Assessing Financial Condition

Shadi Eskaf
Environmental Finance Center
University of North Carolina at Chapel Hill
919-962-2785
eskaf@sog.unc.edu
Session Objectives

• Understanding where your water system is right now financially

• Learning some standard measures that funders (and the LGC) will be concerned with
Can You Sleep at Night?

• Is your system self sufficient?

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

• Can your system meet its short term obligations?

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

• How much of your utility’s expected life has already run out (and how much is left)?

<table>
<thead>
<tr>
<th>Operating Ratio</th>
<th>Days Cash on Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Ratio</td>
<td>Debt Service Coverage Ratio</td>
</tr>
<tr>
<td>Asset Depreciation</td>
<td></td>
</tr>
</tbody>
</table>
Key Financial Indicators!

- Operating Ratio
- Days of Cash on Hand
- Current Ratio
- Debt Service Coverage Ratio
Whiteboard Video: Financial Benchmarking

http://www.waterrf.org/Pages/Projects.aspx?PID=4366
Where Do We Get Started?

• Local governments: audited financial statements

• Non-governments: balance sheets, shareholder reports, annual reports, etc.
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

<table>
<thead>
<tr>
<th>Service Population</th>
<th>Bavaria</th>
<th>Mayberry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1313</td>
<td>1508</td>
</tr>
</tbody>
</table>

Service Connections

<table>
<thead>
<tr>
<th>Service Connections</th>
<th>Bavaria</th>
<th>Mayberry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>505</td>
<td>580</td>
</tr>
</tbody>
</table>
They Have Similar Demographics

<table>
<thead>
<tr>
<th></th>
<th>Bavaria</th>
<th>Mayberry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MHI</strong></td>
<td>$30,972</td>
<td>$29,891</td>
</tr>
<tr>
<td><strong>Percent Poverty</strong></td>
<td>23%</td>
<td>27%</td>
</tr>
</tbody>
</table>
...Though Vastly Different in Financial Indicators (and In Actual Appearance)

Mayberry

Bavaria
Quick Overview of Financial Statements
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
Operating Ratio

\[
\frac{\text{Operating Revenues}}{\text{Operating Expenses}}
\]

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**

<table>
<thead>
<tr>
<th>Enterprise Funds</th>
<th>Water and Sewer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Revenues</strong></td>
<td></td>
</tr>
<tr>
<td>Charges for services</td>
<td>$ 444,231</td>
</tr>
<tr>
<td>Grants</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total operating revenues</strong></td>
<td>444,231</td>
</tr>
<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Personnel services</td>
<td>178,885</td>
</tr>
<tr>
<td>Contractual services</td>
<td>63,898</td>
</tr>
<tr>
<td>Other supplies and expense</td>
<td>126,202</td>
</tr>
<tr>
<td>Depreciation</td>
<td>142,463</td>
</tr>
<tr>
<td><strong>Total operating expenses</strong></td>
<td>511,448</td>
</tr>
<tr>
<td>Operating income (loss)</td>
<td>(67,217)</td>
</tr>
</tbody>
</table>
Operating Ratio – Mayberry
Including Depreciation

\[
\frac{\text{Operating Revenues (1)}}{\text{Operating Expenses (including depreciation) (2)}} = 0.87
\]

\[
\frac{444,231}{511,448} = 0.87
\]
Now You Calculate For Bavaria

\[
\frac{\$709,972}{\$671,333} = 1.06
\]

1a.

Operating Revenues \((1)\)

Operating Expenses (including depreciation) \((2)\)
Operating Ratio
Including Depreciation

- Bavaria: 1.06
- Mayberry: 0.87
### Operating Ratio

Excluding Depreciation

#### MAYBERRY

**STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS**

**PROPRIETARY FUNDS**

**FOR THE YEAR ENDED DECEMBER 31, 2010**

<table>
<thead>
<tr>
<th>Enterprise Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water and Sewer</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPERATING REVENUES</th>
<th>Enterprise Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charges for services</td>
<td>$ 444,231</td>
</tr>
<tr>
<td>Grants</td>
<td>0</td>
</tr>
<tr>
<td>Total operating revenues</td>
<td>444,231</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPERATING EXPENSES</th>
<th>Enterprise Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel services</td>
<td>178,885</td>
</tr>
<tr>
<td>Contractual services</td>
<td>63,898</td>
</tr>
<tr>
<td>Other supplies and expense</td>
<td>126,202</td>
</tr>
<tr>
<td>Depreciation</td>
<td>142,463</td>
</tr>
<tr>
<td>Total operating expenses</td>
<td>511,448</td>
</tr>
<tr>
<td>Operating income (loss)</td>
<td>(67,217)</td>
</tr>
</tbody>
</table>
Operating Ratio – Mayberry
Excluding Depreciation

1b. Operating Revenues (1) = $444,231

Operating Expenses (excluding depreciation) (2-3) = $368,985

OE $511,448
- Dep $142,463

= 1.20
Now You Calculate For Bavaria

1b.

\[
\frac{\text{Operating Revenues (1)}}{\text{Operating Expenses (excluding depreciation) (2-3)}} = 1.55
\]

- OE $709,972
- Dep $212,251
- OE $671,333
Operating Ratio
Excluding Depreciation

- Bavaria: 1.55
- Mayberry: 1.20
Debt Service Coverage Ratio

\[
\text{Operating Revenues} - \frac{\text{Operating Expenditures (excludes depreciation)}}{\text{Principal + Interest Payments on Long Term Debt}}
\]
# Debt Service Coverage Ratio

## MAYBERRY

**STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS PROPRIETARY FOR THE YEAR EN**

### 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)

## MAYBERRY

**STATEMENT OF CASH FLOWS PROPRIETARY FUNDS FOR THE YEAR ENDED DECEMBER 31, 2010**

<table>
<thead>
<tr>
<th>Enterprise Funds</th>
<th>Water and Sewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Flows from Operating Activities</td>
<td></td>
</tr>
<tr>
<td>Receipts from customers</td>
<td>$437,947</td>
</tr>
<tr>
<td>Payments to suppliers</td>
<td>(187,296)</td>
</tr>
<tr>
<td>Payments to employees</td>
<td>(178,085)</td>
</tr>
<tr>
<td>Net cash provided by operating activities</td>
<td>71,766</td>
</tr>
<tr>
<td>Cash Flows from Noncapital Financing Activities</td>
<td></td>
</tr>
<tr>
<td>Transfers in (out)</td>
<td>(60,000)</td>
</tr>
<tr>
<td>Net cash (used) by noncapital financing activities</td>
<td>(60,000)</td>
</tr>
<tr>
<td>Cash Flows from Capital and Related Financing Activities</td>
<td></td>
</tr>
<tr>
<td>Loan proceeds</td>
<td>0</td>
</tr>
<tr>
<td>Purchases of capital assets</td>
<td>(39,841)</td>
</tr>
<tr>
<td>Principal paid on capital debt</td>
<td>(49,651)</td>
</tr>
<tr>
<td>Interest paid on capital debt</td>
<td>(35,128)</td>
</tr>
<tr>
<td>Net cash (used) by capital and related financing activities</td>
<td>(124,624)</td>
</tr>
</tbody>
</table>
Debt Service Coverage Ratio – Mayberry

\[
\frac{\text{Operating Revenues (1)} \ - \ \text{Operating Expenses (2-3)}}{\text{Principal & Interest on Long-Term Debt (4)}} = 0.89
\]

\[
\begin{align*}
\text{Operating Revenues (1)} & : $444,231 \\
\text{Operating Expenses (2-3) (excluding depreciation)} & : $368,985 \\
\text{Principal & Interest on Long-Term Debt (4)} & : $84,783
\end{align*}
\]

\[
\text{Dep $142,463} - \text{OE $511,448} = P \text{ $49,655} + $35,128
\]
Now You Calculate For Bavaria

\[
\begin{align*}
\text{Operating Revenues} \ (1) &\quad - \quad \text{Operating Expenses} \ (2-3) \\
\$709,972 &\quad - \quad \$459,082 \\
\text{(excluding depreciation)} \\
\hline
\text{Principal & Interest on Long-Term Debt} \ (4) &\quad = \\
\$190,633 &\quad \text{OE} \quad \$671,333 \\
\text{- Dep} \quad \$212,251 &\quad = \quad 1.32
\end{align*}
\]
Debt Service Coverage Ratio

- Bavaria: 1.32
- Mayberry: 0.89
Days of Cash on Hand

\[
\text{Unrestricted cash and cash equivalents} \div \frac{(\text{Operating Expenses} - \text{Depreciation})}{365}
\]
Days of Cash on Hand

MAYBERRY
STATEMENT OF NET ASSETS
PROPRIETARY FUND
DECEMBER 31, 2010

<table>
<thead>
<tr>
<th>Enterprise Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and Sewer</td>
</tr>
</tbody>
</table>

### ASSETS

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>107,706</td>
</tr>
<tr>
<td>Restricted cash</td>
<td>176,424</td>
</tr>
<tr>
<td>Receivables, net</td>
<td>41,870</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td><strong>326,000</strong></td>
</tr>
<tr>
<td>Capital assets</td>
<td></td>
</tr>
<tr>
<td>Land and improvements</td>
<td>10,229</td>
</tr>
<tr>
<td>Distribution and collection systems</td>
<td>5,732,845</td>
</tr>
<tr>
<td>Buildings</td>
<td>503,398</td>
</tr>
<tr>
<td>Less accumulated depreciation</td>
<td>(2,514,933)</td>
</tr>
<tr>
<td><strong>Total capital assets</strong></td>
<td><strong>3,731,539</strong></td>
</tr>
</tbody>
</table>

**Total Assets**

$ 4,057,539
Days of Cash on Hand – Mayberry

3. $107,706
   Unrestricted Cash & Cash Equivalents (5)

   $368,985 / 365
   Operating Expenses (excluding depreciation) (2-3)

   107

OE $511,448
- Dep $142,463
Now You Calculate For Bavaria

\[ \frac{\text{Unrestricted Cash & Cash Equivalents (5)}}{\text{Operating Expenses (excluding depreciation) (2-3)}} = 452 \]

\[ \frac{568,061}{459,082 / 365} = 452 \]

OE $671,333

- Dep $212,251
Days of Cash on Hand

- **Bavaria**: 285
- **Mayberry**: 107
- **Total**: 452
Current Ratio

\[
\text{Current Ratio} = \frac{\text{Unrestricted cash and cash equivalents} + \text{Receivables, net}}{\text{Current Liabilities}}
\]
Current Ratio – Mayberry

\[
\frac{\$107,706 + \$41,870}{\$108,390} = 1.38
\]

1. Unrestricted Cash & Cash Equivalents (5)
2. Receivables, net (6)
3. Current Liabilities (7)
Now You Calculate For Bavaria

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

- $568,061: Unrestricted Cash & Cash Equivalents (5)
- $66,346: Receivables, net (6)
- $898,474: Current Liabilities (7)
Current Ratio

- Bavaria: 0.71
- Mayberry: 1.38
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

\[ C \times 568,061 + 4 \times 460,005 \]

\[ \frac{\$1,028,066 + \$66,346}{\$898,474} = 1.22 \]

Unrestricted Cash & Cash Equivalents (5)

Receivables, net (6)

Current Liabilities (7)
Current Ratio
Bavaria Corrected for Missing Grant Funds

- Bavaria: 1.22
- Mayberry: 1.38
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
One More to Mention: Asset Depreciation*

\[
\frac{\text{Accumulated Depreciation}}{\text{Gross Plant and Equipment}} = \text{Benchmark? Don’t get close to 1.0}
\]

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

- Once we figure out where we are, how do we know where we are going?

- How do we estimate the future costs and revenues?