Water System Financial Management for Board Members, Local Elected Officials, and System Owners

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu

Webinar Objectives

- Introduce financial capacity to individuals who lead small water systems

- Explore best practices related to small water system financial management

Water System Capacities

Financial

- Revenue is sufficient to cover expenses now and into the future
- Credit worthiness
- Fiscal management and controls in place

Water System Capacities

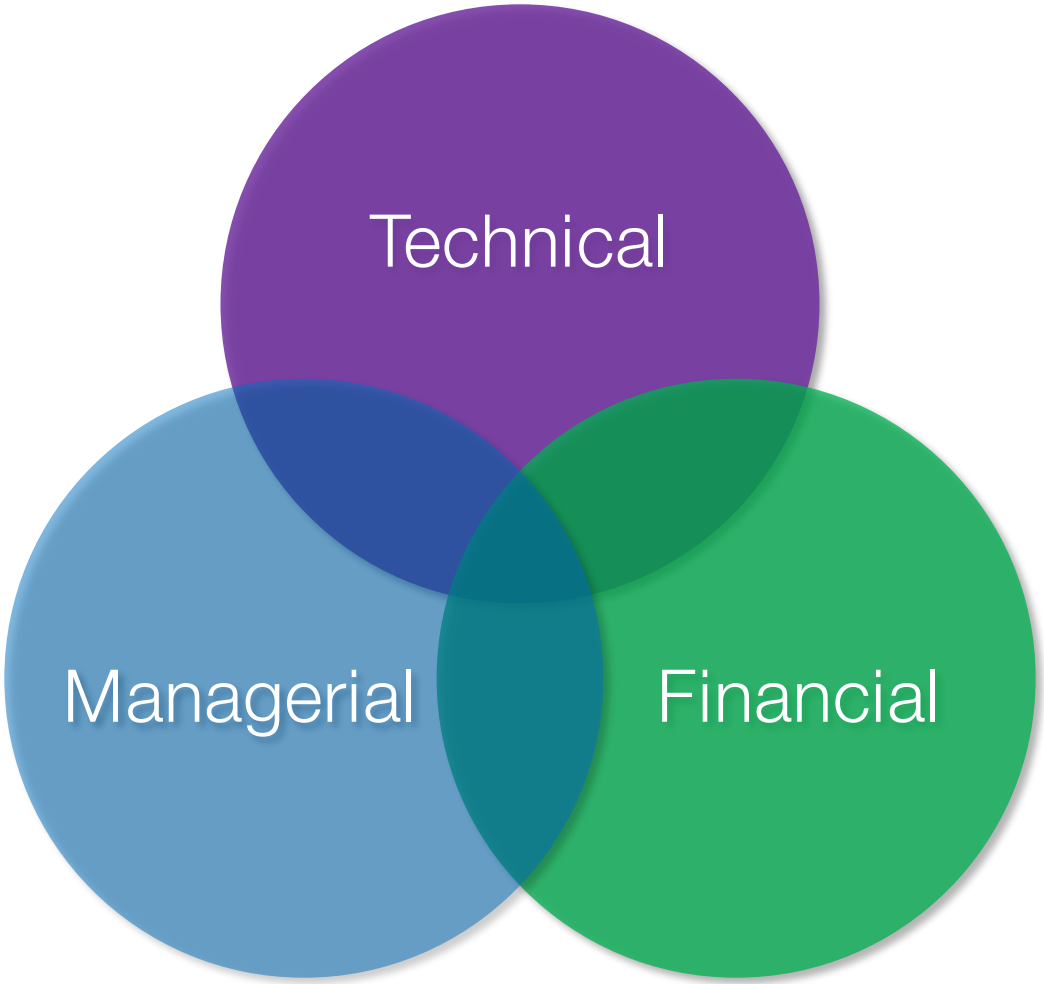
Managerial

- Appropriate staffing and organization
- Accountability of ownership

Water System Capacities

- Technical knowledge
- Adequacy of water supply
- Adequacy of treatment, storage, and distribution

Water System Capacities



https://www.epa.gov/laws-regulations/summary-safe-drinking-water-act

CONTACT US SHARE

Laws & Regulations

- By Sector
- Enforcement
- Policy & Guidance
- Regulations

Summary of the Safe Drinking Water Act

42 U.S.C. §300f et seq. (1974)

Quick Links

- The official text of SDWA is available in the *United States Code* on FDSys, from the U.S. Government Printing Office

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources.

The Act authorizes EPA to establish minimum standards to protect tap water and requires all owners or operators of public water systems to comply with these primary (health-related) standards. The 1996 amendments to SDWA require that EPA consider a detailed risk and cost assessment, and best available peer-reviewed science, when developing these standards. State governments, which can be approved to implement these rules for EPA, also encourage attainment of secondary standards (nuisance-related). Under the Act, EPA also establishes minimum standards for state programs to protect underground sources of drinking water from endangerment by underground injection of fluids.

Compliance and Enforcement

- Safe Drinking Water Act Compliance Monitoring: investigations and inspections
- Water Enforcement

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html

Capacity Development

The Safe Drinking Water Act of 1996 (SDWA) requires states to incorporate technical, managerial, and financial (TMF) capacity into public water system operations. This requirement helps ensure that public water systems have long-term sustainability and are able to maintain compliance with all applicable drinking water laws and regulations.

The federal SDWA Amendments were signed into law in part because of the significant problems that small public water systems (SWS) had in providing safe, reliable drinking water to their customers. It included mandates to the states to prevent new non-viable systems. It also mandated the development and implementation of a comprehensive capacity development strategy to assist public water systems in obtaining adequate capacity.

In 1997 Senate Bill (SB) 1307 became law, enabling California to implement the provisions of the federal SDWA. This statute established a financial assistance program, entitled the DWSRF, which included a comprehensive technical assistance program for small systems. In order to help ensure the provision of safe, reliable drinking water to customers on a long term basis, this legislation was designed to prevent the formation of a new public water system or the approval of a public water system change of ownership unless that system is determined by the State to have adequate TMF capacity.

TMF Assessment

In California, a TMF Assessment must be completed by public water systems that are applicants for funding, new water systems applying for a permit, or water systems changing ownership. Use the TMF Instructions document as a reference when completing the TMF Assessment.
If the water system in question is a Nontransient Non-Community system or a Community system that serves less than 10,000 people, please complete the standard TMF Assessment form. If the water system serves more than 10,000 people, please complete the alternative TMF Assessment form.
For Transient Non-Community water systems, consider the following four questions:

1. Is the source from a well or enclosed spring, untreated and on property owned by the system?
2. Does the system have a single owner or sole proprietor?
3. Is the owner responsible for all aspects of the water system?
4. Does the system have an "expense only" budget? (You do not charge for the water that you provide).

If the answer to all of the above questions for Transient Non-Community water systems is "Yes", please complete the TMF Capacity Assessment "E-Z" form. If the answer to any of the four questions is no or if you are a Nontransient Non-Community water system, please fill out the standard TMF Assessment form

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html

State Water Resources Control Board (State Water Board)
Drinking Water Program

Instructions

For completing the
Technical, Managerial, and Financial (TMF)
Assessment Form

For Public Water Systems

DWSRF Financing Applicants
New Water Systems
Changes of Ownership

Revised December 4, 2014

State Water Resources Control Board

TMF Assessment Form

ASSESSMENT TYPE: ☐ Financing Project ☐ New System ☐ Change of Ownership

WATER SYSTEM CLASSIFICATION:
☐ Community Water System
☐ Nontransient Noncommunity Water System
☐ Transient Noncommunity (TNC) Water System
You may be eligible to use the TNC EZ Form

A. WATER SYSTEM INFORMATION

Water System Name:
Water System Number: CA ___ ___ ___ ___ ___ ___ ___
Water System Physical Address: _____
City: _____ Zip: _____
County:
Division of Drinking Water Office or Local Primacy Agency:

B. PERSON COMPLETING THIS TMF ASSESSMENT (*Required fields)

*Name:	*Signature:
*Title :	*Date Assessment Completed:
*Phone Number:	Email Address:
*Company Name and Address: _____	
City: _____ Zip: _____	

C. MAIN WATER SYSTEM CONTACT PERSON INFORMATION (To be completed only if it's different from B. above)

Name:	Title:
Phone Number:	Email Address:
Water System Mailing Address: _____	
City: _____ Zip: _____	

Rev 11/2014

Water System Capacities

Technical

1. Consolidation Feasibility
2. System Description
3. Certified Operators
4. Source Capacity
5. Operations Plan
6. Training

Managerial

7. Ownership
8. Water Rights
9. Organization
10. Emergency Response Plan
11. Policies

Financial

12. Budget Projection/Capital Improvement Plan
13. Budget Control

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html

FIVE YEAR BUDGET PROJECTION (Small Community Water System)

INSTRUCTIONS: Yellow-shaded cells are for data entry; all other cells are locked except line itemdescriptions which can be changed if needed. Years 2 through 5 will be compounded automatically by the inflation factor in Cell G6.

System Name: XYZ Water Company

Inflation Factor (%): 3.0

System ID Number: 1000002

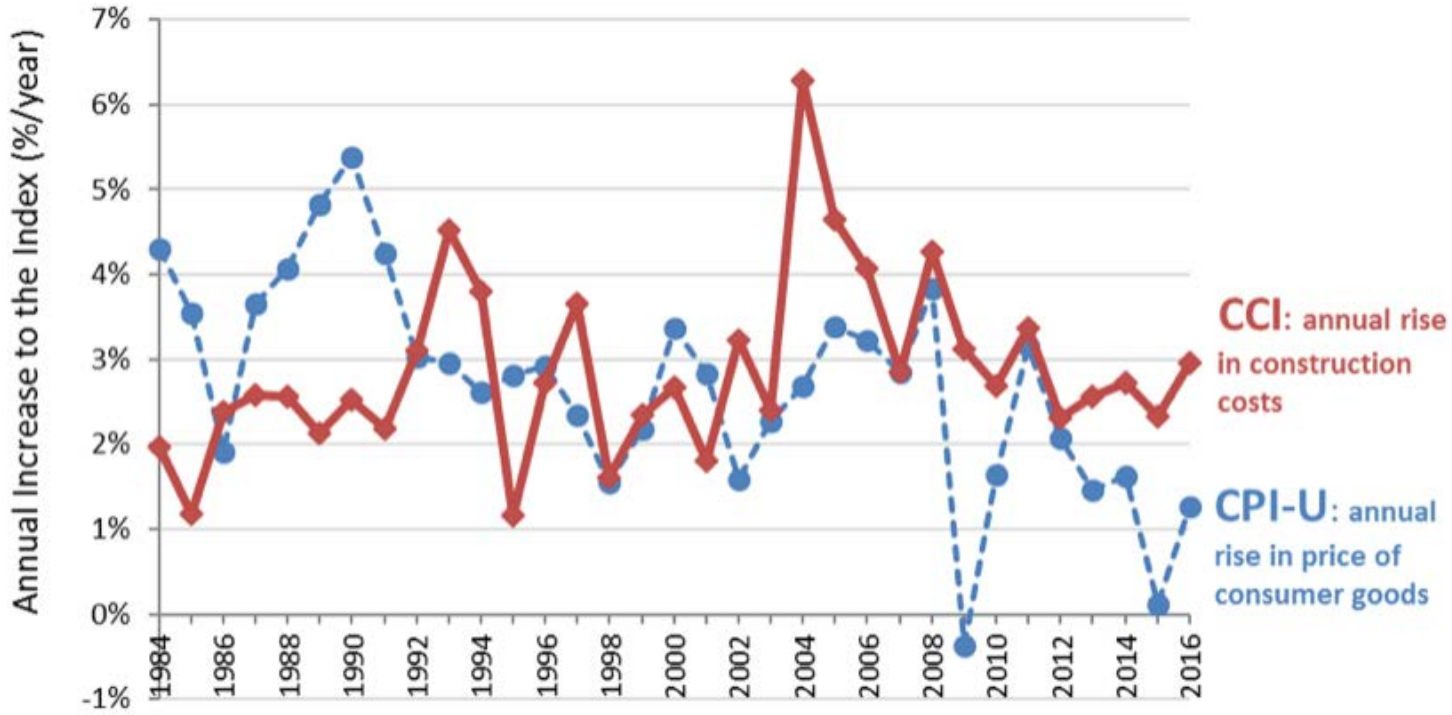
LINE		EXPENSES AND SOURCE OF FUNDS	2009	2010	2011	2012	2013
1		**OPERATIONS AND MAINTENANCE (O&M) EXPENSES**					
2		Salaries and Benefits	30,000.00	30,900.00	31,827.00	32,781.81	33,765.26
3		Contract Operation and Maintenance	0.00	0.00	0.00	0.00	0.00
4		Power and Other Utilities	2,500.00	2,575.00	2,652.25	2,731.82	2,813.77
5		Fees Regulatory	500.00	515.00	530.45	546.36	562.75
6		Treatment Chemicals	100.00	103.00	106.09	109.27	112.55
7		Coliform Monitoring	1,500.00	1,545.00	1,591.35	1,639.09	1,688.26
8		Chemical Monitoring	500.00	515.00	530.45	546.36	562.75
9		Transportation	0.00	0.00	0.00	0.00	0.00
10		Materials, Supplies, and Parts	150.00	154.50	159.14	163.91	168.83
11		Office Supplies	200.00	206.00	212.18	218.55	225.10
12		Miscellaneous	300.00	309.00	318.27	327.82	337.65
13		Additional O&M for New Project	0.00	0.00	0.00	2,000.00	2,060.00
14		**Total O&M Expenses:**	35,750.00	36,822.50	37,927.18	41,064.99	42,296.94
16		**GENERAL AND ADMINISTRATIVE EXPENSES**					
17		Engineering and Professional Services	500.00	515.00	530.45	546.36	562.75
18		Depreciation and Amortization	0.00	0.00	0.00	0.00	0.00
19		Insurance	1,000.00	1,030.00	1,060.90	1,092.73	1,125.51
20		Existing Contribution to CIP (From CIP J48)	16,712.50	16,712.50	16,712.50	16,712.50	16,712.50
21		O&M Reserve	0.00	0.00	0.00	0.00	0.00
22		Other Reserves	0.00	0.00	0.00	0.00	0.00
23		Miscellaneous	100.00	103.00	106.09	109.27	112.55
24	**	New Funding Project Costs	0.00	0.00	250,000.00	0.00	0.00
25		Additional New Project Contribution to CIP (From CIP J59)	0.00	0.00	0.00	9,954.44	9,954.44
26	**	Debt Service	0.00	0.00	0.00	10,000.00	10,000.00
27		**Total General and Administrative Expenses:**	18,312.50	18,360.50	268,409.94	38,415.31	38,467.76
28		**TOTAL EXPENSES (Line 14+ Line 27):**	54,062.50	55,183.00	306,337.12	79,480.30	80,764.70

Why Budget for the Water System at All?

- Costs always going up

The Construction Cost Index (CCI) has been rising faster than the Consumer Price Index-Urban (CPI-U) in recent years

Construction costs (CCI) rose on average of 2.6%/year in the last five years, while consumer goods (CPI-U) only rose an average of 1.3%/year in the same period



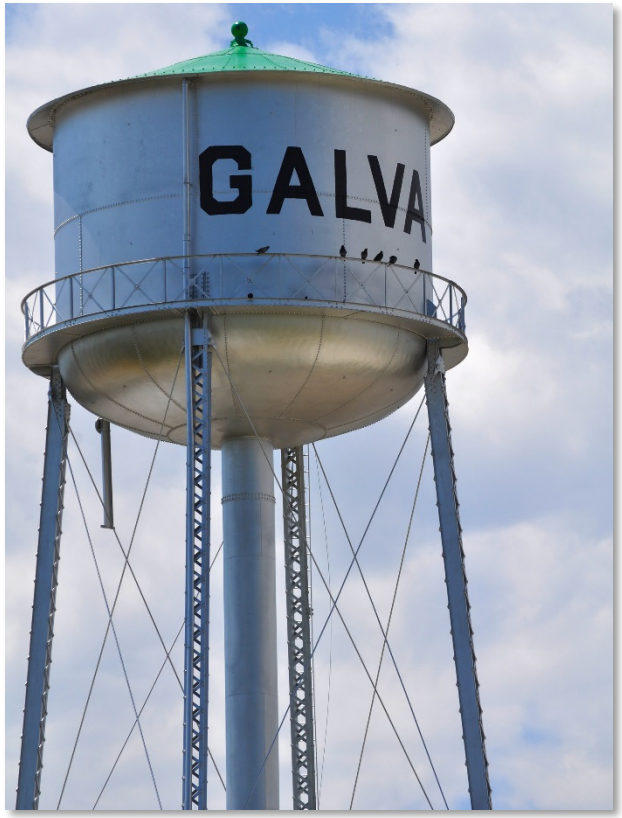
Data graphed by the Environmental Finance Center at the University of North Carolina, Chapel Hill.
Data Sources: Bureau of Labor Statistics (CPI-U), Engineering News-Record ENR.com (CCI), InflationData.com (CPI-U), USDA Natural Resources Conservation Services (spreadsheet containing CCI and CPI-U).

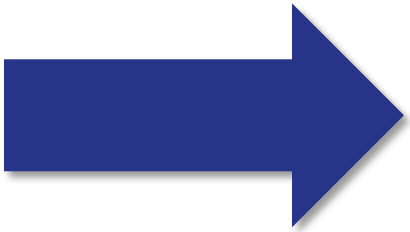
Source: *Environmental Finance* blog post available at http://efc.web.unc.edu/2012/09/26/using-an-index-to-help-project-capital-costs-into-the-future/

Why Budget for the Water System at All?

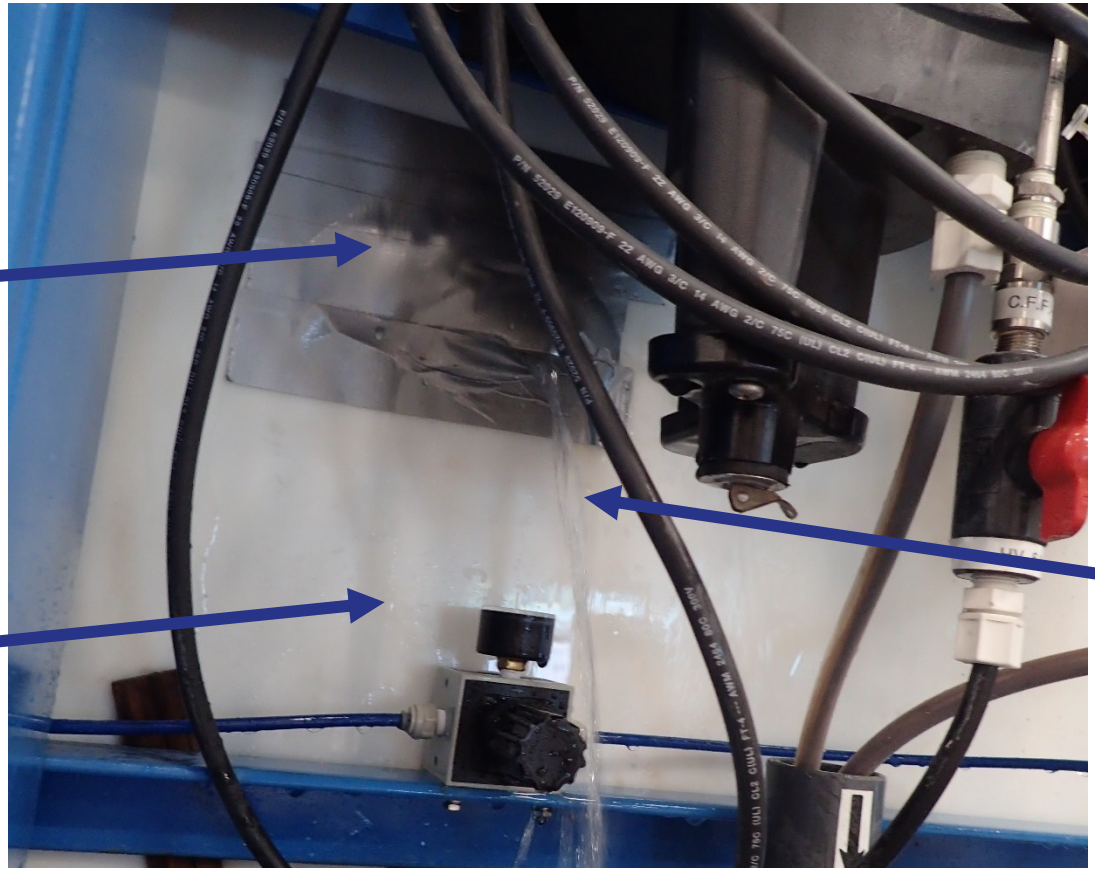
- Costs always going up
- Capital rehabilitation or replacement

Infrastructure Wears Out





Infrastructure Wears Out



Water Tank

Leak

Why Budget for the Water System at All?

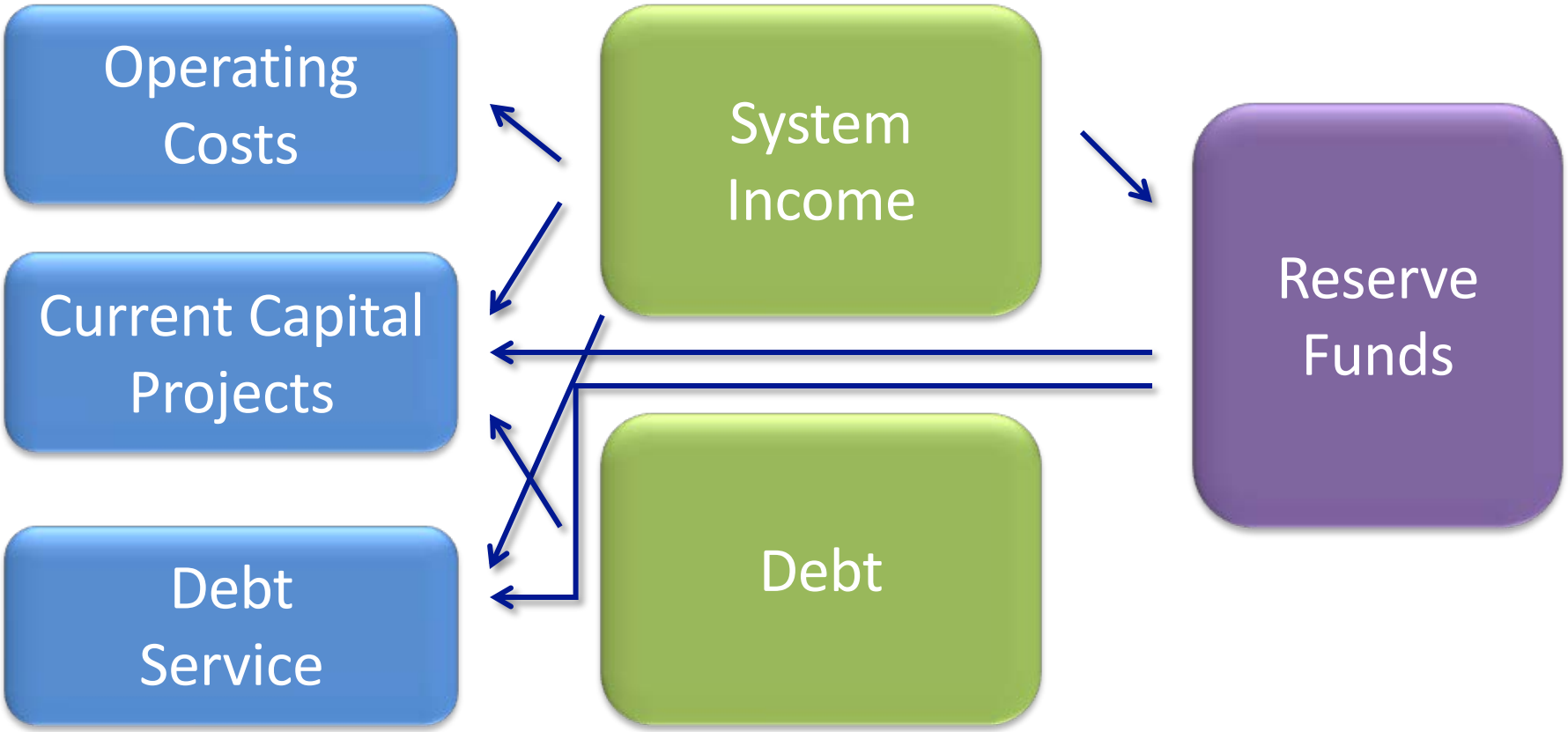
- Costs always going up
- Capital rehabilitation or replacement
- Changes to the number of customers served
- Changes to revenue, expected or not

Where to Start?

- Last year's budget (line item budget), making incremental changes

- At zero, anticipating the revenues and expenses from scratch

Water System Finance Diagram



Budget Projection

Develop a 5-year budget projection that lists all of the expenses of the water system including:

- Operations and maintenance (O&M) expenses such as salaries, power, chemicals, monitoring, and other costs

Budget Projection

OPERATIONS AND MAINTENANCE (O&M) EXPENSES		
	Salaries and Benefits	30,000.00
	Contract Operation and Maintenance	0.00
	Power and Other Utilities	2,500.00
	Fees Regulatory	500.00
	Treatment Chemicals	100.00
	Coliform Monitoring	1,500.00
	Chemical Monitoring	500.00
	Transportation	0.00
	Materials, Supplies, and Parts	150.00
	Office Supplies	200.00
	Miscellaneous	300.00
	Additional O&M for New Project	0.00
	Total O&M Expenses:	35,750.00

Budget Projection

Develop a 5-year budget projection that lists all of the expenses of the water system including:

- Administrative expenses such as insurance and debt service

Budget Projection

GENERAL AND ADMINISTRATIVE EXPENSES		
	Engineering and Professional Services	500.00
	Depreciation and Amortization	0.00
	Insurance	1,000.00
	Existing Contribution to CIP (From CIP J48)	16,712.50
	O&M Reserve	0.00
	Other Reserves	0.00
	Miscellaneous	100.00
**	New Funding Project Costs	0.00
	Additional New Project Contribution to CIP (From CIP J59)	0.00
**	Debt Service	0.00
	Total General and Administrative Expenses:	18,312.50

Budget Projection

Develop a 5-year budget projection that lists all of the expenses of the water system including:

- Funded reserve accounts including the capital improvement plan (CIP), operations and maintenance reserve, contingency reserve, and other reserve accounts

Many Types of Reserve Funds

- CIP Fund—Infrastructure rehabilitation and replacement

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html

SIMPLIFIED CAPITAL IMPROVEMENT PLAN (CIP)

Date:

System ID No.: 1000002

System Name: XYZ Water Company

Service Connections: 85

*Enter information only in YELLOW shaded cells

QTY	COMPONENT			UNIT COST	INSTALLED COST	AVG LIFE, YEARS	ANNUAL RESERVE	MONTHLY RESERVE	MONTHLY RESERVE PER CUSTOMER
2	Drilled Well, 6", steel casing	Depth:	150	80	24000	25	960.00	80.00	0.94
	Drilled Well, 8", steel casing	Depth:	600	130	0	25	0.00	0.00	0.00
	Drilled Well, 12", steel casing	Depth:		200	0	25	0.00	0.00	0.00
2	Wellhead Electrical Controls			700	1400	25	56.00	4.67	0.05
	Submersible Pump, 20 HP			9000	0	7	0.00	0.00	0.00
	Submersible Pump, 3 HP			2000	0	7	0.00	0.00	0.00
2	Submersible Pump, 5 HP			3500	7000	7	1000.00	83.33	0.98
	Booster Pump Station, 25 HP, complete			14000	0	5	0.00	0.00	0.00
	Booster Pump Station Electrical Controls			900	0	5	0.00	0.00	0.00
	Pressure Tank	Gallons:		1.5	0	10	0.00	0.00	0.00
2	Pressure Tank	Gallons:	80	1.5	240	10	24.00	2.00	0.02
	Storage Tank, Plastic	Gallons:		0.5	0	10	0.00	0.00	0.00
	Storage Tank, Redwood	Gallons:		1.3	0	40	0.00	0.00	0.00
	Storage Tank, Redwood	Gallons:		1.3	0	40	0.00	0.00	0.00
1	Storage Tank, Steel	Gallons:	200,000	1.2	240000	50	4800.00	400.00	4.71
	Storage Tank, Steel	Gallons:		1.2	0	50	0.00	0.00	0.00
	Storage Tank, Steel	Gallons:		1.2	0	50	0.00	0.00	0.00
	Storage Tank, Concrete	Gallons:		1.5	0	80	0.00	0.00	0.00
	Master Meter, 2"			450	0	10	0.00	0.00	0.00
2	Master Meter, 3"			800	1600	10	160.00	13.33	0.16
	Master Meter, 4"			2500	0	10	0.00	0.00	0.00
2	Hypochlorinator w/ Tank & Pump, Complete			800	1600	10	160.00	13.33	0.16
100	Pipe w/ sand bedding, 1" (Enter linear feet for quantity)			20	2000	50	40.00	3.33	0.04
0	Pipe w/ sand bedding, 2" (Enter linear feet for quantity)			25	0	50	0.00	0.00	0.00
0	Pipe w/ sand bedding, 3" (Enter linear feet for quantity)			30	0	50	0.00	0.00	0.00
600	Pipe w/ sand bedding, 4" (Enter linear feet for quantity)			35	21000	50	420.00	35.00	0.41
7000	Pipe w/ sand bedding, 6" (Enter linear feet for quantity)			50	350000	50	7000.00	583.33	6.86
	Standpipe Hydrant, 1-1/2"			700	0	20	0.00	0.00	0.00
7	Standpipe Hydrant, 2-1/2"			900	6300	20	315.00	26.25	0.31

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html

Table 1: Typical Equipment Life Expectancy

Equipment	Life Expectancy in Years
Source of supply	
Intake Structures	35 – 45
Wells and Springs	25 – 35
Galleries and Tunnels	30 – 40
Transmission mains	35 – 40
Pumping Plants	
Structures	30 – 60
Pumping Equipment	10 – 15
Treatment Plants	
Structures	30 – 60
Equipment	10 – 15

Many Types of Reserve Funds

- CIP Fund—Infrastructure rehabilitation and replacement
- O&M Fund—Known, ongoing maintenance issues
- Contingency Fund—Unknown, unanticipated maintenance issues
- Rainy Day Fund—Unexpected revenue shortfalls

How Much Do You Need In Your Reserves?

- It depends

- Enough to pay for your most expensive piece of equipment?
- Enough to cover your costs if you had no revenue for two months?
- Enough to cover the projects in your capital improvement plan?

Budget Projection

Develop a 5-year budget projection that lists all of the revenues of the water system including:

- All of the sources of funds the system receives including income from billing, assessments, hookup charges, reserve fund withdrawals, grants and loans, and other income

Budget Projection

REVENUES RECEIVED		
	Cash Revenues (Water Rates)	55,000.00
**	Depreciation Reserves	0.00
**	Fees and Services	0.00
**	Hookup Charges	0.00
**	Withdrawal from CIP or Other Reserves	0.00
**	Other Fund Sources: Interest, Etc.	200.00
**	Grants	0.00
**	SRF Loan	0.00
**	Business Loans	0.00
TOTAL REVENUE (Lines 31 through 39):		55,200.00

Budget Projection/CIP

- If the water system expenses and revenues are included in the overall budget for a facility such as a mobile home park or a school, separate the water system expenses from the total facility budget. Estimate if exact figures are not available.

Budget Projection/CIP

- Current/proposed rate structure
- Where appropriate, Prop 218 voter approval process that will be followed if a rate increase is planned
- Where appropriate, approval documentation from CA Public Utilities Commission

Budget Projection/CIP

- Average annual cost of water per connection for the last calendar year

- Documentation that revenues cover expenses including the CIP reserve, or describe the plan to increase revenues to cover these expenditures

We'll get back to this idea later in the hour

Budget Control

Procedures in which one person records a transaction and a manager reviews and approves it

- Cash receipts and disbursements
- Bank accounts
- Payroll

Budget Control

Financial reports prepared for review by governing board such as:

- Customer Receivables Report
- Check Register Review
- Bank Reconciliation Report
- Budget Comparison Report
- Quarterly Comparative Balance Sheet
- Tax Returns

Budget Control

Criteria and withdrawal guidelines for the maintenance of reserve accounts including:

- CIP Reserve
- Operations and Maintenance Reserve
- Contingency or Emergency Reserve
- Other Reserves

Budget Control

- Reporting procedures to appropriate levels of authority to ensure that there is no commingling of revenue sources

- Periodic reviews of the budget status by a Certified Public Accountant or appropriately qualified financial officer of the water system to ensure continuing financial viability. Three years of the most current audited financial reports must be submitted for all CDPH funding projects

Understanding Your Water System's Financial Position

Can You Sleep at Night?

Is your system 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 of Cash on Hand
Can your system meet its short term obligations?	Current Ratio

Whiteboard Video: Financial Benchmarking

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

Operating Ratio

$$\frac{\text{OPERATING REVENUES}}{\text{OPERATING EXPENSES}}$$

Operating Ratio

DEPRECIATION

ANNUAL COST OF WEAR
AND TEAR ON THE SYSTEM

What is Depreciation?

- Loss of value of an asset not restored by current maintenance
- An economic fact for any water system
- From both physical factors and functional or non-physical factors

https://www.youtube.com/watch?v=d8A7MJXFV1U&t=1115s

$$\frac{\text{Operating Revenues}}{\text{Operating Expenses incl. Depreciation}} > 1 \checkmark$$

Debt Service Coverage Ratio

$$\frac{\text{OPERATING REVENUES} - \text{OPERATING EXPENSES (EXCLUDING DEPRECIATION)}}{\text{PRINCIPAL} + \text{INTEREST PAYMENTS ON LONG TERM DEBT}}$$

Debt Service Coverage Ratio

$$\frac{\text{OPERATING REVENUES} - \text{OPERATING EXPENSES (EXCLUDING DEPRECIATION)}}{\text{PRINCIPAL} + \text{INTEREST PAYMENTS ON LONG TERM DEBT}}$$

$$> 1.2$$

Days Cash on Hand

$$\frac{\text{UNRESTRICTED CASH AND INVESTMENTS}}{\text{OPERATING EXPENSES EXCLUDING DEPRECIATION \& AMORTIZATION / 365}}$$

Days Cash on Hand

Current Ratio

UNRESTRICTED CURRENT ASSETS
EXCLUDING INVENTORIES AND
PREPAID ITEMS

CURRENT LIABILITIES

Current Ratio

> 1 ✓

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