

Financial Management and Benchmarking for WW Systems

Small Systems Training

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SCHOOL OF GOVERNMENT

Environmental Finance Center

www.efc.sog.unc.edu

About Us

The Environmental Finance Center Network (EFCN) is a university-based organization promoting innovative and sustainable environmental solutions while bolstering efforts to manage costs.



**Building TMF Capacity
for Small Systems**

Our Building Technical, Managerial, and Financial Capacity Programs for Small Water and Wastewater Systems provide free training and technical assistance across every state, territory, and tribal nations. Technical assistance is available on a first-come, first-served basis.

The Small Systems Water and Wastewater Teams

- Southwest Environmental Finance Center at the University of New Mexico
- Syracuse University Environmental Finance Center
- Environmental Finance Center at The University of North Carolina at Chapel Hill
- Environmental Finance Center at Wichita State University
- Environmental Finance Center at Sacramento State
- New England Environmental Finance Center at the University of Southern Maine
- Environmental Finance Center at the University of Maryland
- Government Finance Officers Association (GFOA)
- National Association of Development Organizations (NADO)
- Mississippi State University Extension
- Environmental Finance Center West
- Great Lakes Environmental Infrastructure Center at MTU



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NADO
NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS
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EFCWest
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MISSISSIPPI STATE UNIVERSITY
EXTENSION



UNIVERSITY OF
MARYLAND
ENVIRONMENTAL
FINANCE CENTER



Great Lakes
Environmental
Infrastructure Center
Environmental Finance Center for Region 5



Michigan
Technological
University

Enterprise Funds



A Guiding Principle for Enterprise Funds

Self-sufficiency

Revenues collected = Costs expended
Avoid or minimize transfers

Characteristics of Public Enterprises

- Service industries; users
- Production industries
- Diverse user charges, fees and pricing strategies
- Self-regulated monopolies
- Often impact public health and environmental protection; have regulated requirements
- Can be capital intensive

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Two Types of Revenues

- **System Income**—Money from rates, tap fees, system development charges, grants, penalties, other sources
 - Note: To be a pure enterprise fund, not taxes (unless explicitly permitted in some States).
- **Debt**—Money from bonds and loans

Three Types of Costs

- **Operating Costs**—what you need to run the system day in and day out
- **Capital Costs**—rehabilitation and replacement of existing infrastructure and new infrastructure
- **Debt Service**—what you owe on loans and bonds



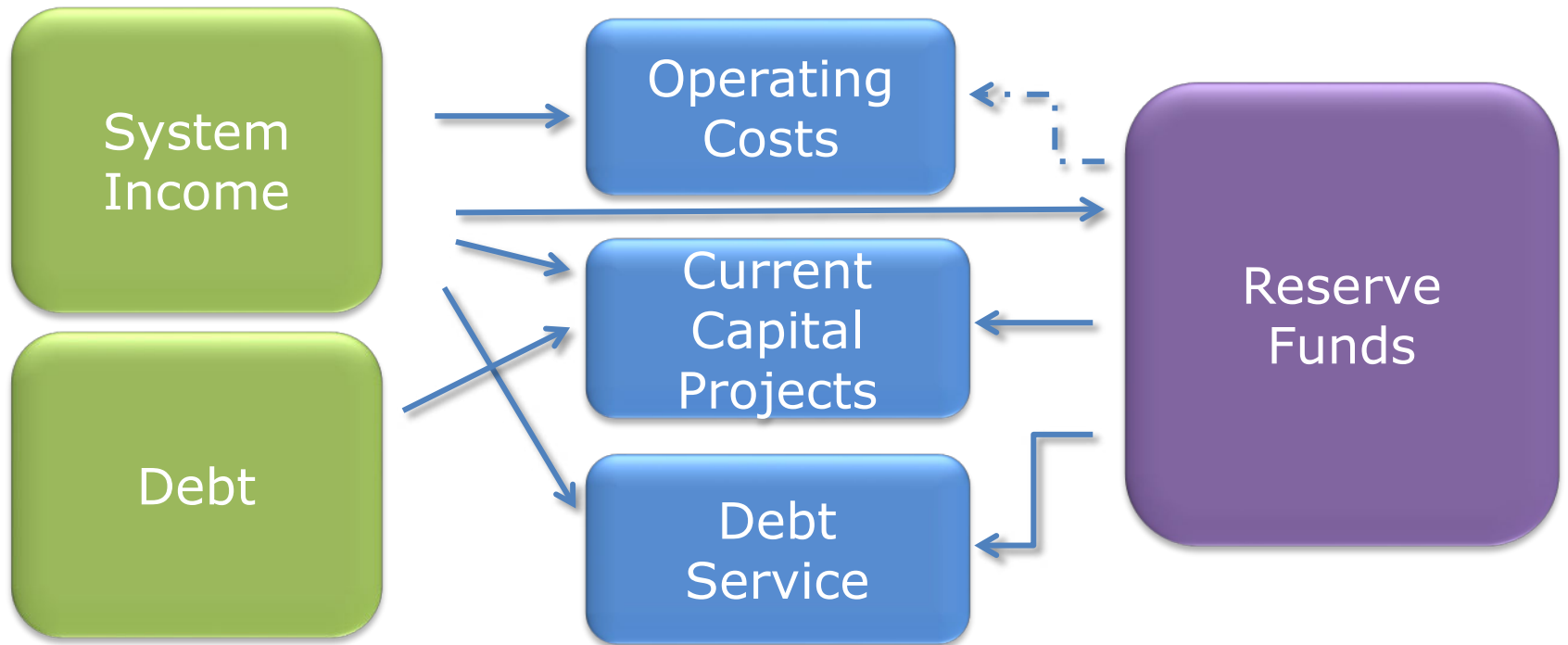
Many Types of Reserve Funds

- **Capital Reserve Fund**—Infrastructure rehabilitation and replacement
- **Repair Fund**—Known, ongoing maintenance issues
- **Emergency Fund**—Unknown, unanticipated maintenance issues
- **Rainy Day Fund**—Unexpected revenue shortfalls

How Much Do You Need In Your Reserves?

- Beyond what is needed for debt service, it depends
- Enough to pay for your most expensive piece of equipment?
- Enough to cover your O&M costs if you had no revenue for two months?
- Enough to cover the projects in your capital improvement plan?

Water and Wastewater System Finance Diagram



Financial Policies

- Guidelines for an organization's financial operational and strategic decision making
- Often focused on financial stability and health of the utility, with targets for cash management, risk management, debt, investment, revenues, spending, and more

Transfers to the General Fund

- Generally, your water/wastewater system should not be subsidizing the tax base and vice versa
- However, if you receive services from the local government, it is appropriate for you to pay for them (time of town manager, attorney, payroll, etc.)

Budgeting



Budgets should reflect the goals of the governing body

- Appropriation/Allocation of funds
- Measuring and promoting financial and operational performance
- Setting rates and fees
- Public education



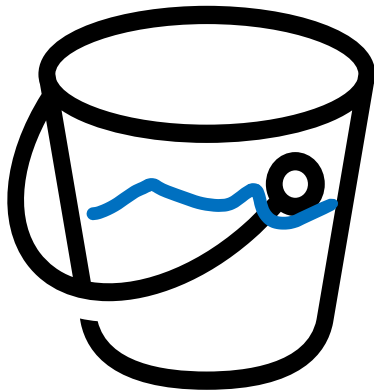
Budgeting Tips

- Check budget against actuals monthly



Budgeting Tips

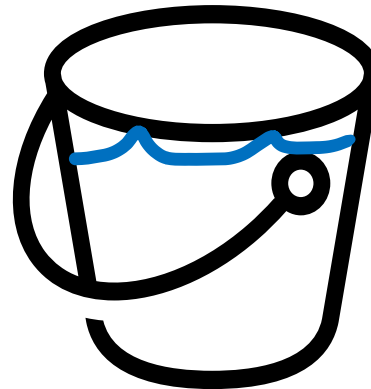
- Check budget against actuals monthly
- Think of each 'bucket' and not just whole budget



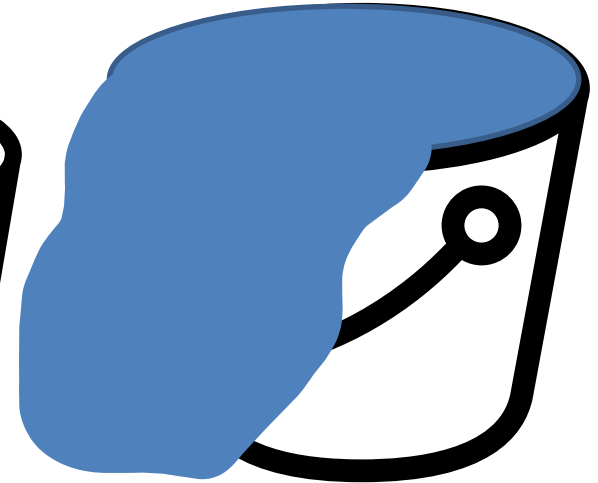
Energy



Chemicals



Salaries



Capital
Repairs

Budgeting Tips

- Check budget against actuals monthly
- Think of each 'bucket' and not just whole budget
- Consider timing of spending and budget accordingly
- Look at all your costs

Sneaky (often overlooked) costs

- Indirect costs of running the system (shared management costs, shared facility costs, etc.)
- Capital-related costs (debt service, **depreciation**, sinking fund transfers, pay as you go capital expenditures)
- Retirement/pension

Budgeting for the full cost

- Operations & maintenance expenditures
- Taxes and accounting costs
- Contracts
- Principal and interest on long-term debt
- Contingencies for emergencies
- Reserves for capital improvement
- Indirect costs (fleet, buildings, shared expenditures, etc.)
- Related services (e.g.: source water protection for drinking water enterprise fund?)
- Opportunity costs

Budget as a communication tool

Within Utility

- Who is responsible?

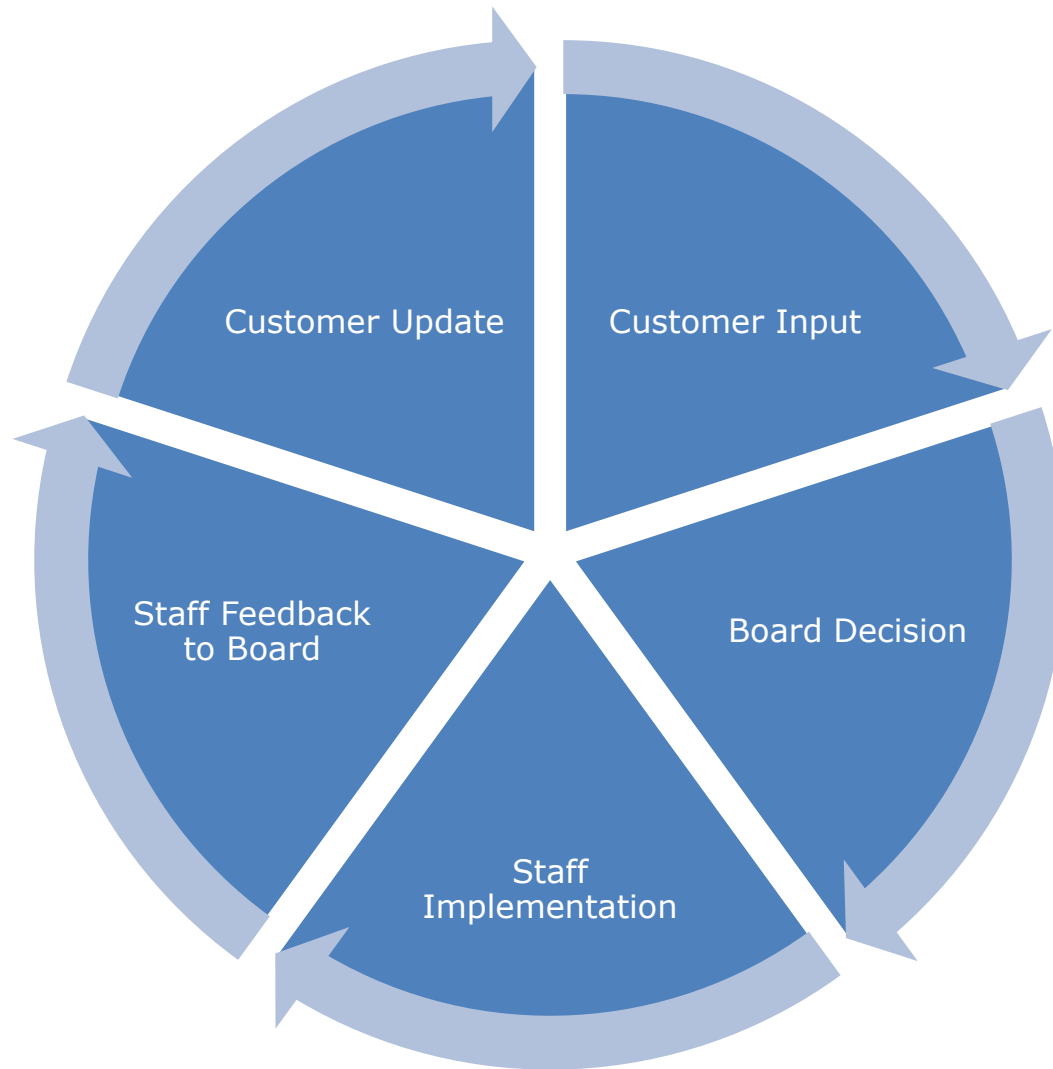
Within Leadership

- What are the priorities?

With Customers

- Building transparency

Budget as a communication tool



Poll

- Who is responsible for measuring expenses against the budget?
 - A. Finance officer
 - B. Utility Manager
 - C. Elected Official
 - D. A committee
 - E. Not sure
 - F. other

Financial Benchmarking



Can You Sleep at Night?

- Is your utility (public enterprise) self-sufficient?
- If your customers stop paying their bills, how long can you maintain operations?
- Are you able to cover your debt service after paying for your day-to-day operations?
- How much of your utility assets' expected life has already run out (and how much is left)?

Operating Ratio

Days Cash on Hand

Debt Service Coverage Ratio

Asset Depreciation

EFC's Financial Benchmarking Video



Intro to CAFRs

- CAFR = Comprehensive Annual Financial Report
- Completed every year, includes financial data for the utility (and maybe the entire local government)
- This is where we find financial data that is necessary to calculate the financial indicators on the dashboard

Poll

- Do you have yearly audited financial statements?
 - A. Yes and I read them every year
 - B. Yes but I don't read them every year
 - C. No
 - D. Not sure



Why Care About Financial Benchmarks?

- Get a holistic picture of utility performance and needs
- Future goals/growth
- Capital planning
- Affordability
- Financing options

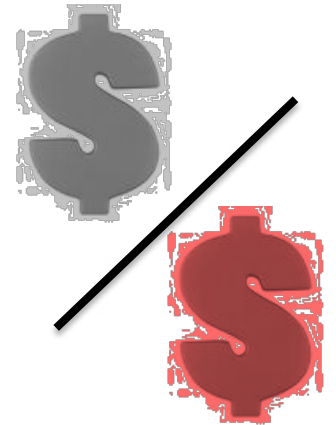


Operating Ratio (OR)

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

Natural Benchmark: > 1.0

- A measure of self-sufficiency.
- The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running (see next slides)



This Funny Thing Called Depreciation

- Depreciation is an accounting solution to the problem of things getting old
- You have a “cost” every year of your infrastructure wearing out, a percentage of its value

T'mayto, Tahmahto: Operating Ratio



- You may wish to *include* depreciation in your operating ratio:
 - Operating revenues divided by operating expenses, including depreciation and the provision for bad debts.
- National Association of Clean Water Agencies
 - Operating revenues divided by operating expenditures (*excludes* 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	444,231	- ①
OPERATING EXPENSES		
Personnel services	178,885	
Contractual services	63,898	
Other supplies and expense	126,202	- ③
Depreciation	142,463	
Total operating expenses	511,448	- ②
Operating income (loss)	(67,217)	

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

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Total operating expenses	<u>511,448</u>	- ②
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~~

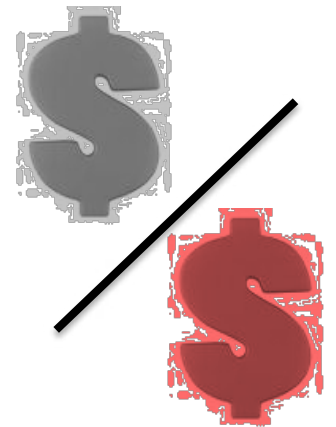
Debt Service Coverage Ratio

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

Natural Benchmark: > 1

A measure of the ability to pay debt service with operating revenue:

- Operating Revenue left over after daily operation expenditures, divided by (%) Debt Service



Debt Service Coverage Ratio

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

Page 1 of 2

	<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	(35,128)
Net cash (used) by capital and related financing activities	<u>(124,624)</u>

} (4)

Debt Service Coverage Ratio - Mayberry

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

$$\boxed{\$444,231} - \boxed{\$368,985}$$

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

2.

$$= \boxed{0.89}$$

$\boxed{\$84,783}$

Principal & Interest on Long-Term Debt (4)

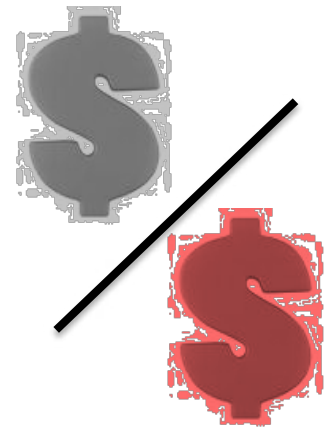
P \$49,655
+ I \$35,128

Days Cash on Hand

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

Benchmark? At the very least, enough to last a billing cycle or when you expect a substantial inflow of cash

A measure of the ability of the utility to weather a significant temporary reduction in revenue to continue paying for daily operations



Days of Cash on Hand

MAYBERRY
STATEMENT OF NET ASSETS
PROPRIETARY FUND
DECEMBER 31, 2010

Enterprise Funds
Water and Sewer

ASSETS

Current assets

Cash
Restricted cash
Receivables, net
Total current assets

107,706

176,424

41,870

326,000

Capital assets

Land and improvements
Distribution and collection systems
Buildings
Less accumulated depreciation
Total capital assets

10,229

5,732,845

503,398

(2,514,933)

3,731,539

Total Assets

\$ 4,057,539

LIABILITIES

Days of Cash on Hand - Mayberry

3.
$$\frac{\$107,706}{\$368,985 / 365} = 107$$

Unrestricted Cash & Cash Equivalents (5)

Operating Expenses (excluding depreciation) (2-3)

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

Asset Depreciation*

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

Benchmark? Don't get close to 1.0

A measure of how much of your total assets have already depreciated. As you approach 1.0, your system is near the end of its expected life.



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

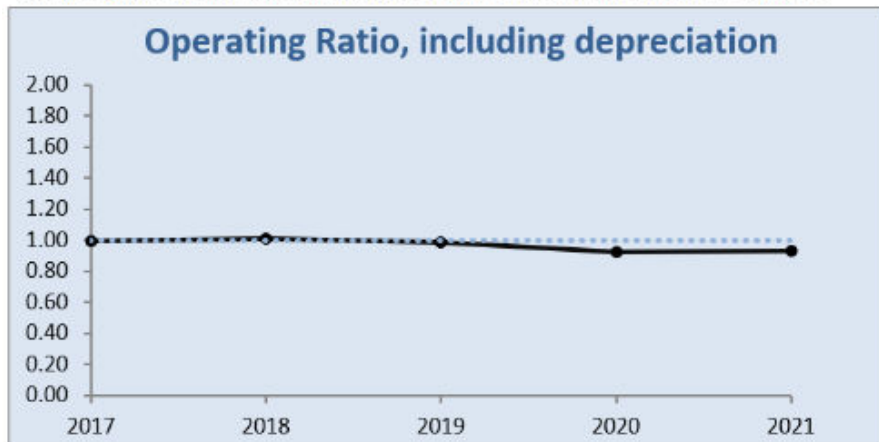
Financial Health Check Up Tool

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

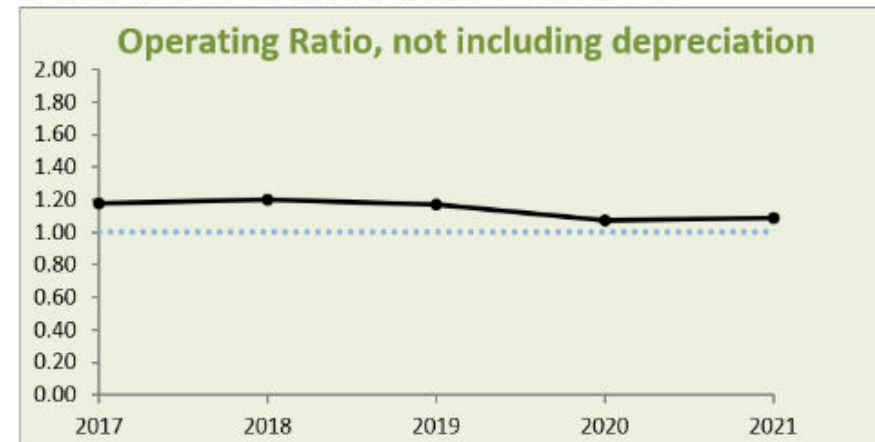
Field in the financial statement/CAFR

	2017	2018	2019	2020	2021
Total Operating Revenues	\$ 2,093,254	\$ 2,205,669	\$ 2,224,051	\$ 2,334,927	\$ 2,403,480
Total Operating Expenses	\$ 2,103,759	\$ 2,179,448	\$ 2,252,873	\$ 2,521,833	\$ 2,591,843
Depreciation & Amortization Expenses	\$ 332,340	\$ 344,392	\$ 348,059	\$ 351,772	\$ 391,104
Debt Principal Payments	\$ 169,259	\$ 180,149	\$ 39,260	\$ 39,260	\$ 39,259
Debt Interest Payments	\$ 22,686	\$ 16,412	\$ 10,992	\$ 10,208	\$ 9,422
Current Assets, excluding inventories, restricted cash, prepaids	\$ 1,662,493	\$ 1,526,328	\$ 1,634,715	\$ 2,115,548	\$ 1,732,525
Current Liabilities, excluding deposits & bond anticipation notes	\$ 110,739	\$ 101,499	\$ 189,228	\$ 352,281	\$ 317,435
Unrestricted Cash & Investments	\$ 1,217,862	\$ 1,073,590	\$ 752,765	\$ 1,310,894	\$ 1,066,975
Total Accumulated Depreciation	\$ 4,004,617	\$ 4,345,792	\$ 4,693,851	\$ 5,045,623	\$ 5,436,727
Total Depreciable Capital Assets	\$ 12,889,349	\$ 13,664,784	\$ 13,651,528	\$ 13,400,817	\$ 15,917,091

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?



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