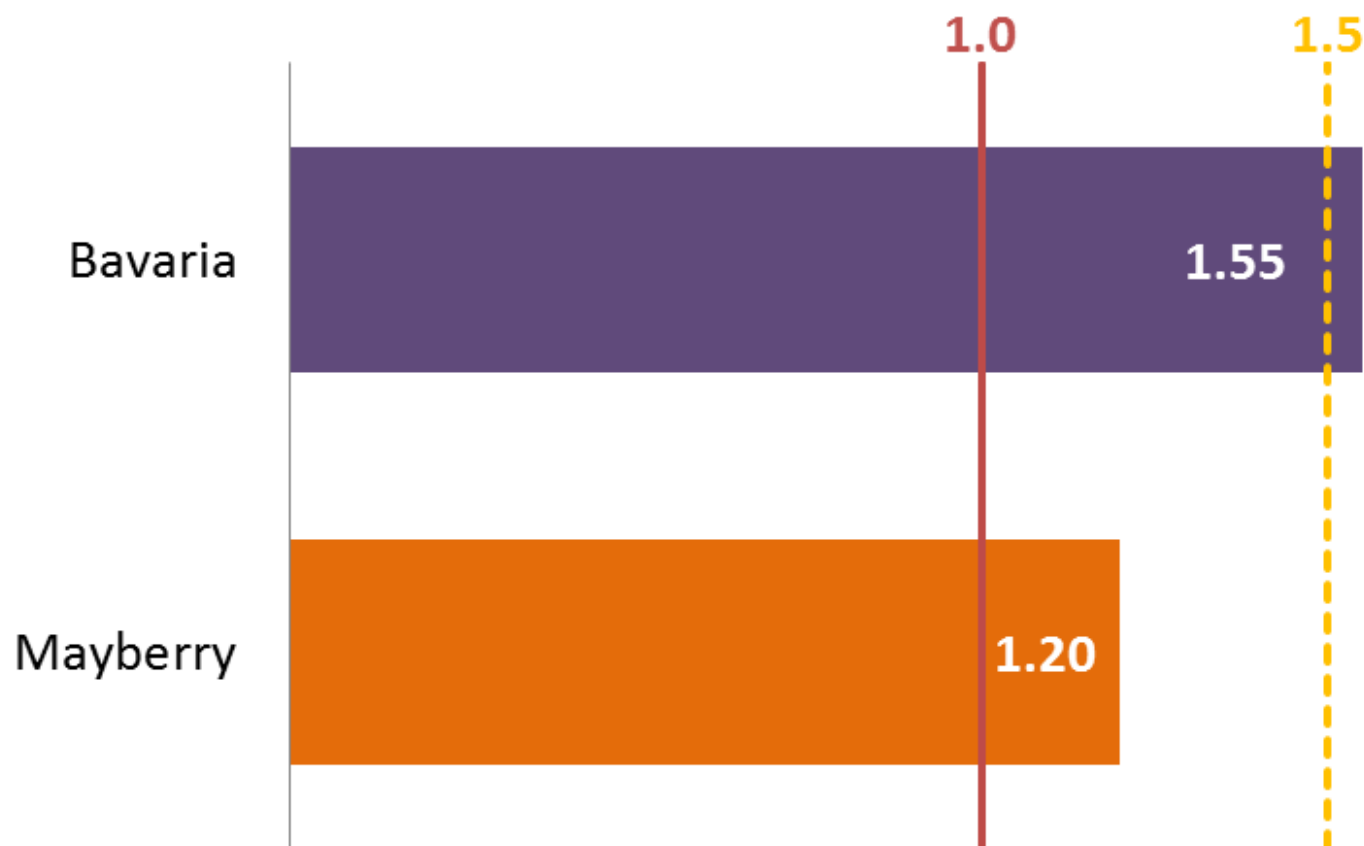
\$459,082

Operating Expenses (excluding depreciation) (2-3)

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

Operating Ratio

Excluding Depreciation



Debt Service Coverage Ratio

– Bavaria

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

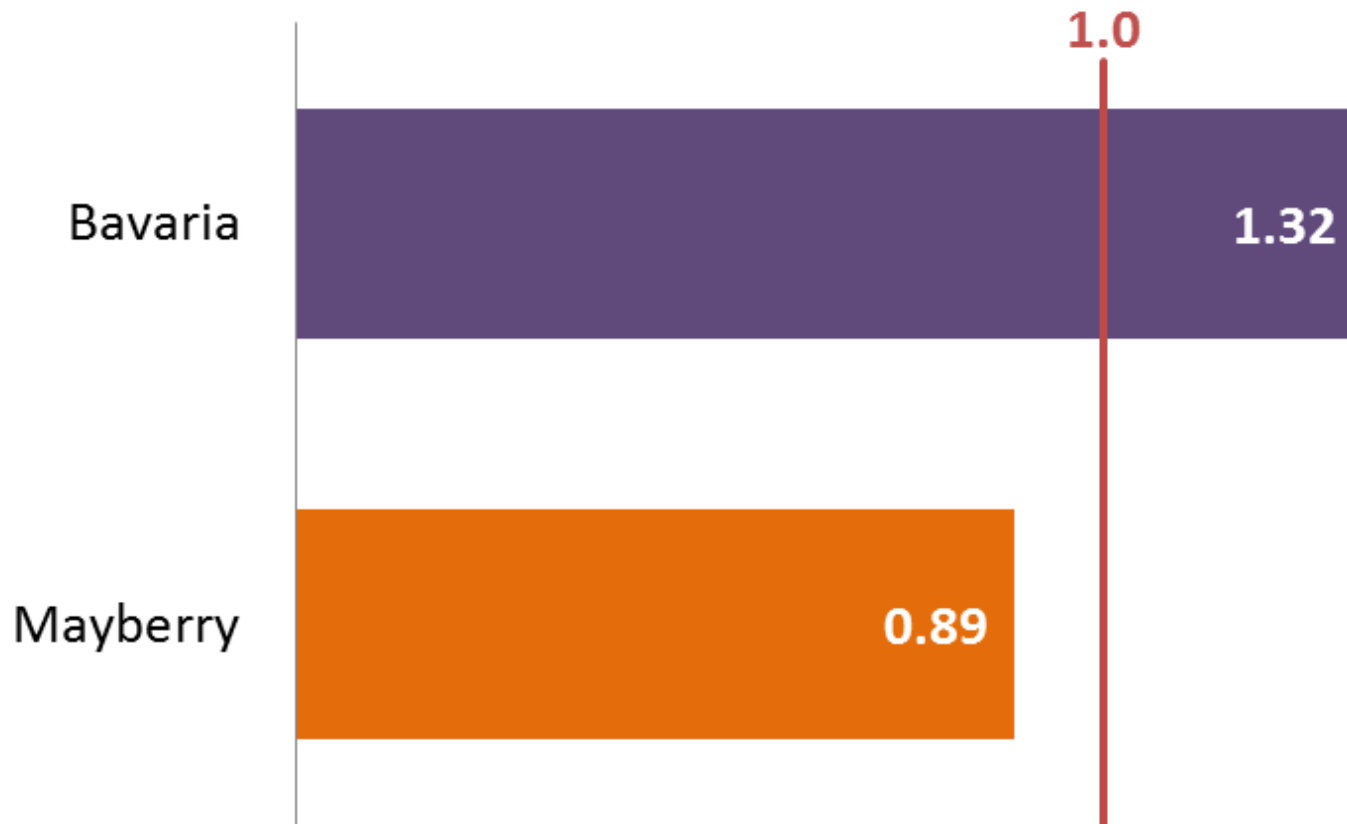
$$\frac{\boxed{\$709,972} - \boxed{\$459,082}}{\boxed{\$190,633}} = \boxed{1.32}$$

Operating Revenues (1) Operating Expenses (2-3)
(excluding depreciation)

Principal & Interest on Long-Term Debt (4)

2.

Debt Service Coverage Ratio

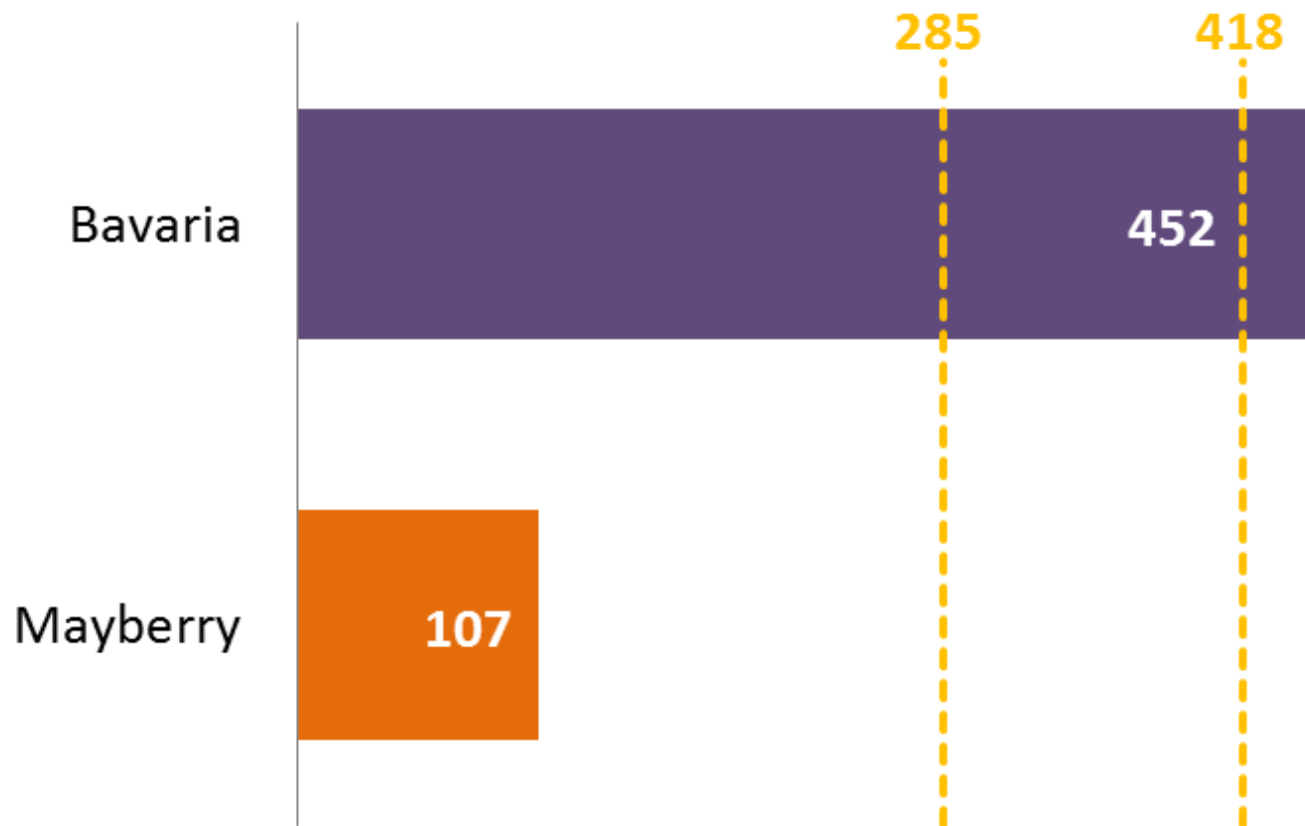


Days of Cash on Hand – Bavaria

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

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

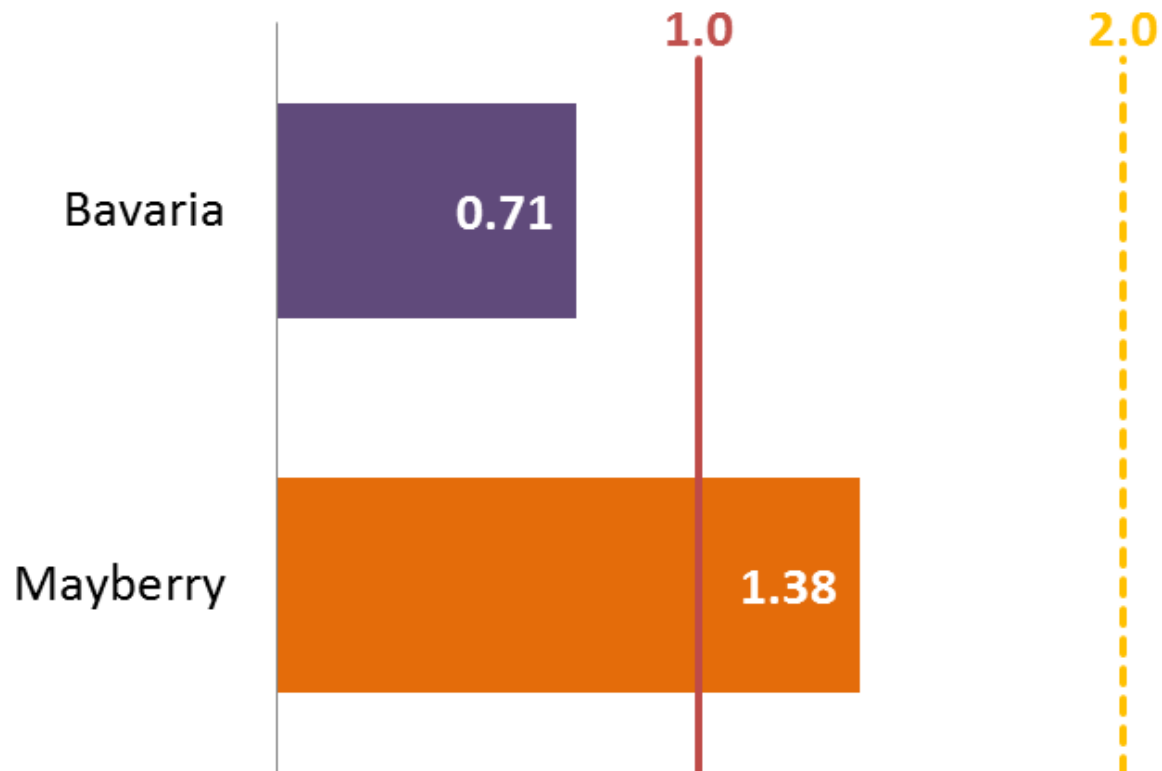
Days of Cash on Hand



Current Ratio – Bavaria

$$\begin{array}{rcl} \boxed{\$568,061} & + & \boxed{\$66,346} \\ \text{Unrestricted Cash \& } & & \text{Receivables, net (6)} \\ \text{Cash Equivalents (5)} & & \\ \hline \boxed{4.} & & \boxed{0.71} \\ \boxed{\$898,474} & & \\ \text{Current Liabilities (7)} & & \end{array}$$

Current Ratio





What Happened to **Bavaria**?

Or

Why the Notes to Financial Statements are Crucial

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

Bavaria corrected

C \$568,061
+ G \$460.005

\$1,028,066

Unrestricted Cash &
Cash Equivalents (5)

+

\$66,346

Receivables, net (6)

4.

=

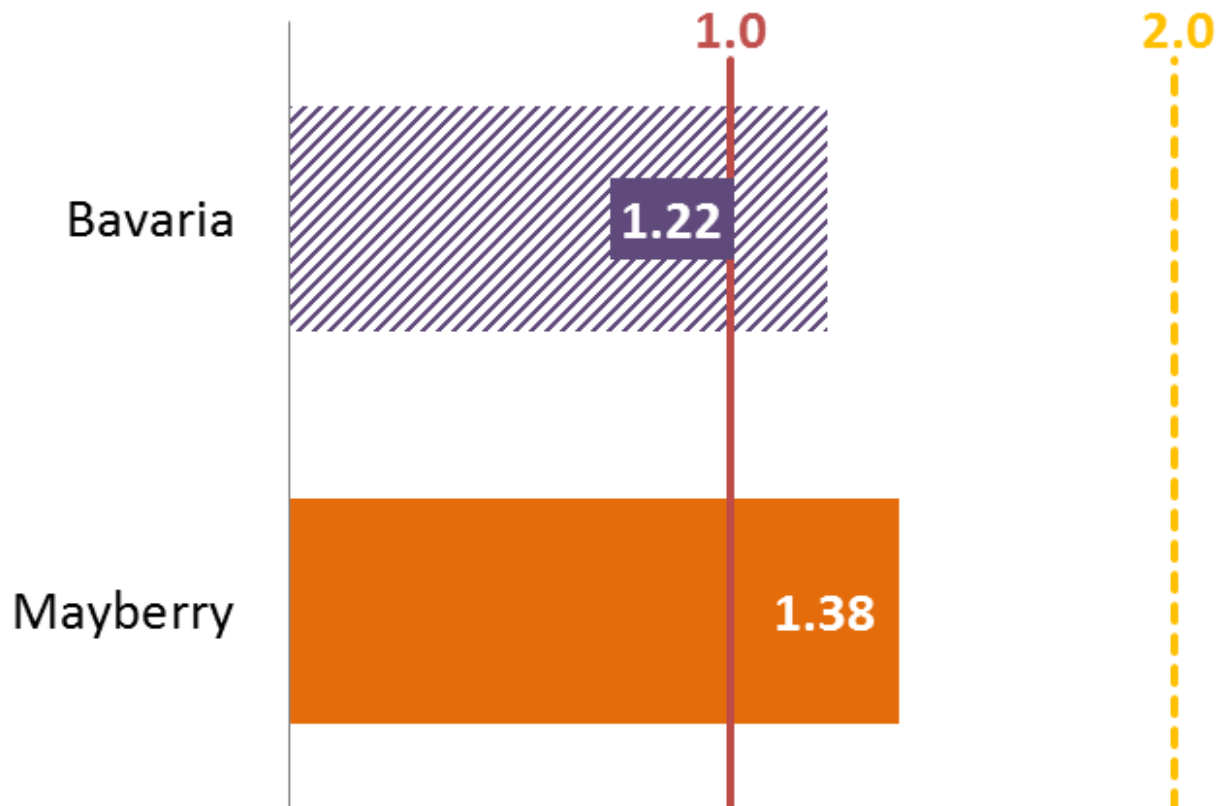
1.22

\$898,474

Current Liabilities (7)

Current Ratio

Bavaria Corrected for Missing Grant Funds





One More to Mention: Asset Depreciation*

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

Benchmark? Don't get close to 1.0

*Caveat – This indicator is only as good as your depreciation schedule and even then historic pricing is likely to distort the results.



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

<https://efc.sog.unc.edu/resource/financial-health-checkup-water-utilities>



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>

Begin

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

Instructions

Enter Financial Data

Key Financial Indicators

View Graphs

Example Statements

Blank worksheet




Set targets, enter five years of data, and see
your system's financial health trends over time

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



Key Financial Indicators for Water and Wastewater Systems: Operating Ratio

FEBRUARY 27, 2015 / GLENN BARNES / COMMENTS OFF ON KEY FINANCIAL INDICATORS FOR WATER AND WASTEWATER SYSTEMS: OPERATING RATIO

 Print  PDF

In previous posts, we have discussed where to find [data](#) to help water and wastewater systems make smart financial and managerial decisions. Another vital data source for any water and wastewater system is its own financial

SUBSCRIBE

[Sign Up](#)

TOPICS

[Drinking](#)

[Energy](#)

[Financial](#)

[General](#)

[Smart Meters](#)

[Wastewater](#)


[Waters](#)

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



Key Financial Indicators for Water and Wastewater Systems: Debt Service Coverage Ratio

APRIL 23, 2015 / GLENN BARNES / COMMENTS OFF ON KEY FINANCIAL INDICATORS FOR WATER AND WASTEWATER SYSTEMS: DEBT SERVICE COVERAGE RATIO

 Print  PDF

In a previous post, we outlined how to use the financial statements of a water or wastewater system to calculate the [key financial indicator](#) of [operating ratio](#), a measure of self-sufficiency. Another key financial indicator is debt service

SUBS

Sign U

TOPIC

[Drinki](#)

[Ener](#)

[Finan](#)

[Gener](#)

[Smart
System](#)

[Waste](#)



[Water](#)

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



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

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

 Print  PDF

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

SUBS

Sign L

TOPIC

[Drinki](#)

[Ener](#)

[Finan](#)

[Gener](#)

[Smart
System](#)

[Waste](#)

[Water](#)

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



Key Financial Indicators for Water and Wastewater Systems: Current Ratio

OCTOBER 1, 2015 / GLENN BARNES / 0 COMMENTS

 Print  PDF

In previous posts, we outlined how to use the financial statements of a water or wastewater system to calculate the [key financial indicators](#) of [operating ratio](#) (a measure of self-sufficiency), [debt service coverage ratio](#) (a measure of a system's ability to pay its long-term debts) and [days of cash on hand](#) (a measure of a

Search

SUBSCRIBE

Sign Up

TOPICS

[Drinking](#)

[Energy](#)

[Financial](#)

[General](#)

[Smart M
Systems](#)

[Waste M](#)

[Watersh](#)