

Self-Assessing Financial Performance

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Water and Wastewater Finance Strategies Workshop
Environmental Finance Center, UNC School of Government
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SCHOOL OF GOVERNMENT
Environmental Finance Center

www.efc.sog.unc.edu

Guiding Principle for Enterprise Funds

Self-sufficiency

Revenues collected = Costs expended
Avoid or minimize transfers

Tools you can use

- Monitor finances against the budget
- Monitor collections
- Track financial performance indicators



Examples of what you can assess with financial performance indicators

Is your utility self-sufficient?	Operating Ratio
Are you able to cover your debt service after paying for your day-to-day operations?	Debt Service Coverage Ratio
If your customers stop paying their bills, how long can you maintain operations?	Days Cash on Hand
Can your system meet its short-term obligations?	Quick / Current Ratio
How much of your utility's expected life has already run out (and how much is left)?	Percent Depreciated

These indicators (and more) focus mostly on current revenues and expenses.
Need to consider future costs as well.

Whiteboard video: financial benchmarking

https://www.youtube.com/watch?v=pfs0brT_jkU

Part of a series of whiteboard videos [at this link](#)



Where to Find Data

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	
	Water and Sewer Enterprise Fund
Assets	
Current Assets:	
Cash - operating	\$ 368,061
Accounts Receivable (Net)	66,346
Prepaid Insurance	5,856
Total Current Assets	640,263
Noncurrent Assets:	
Restricted cash	177,208
Capital assets:	
Land	209,556
Buildings	22,982
Improvements other than buildings	5,873,769
Machinery and equipment	896,073
Construction in progress	1,454,079
Less: Accumulated depreciation	(2,887,225)
Deferred Charge	39,833
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	460,005
Current Portion of Long-Term Debt	343,811
Total Current Liabilities	898,474
Noncurrent Liabilities:	
Compensated Absences	15,605
Revenue Bonds (Net of current portion)	233,357
Notes Payable (Net of current portion)	646,873
Total Noncurrent Liabilities	895,835
Total Liabilities	1,794,309
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	167,362
Total fund net assets	\$ 4,637,078

What are Audited Financial Statements (“Audits”)?

G.S. 159-34 requires all local governments to prepare an *annual independent* audit of its finances.

Auditors prepare and submit reports.

The auditors do *not* opine on the financial condition of the local government. However, you can use the information in the audits to make an assessment.



Audited Financial Statements (“Audits”)

You will need all of the following:

- Statement of Net Position
- Statement of Revenues, Expenses & Changes in Net Position
- Statement of Cash Flows

Explanations in the Notes could be helpful.

(Note: all are in accrual basis of reporting)



Operating Ratio

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

Calculate two numbers:

one *including* depreciation in total operating expenses,
and one *excluding* depreciation.

Aim to exceed well over 1.0

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

Operating Ratio

Including Depreciation

Statement of Revenues, Expenses and Changes in Fund Net Position

	<u>Enterprise Funds</u> <u>Water and Sewer</u>	
OPERATING REVENUES		
Charges for services	\$ 444,231	
Grants	<u>0</u>	
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>	

$$\begin{array}{r}
 \boxed{1a.} \quad \frac{\boxed{\$444,231}}{\boxed{\$511,448}} = \boxed{0.87} \\
 \text{Operating Revenues (1)} \\
 \text{Operating Expenses (including depreciation) (2)}
 \end{array}$$

Operating Ratio

Excluding Depreciation

Statement of Revenues, Expenses and Changes in Fund Net Position

	<u>Enterprise Funds</u> <u>Water and Sewer</u>	
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Operating income (loss)	<u>(67,217)</u>	- Dep \$142,463

1b.
$$\frac{\$444,231}{\$368,985} = 1.20$$

Operating Revenues (1)

Operating Expenses (excluding depreciation) (2-3)

Cashflow from Operating Activities

$$\begin{aligned} &= \text{Operating Revenues} \\ &\quad - (\text{Operating Expenses Excluding Depreciation}) \\ &\quad - \text{Changes in receivables, prepaid assets, inventory} \\ &\quad \quad \text{and payable balances that affect cash balances} \end{aligned}$$

Aim for well over >\$0

Should aim for > debt service + whatever you need to build in reserves that year

Cashflow from Operating Activities

Statement of Cash Flows

	<u>Enterprise Funds</u> <u>Water and Sewer</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Receipts from customers	\$ 437,947
Payments to suppliers	(187,296)
Payments to employees	(178,885)
Net cash provided by operating activities	<u>71,766</u>
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers in (out)	<u>(60,000)</u>
Net cash (used) by noncapital financing activities	<u>(60,000)</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Loan proceeds	0
Purchases of capital assets	(39,841)
Principal paid on capital debt	(49,655)
Interest paid on capital debt	<u>(35,128)</u>
Net cash (used) by capital and related financing activities	<u>(124,624)</u>

④

Debt Service Coverage Ratio

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

Bond covenants may specify a minimum target (usually 1.1 or 1.2 or higher)

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

Debt Service Coverage Ratio

Statement of Cash Flows

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CASH FLOWS FROM OPERATING ACTIVITIES	
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Net cash (used) by capital and related financing activities	<u>(124,624)</u>

\$49,655
\$35,128

$$\begin{array}{r}
 \boxed{2.} \quad \boxed{\$444,231} - \boxed{\$368,985} \\
 \text{Operating Revenues (1)} \quad \text{Operating Expenses (2-3)} \\
 \text{(excluding depreciation)} \\
 \hline
 \boxed{\$84,783} \\
 \text{Principal \& Interest on Long-Term Debt (4)}
 \end{array}
 =
 \boxed{0.89}$$

Surplus/Deficit with Debt

$$\begin{aligned} &= \text{Operating Revenues} \\ &- (\text{Operating Expenses Excluding Depreciation}) \\ &- \text{Debt service payment} \end{aligned}$$

Aim for >\$0

Should aim for > whatever you need to build in reserves that year

Days of Cash on Hand

$$= \frac{\textit{Unrestricted cash and cash equivalents}}{\textit{(Operating Expenses excluding depreciation) / 365}}$$

Aim for > what you need to hold in reserve for emergencies, cashflow fluctuations, unexpected revenue losses, ability to cover ? days or months of costs without rev.

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

Days of Cash on Hand

Statement of Net Position

	<u>Enterprise Funds</u> <u>Water and Sewer</u>
ASSETS	
Current assets	
Cash	107,706 (5)
Restricted cash	176,424
Receivables, net	41,870 (6)
Total current assets	<u>326,000</u>
Capital assets	
Land and improvements	10,229
Distribution and collection systems	5,732,845
Buildings	503,398
Less accumulated depreciation	<u>(2,514,933)</u>
Total capital assets	<u>3,731,539</u>
Total Assets	\$ 4,057,539 <u>=====</u>

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

Current Ratio

$$\frac{\text{Unrestricted cash and cash equivalents} + \text{Receivables, net} + \text{inventory/assets to be liquidated soon}}{\text{Current Liabilities}}$$

Quick Ratio

$$\frac{\text{Unrestricted cash and cash equivalents} + \text{Receivables, net}}{\text{Current Liabilities (that will be paid with current assets)}^*}$$

*Revenue anticipation notes for USDA debt excluded from current liabilities

Aim to exceed well over 1.0

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

Quick Ratio

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

Statement of Net Position

Enterprise Funds Water and Sewer

ASSETS

Current assets

Cash	107,706	(5)
Restricted cash	176,424	
Receivables, net	41,870	(6)
Total current assets	<u>326,000</u>	

Capital assets

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Distribution and collection systems	5,732,845	
Buildings	503,398	
Less accumulated depreciation	(2,514,933)	
Total capital assets	<u>3,731,539</u>	

Total Assets

\$ 4,057,539

LIABILITIES

Current liabilities

Accounts payable	\$ 9,311	
Customer deposits	44,229	
Bonds payable current	54,850	
Total current liabilities	<u>108,390</u>	(7)

Days Sales in Receivables

$$= \frac{\text{Net Customer Accounts Receivable}}{\text{Charges for services} / 365}$$

Then compare to # of days in billing period



Days Sales in Receivables

$$= \frac{\text{Net Customer Accounts Receivable } \$41,870}{\text{Charges for services} / 365 \quad \$444,231 / 365} = 34.4 \text{ days}$$

Statement of Net Position

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ASSETS	
Current assets	
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Percent Depreciated

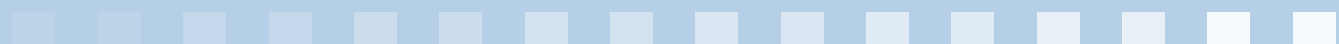
$$= \frac{\textit{Accumulated Infrastructure Depreciation Expense}}{\textit{Total Gross Value of Depreciable Assets}}$$

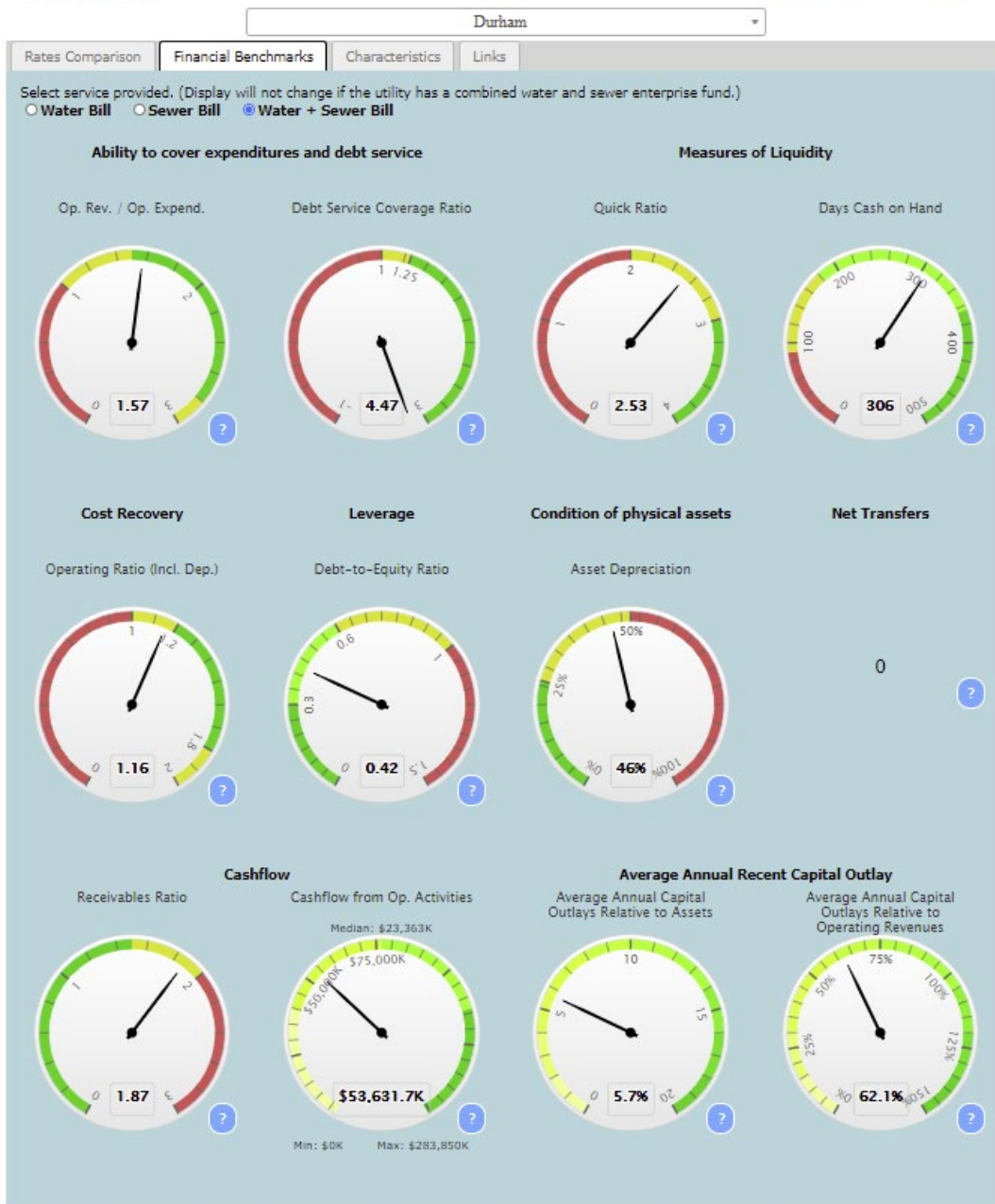
*Caveat – This indicator is only as good as your depreciation schedule, and even then historic pricing is likely to distort the results.

Example

Indicator	Value	Target (greater than...)
✘ Operating ratio (incl. depreciation)	0.87	>1.0 (not enough) or >1.1 or higher
✔ Operating ratio (excl. depreciation)	1.20	>1.0 (not enough) or >1.1 or higher
✔ Cashflow from operating activities	+ \$71,766	>\$0
✘ Debt service coverage ratio	0.86	See bond covenant (>1.1? >1.2?)
✘ Surplus/deficit with debt	- \$9,537	>\$0
✔ Days cash on hand	107	? (up to you – aim for well over >90)
✔ Quick ratio	1.38	>1.0 (not enough) or >1.1 or higher
✔ Days sales in receivables	34.4	Not much higher than number of days between meter reading and cut-off date
Percent depreciated	X	? (try to be <50% at least)

Is it too much?





Find your utility's latest FY metrics on the NC Water and Wastewater Rates Dashboard

<https://efc.sog.unc.edu/resource/north-carolina-water-and-wastewater-rates-dashboard>

Caution: Don't Just Look at Last Year

New Example:

Last fiscal year's ratios show

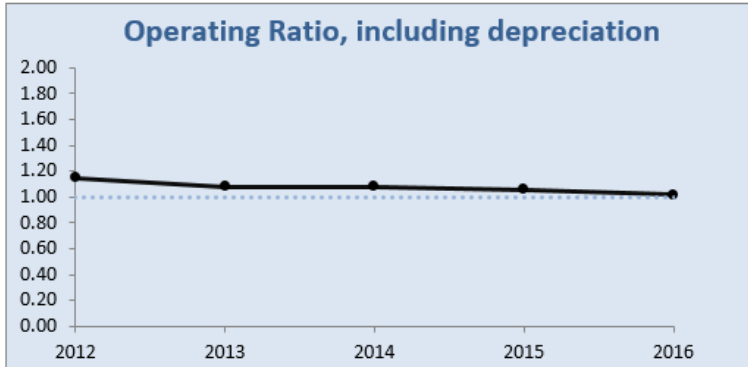
- Operating ratio = 1.02 ✓
- Debt service coverage ratio = 1.15 ?
- Days cash on hand = 145 ✓
- Current ratio = 1.20 ✓

Potential conclusion: "we're doing well"

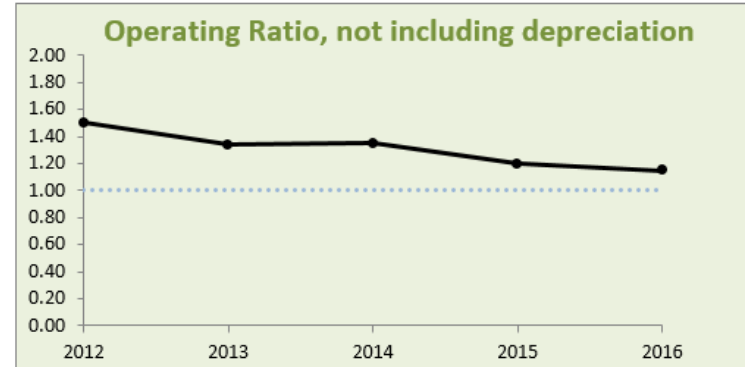
Consider Trends in the Last 5 Years

Assessment for Example utility

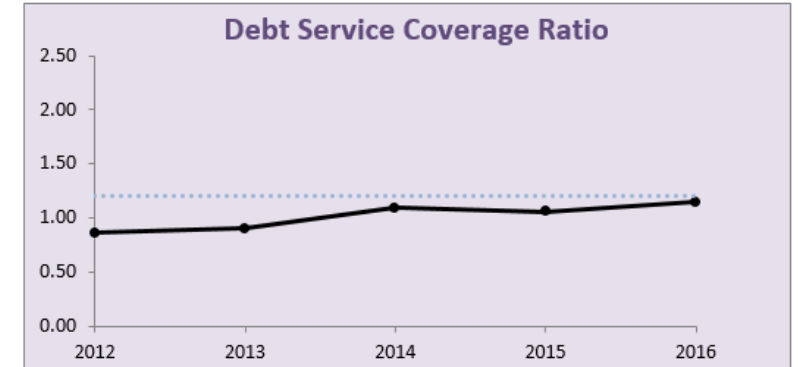
Did you generate the revenues needed to pay for O&M and a little for capital?



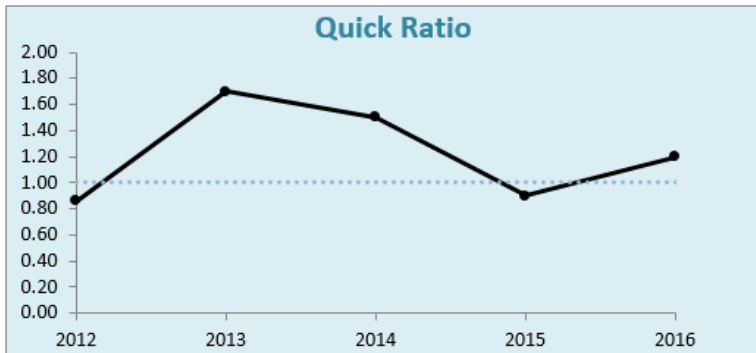
Did you generate the revenues needed to pay for O&M by itself?



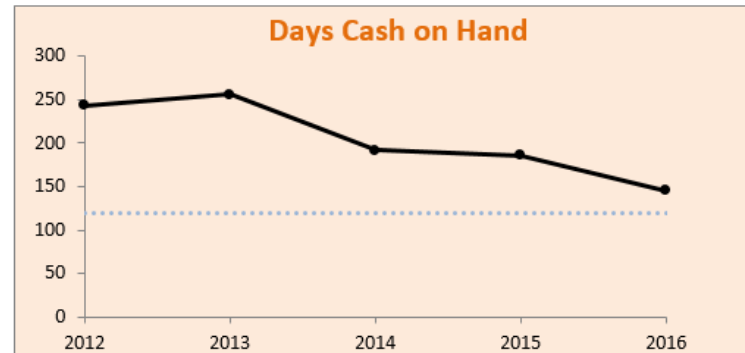
Did you generate the revenues needed to pay for O&M and existing debt service?



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?



North Carolina Financial Condition Analysis

Key: Bryson City

Benchmark

Benchmark peers selected:

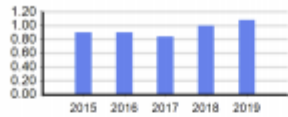
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Water and Sewer Fund

Resource Flow

Interperiod Equity

Total margin ratio



Bryson City = 1.08, Benchmark = 0.00

Interperiod equity measures whether or not a local government lived within its financial means. The total margin ratio - total financial resources divided by total financial obligations - is used to analyze this dimension of resource flow.

Financial Performance

Percent change in net position

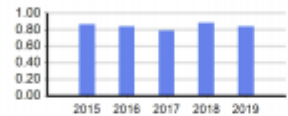


Bryson City = 5.79 %, Benchmark = 0.00 %

Financial performance shows how much a government's financial position improved or deteriorated as a result of resource flow. The percent change in net position is calculated as the change in net position divided by net position, beginning.

Self-Sufficiency

Charge-to-expense ratio



Bryson City = 0.84, Benchmark = 0.00

Self-sufficiency addresses the extent to which charges for services covered total expenses. The charge-to-expense ratio is calculated as charges for services divided by total expenses.

Financing Obligation

Debt service ratio



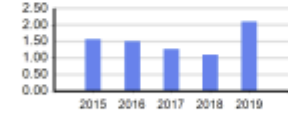
Bryson City = 0.13, Benchmark = 0.00

Financing obligation looks at service flexibility by determining the amount of total expenses committed to annual debt service. The debt service ratio is calculated as annual debt service divided by total expenses.

Resource Stock

Liquidity

Quick ratio



Bryson City = 2.16, Benchmark = 0.00

Liquidity measures a government's ability to meet its short-term obligations. The quick ratio—cash & investments divided by current liabilities—is used to analyze this dimension of resource stock.

Solvency

Net position ratio

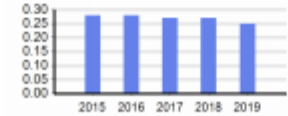


Bryson City = 0.34, Benchmark = 0.00

Solvency measures a government's ability to meet long-term obligations. The net position ratio is calculated as unrestricted net position divided by total liabilities.

Leverage

Debt-to-assets ratio



Bryson City = 0.25, Benchmark = 0.00

Leverage measures the extent to which total assets are financed with long-term debt. The debt-to-assets ratio is calculated as long-term debt divided by total assets.

Capital

Capital-assets-condition ratio



Bryson City = 0.53, Benchmark = 0.00

Capital is the condition of capital assets as defined by their remaining useful life. The capital assets condition ratio is calculated as accumulated depreciation divided by capital assets being depreciated. This result is then subtracted from one.

Benchmark your Enterprise Fund over 5 years on the Local Government Commission's Financial Reports and Analysis Tools

<https://logos.nctreasurer.com/Reporting/Report/External?applicationCode=BMT>

Financial Health Checkup for Water Utilities

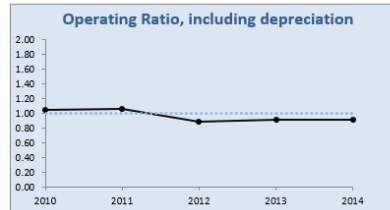
<http://efc.sog.unc.edu> or <http://efcnetwork.org>

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

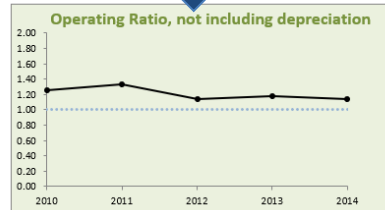
Free, simplified Excel tool allowing you to track and benchmark financial performance metrics for your water/sewer fund in the past 5 years

Key	Field in the financial statement/CAFR	Fiscal Year End					Instructions
		2010	2011	2012	2013	2014	
[1]	Total Operating Revenues	\$ 2,341,857	\$ 2,556,399	\$ 2,271,777	\$ 2,334,236	\$ 2,501,286	Enter as shown in the Total Operating
[2]	Total Operating Expenses	\$ 2,229,208	\$ 2,403,938	\$ 2,565,282	\$ 2,555,504	\$ 2,740,266	Enter as shown in the Total Operating
[3]	Depreciation & Amortization Expenses	\$ 362,047	\$ 490,007	\$ 569,998	\$ 568,179	\$ 534,000	Depreciation and amortization are listed
[4]	Debt Principal Payments	\$ 185,000	\$ 279,242	\$ 333,558	\$ 132,742	\$ 436,459	Enter \$0 if there were no debt service payments
[4b]	Debt Interest Payments	\$ 84,859	\$ 81,330	\$ 72,808	\$ 71,620	\$ 55,535	Enter \$0 if there were no debt service payments
[5]	Current Assets, excluding inventories, restricted cash, prepaids	\$ 2,986,691	\$ 3,565,601	\$ 3,266,234	\$ 3,050,573	\$ 2,941,629	Total Current Assets minus all inventory
[6]	Current Liabilities, excluding deposits & bond anticipation notes	\$ 757,776	\$ 776,266	\$ 495,555	\$ 656,257	\$ 547,019	Total Current Liabilities minus all refund
[7]	Unrestricted Cash & Investments	\$ 1,961,851	\$ 2,883,569	\$ 2,411,154	\$ 2,273,697	\$ 2,415,013	Unrestricted Cash & Investments (and
[8]	Total Accumulated Depreciation	\$ 5,125,329	\$ 5,520,510	\$ 7,661,024	\$ 8,229,207	\$ 8,763,207	Total accumulated depreciation on capital
[9]	Total Depreciable Capital Assets	\$ 17,221,067	\$ 17,144,542	\$ 18,697,849	\$ 18,744,028	\$ 18,854,157	Enter the total value of capital assets listed

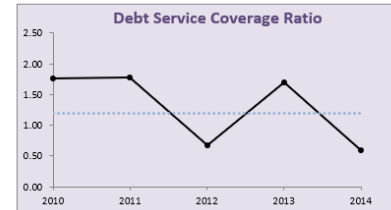
Did you generate the revenues needed to pay for O&M and a little for capital?



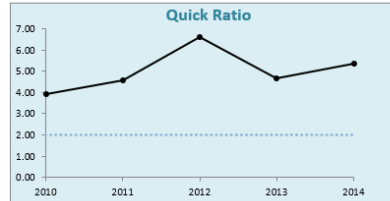
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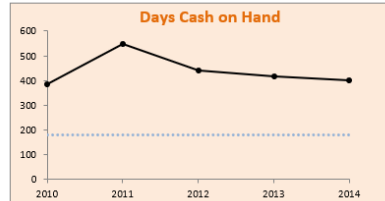
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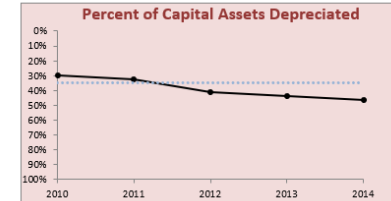
Did you have enough liquidity to pay your current liabilities at the end of the year?



How many days could you continue to operate the utility with the cash levels at the end of the year?



How much have your utility's assets depreciated (nearing the end of their lives)?



Excel®-based

Free to download

Free to use

Forward-Looking Assessment

- Project revenues and expenses for the next *few* years and calculate the metrics
 - Use a multi-year budget if it exists
 - Include capital costs from C.I.P. or asset management plan. If neither, include more than depreciation, or 5% of gross value of assets (whichever is higher)
 - Project trend in O&M expenses from last few years; use worse case scenario
 - Calculate revenues from projected rate increases and reduced average water use

What other metrics does your utility use to assess financial performance?



Key Financial Metrics During COVID-19

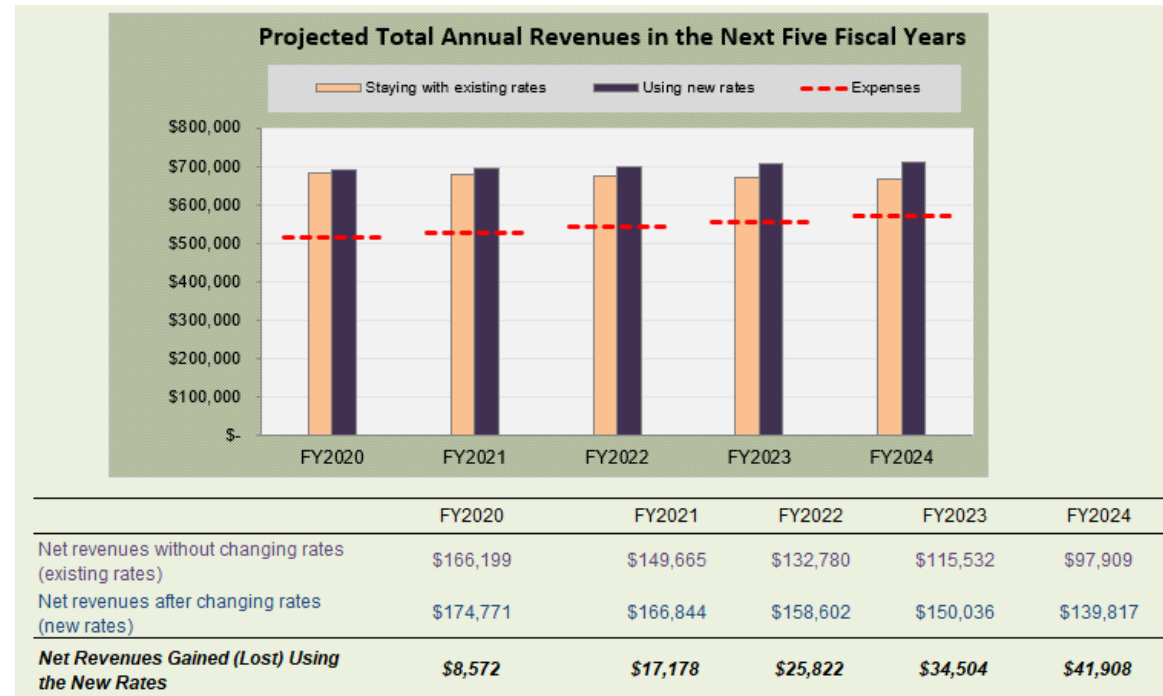
- Change in billed charges from same month last year
- Collections rate (or % of bills past due)
- Average past due amount
- Number of customers disconnected for non-payment (for longer than 7 days)
- Percent of customers with past due bills on payment plans
- Average balance on payment plans
- Percent of customers on auto-pay

Water & Wastewater Rates Analysis Model

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

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

Cash-flow model to compare different rates on your projected fund balance to determine sufficiency of covering costs.



Excel®-based

Free to download

Free to use

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