Smart Management for Small Water Systems

Demystifying Depreciation and How to Make Use of It

December 1, 2016

EFCN environmental finance center network

American Water Works Association

UNC ENVIRONMENTAL FINANCE CENTER

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At the top right corner of your screen:

Show your control panel to submit questions and see answers

All phones/microphones are muted for the duration of the webinar.

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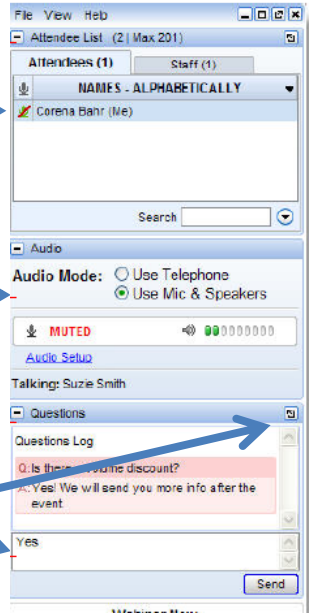
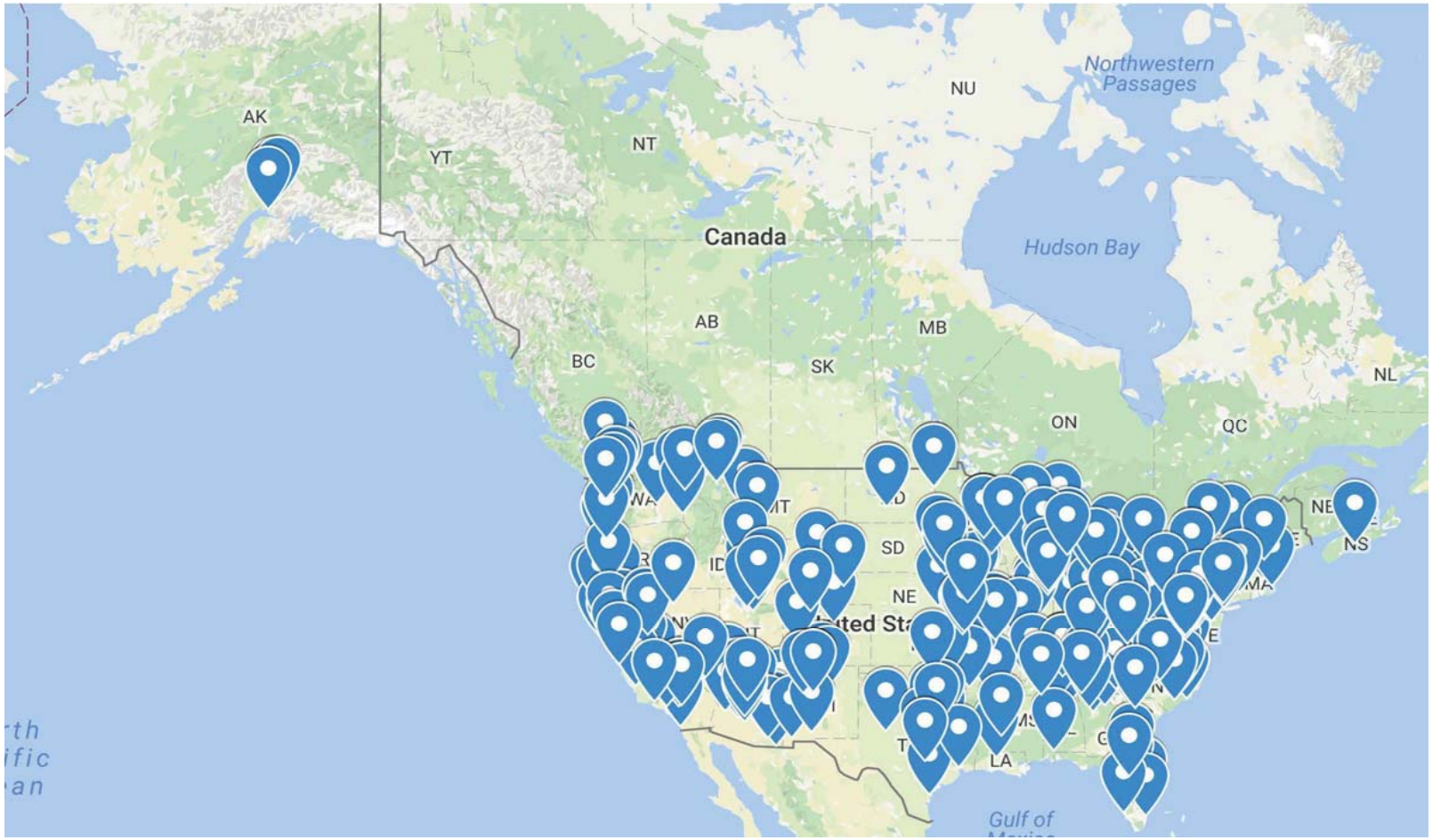
Attendee List

Audio: please choose between speakers and telephone. If you do not hear audio right now, please check your speaker volume or enter #[audio pin]# if using phone.

Submit questions in the Questions box at any time, and press [Send]. To undock and increase the size of the box, click on top right corner icon.



Map of Registrants



About the Environmental Finance Center Network (EFCN)

The Environmental Finance Center Network (EFCN) is a university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

The Smart Management for Small Water Systems Program

This program is offered free of charge to all who are interested. The Project Team will conduct activities in every state, territory, and the Navajo Nation. All small drinking water systems are eligible to receive free training and technical assistance.

Areas of Expertise

- Asset Management
- Energy Management Planning
- Financial Management
- Leadership Through Decision-making and Communication
- Managing Drought
- Water Loss Reduction
- Collaborating with Neighboring Communities
- Multi-funding
- Water Conservation
- Management and Finance 101
- Climate Resiliency
- Workforce Development

Project Team

- Environmental Finance Center at University of North Carolina at Chapel Hill
- Southwest Environmental Finance Center
- Syracuse University Environmental Finance Center
- Environmental Finance Center at Wichita State University
- EFC West
- Environmental Finance Center at University of Louisville
- Great Lakes Environmental Finance Center at Cleveland State University
- New England Environmental Finance Center at University of Southern Maine
- American Water Works Association

New England Environmental Finance Center

Environmental Finance Center Syracuse University

UNC Environmental Finance Center

University of Louisville Center for Environmental Policy & Management

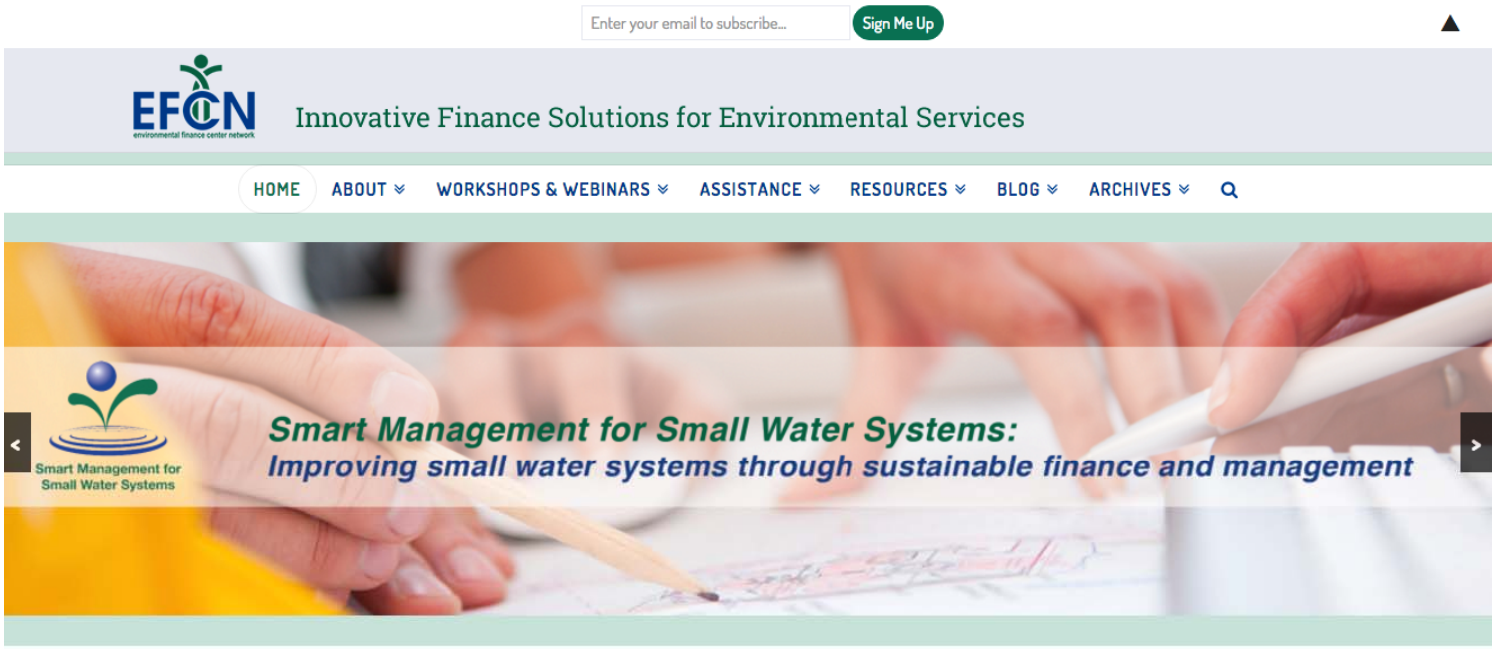
Great Lakes Environmental Finance Center

Southwest Environmental Finance Center

Wichita State University Hugo Wall School of Public Affairs Environmental Finance Center

EFCWest Environmental Finance Center West

Best Resource: EFCNetwork.org



A couple of questions before we start

Webinar Objectives

- Understand what depreciation is
- Learn how it is measured
- Explore ways depreciation can be used to improve system management
- Discuss the difference between depreciation and actual condition

Types of Costs

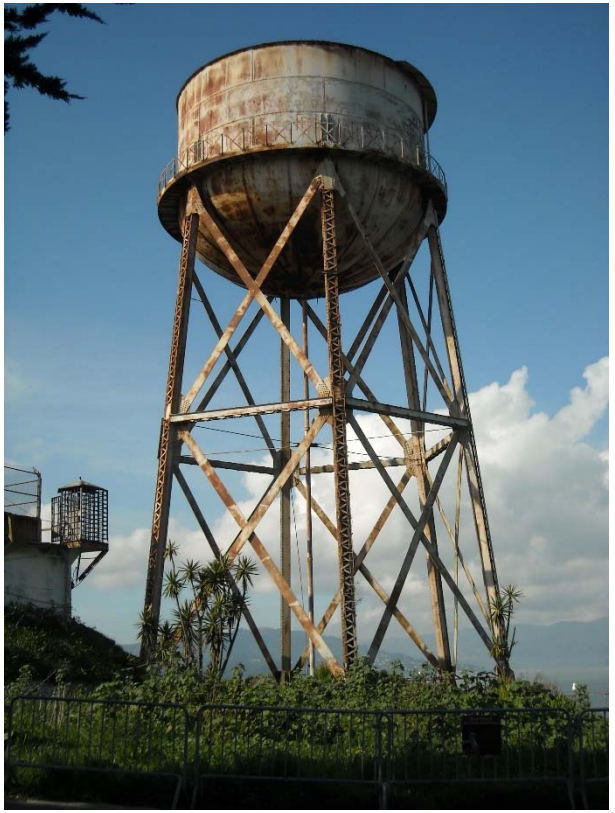
Operating Costs

Capital Costs

Debt Service

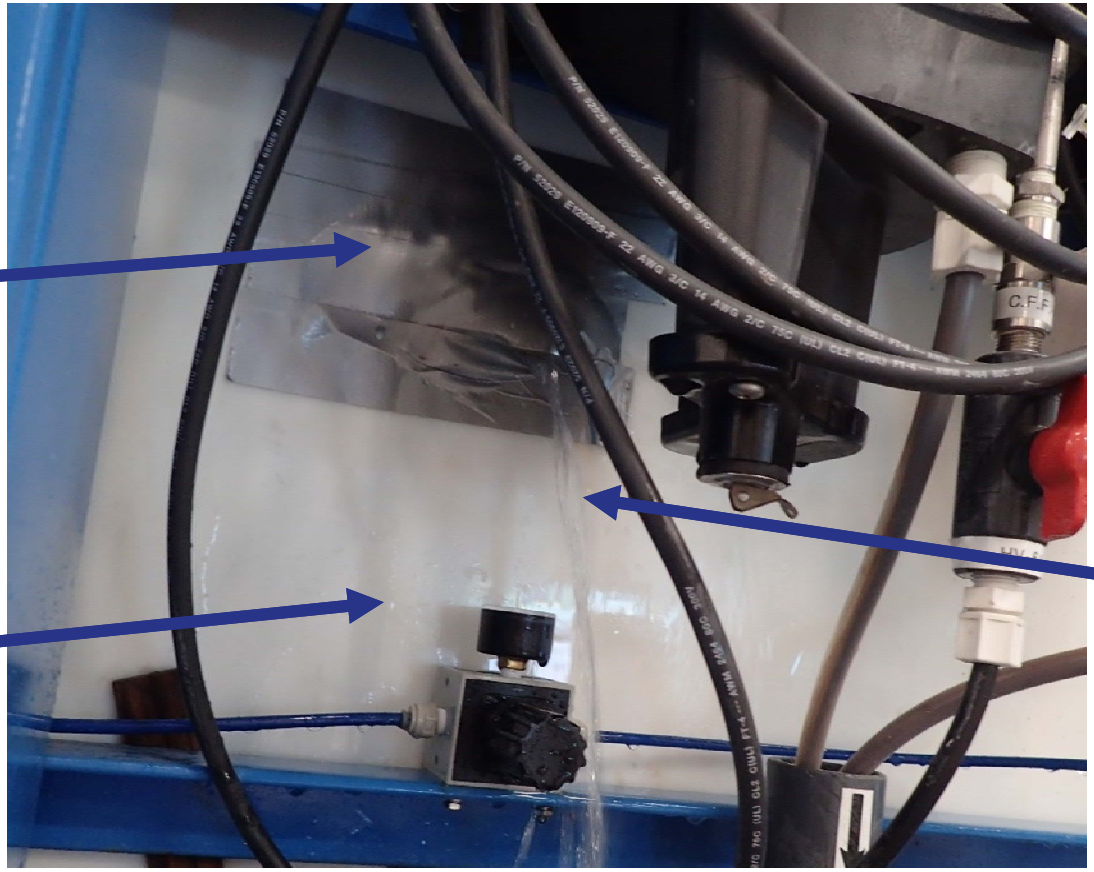
Capital Assets

Infrastructure Wears Out



Infrastructure Wears Out

Water Tank



Leak

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

Causes of Depreciation

Physical Factors

- Wear and tear resulting from use
- Decay, rot, rust, and corrosion from the passage of time and the elements
- Related to the extent that there is regular maintenance

Source: AWWA's Financial Management for Water Utilities: Principles of Finance, Accounting, and Management Controls

Causes of Depreciation

Functional or Non-Physical Factors

- Obsolescence due to new designs, innovations, and other improvements
- Inadequacy to meet current demand
- Changes in regulations

Source: AWWA's Financial Management for Water Utilities: Principles of Finance, Accounting, and Management Controls

Who cares about depreciation?

- Management
- Lenders
- Ratings agencies
- Public service commissions

But how is depreciation actually calculated?

Let's ask an expert!

Woody Trimble, CPA

Senior Manager

Jackson Thornton & Co.

Straight Line Depreciation Example

Large Hydropneumatic Tank

Purchase Price:

$10,000

Useful Life:

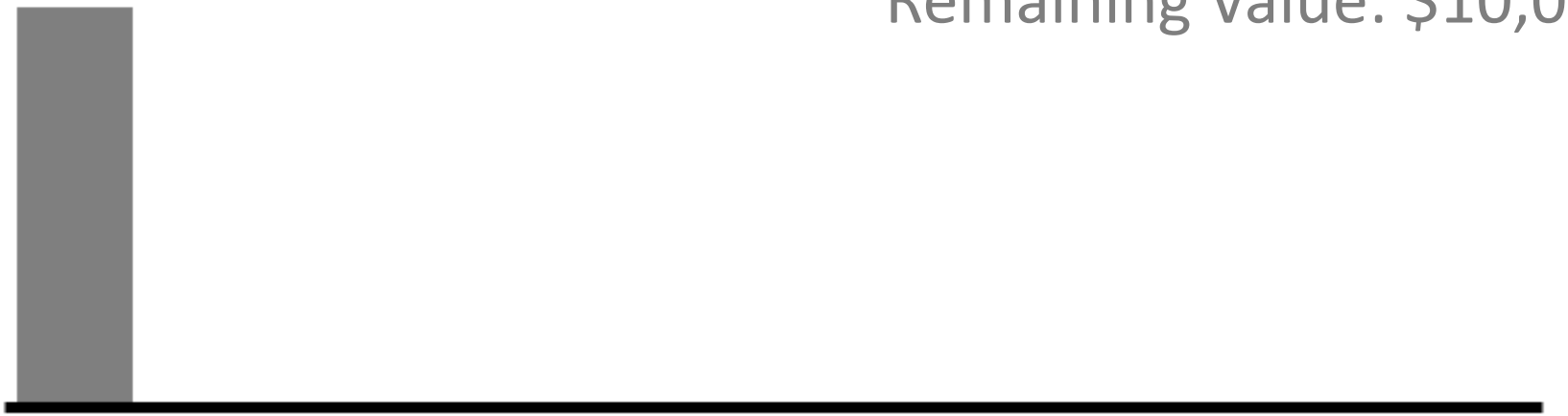
10 years

Annual Depreciation:

($1,000)

2016

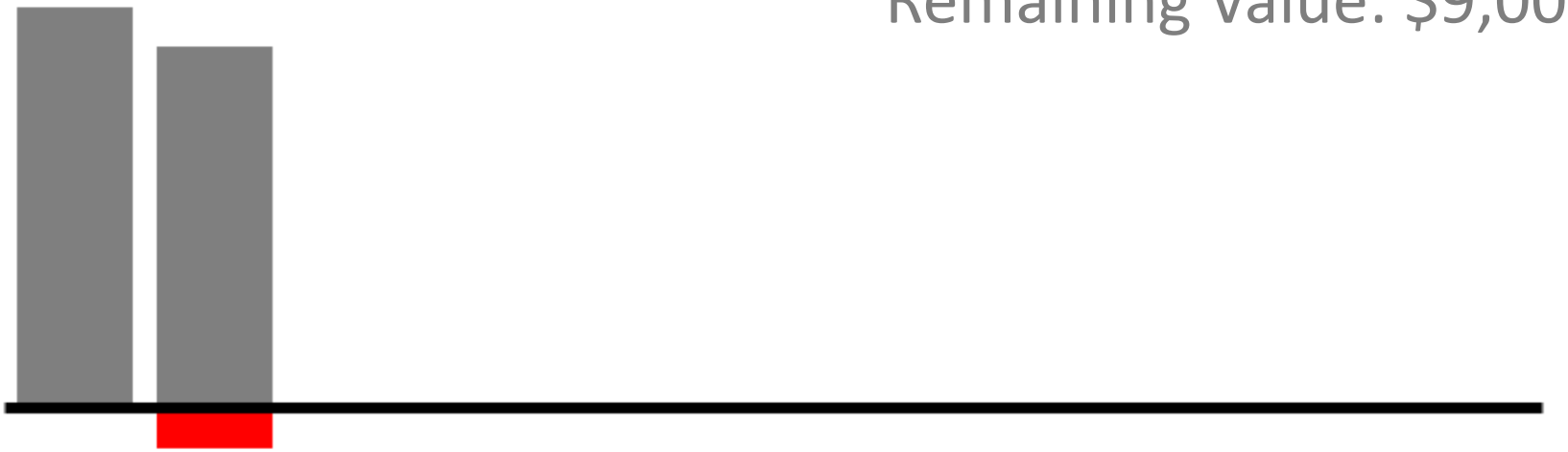
Remaining Value: $10,000



Accumulated Depreciation: $0

2017

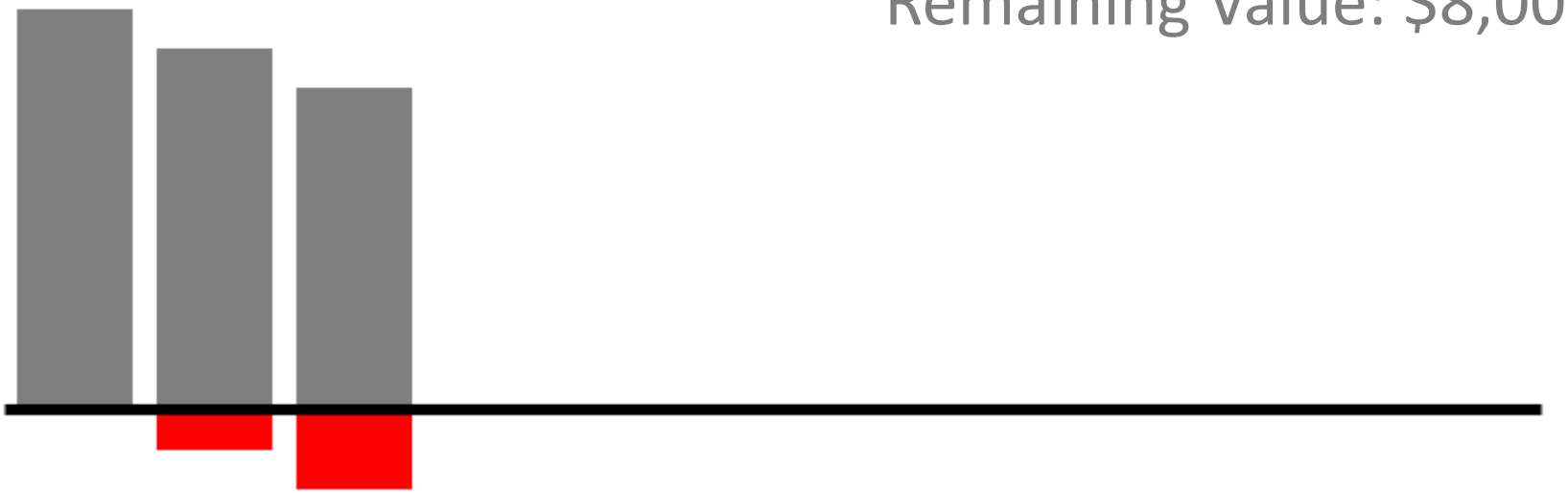
Remaining Value: $9,000



Accumulated Depreciation: $1,000

2018

Remaining Value: $8,000



Accumulated Depreciation: $2,000

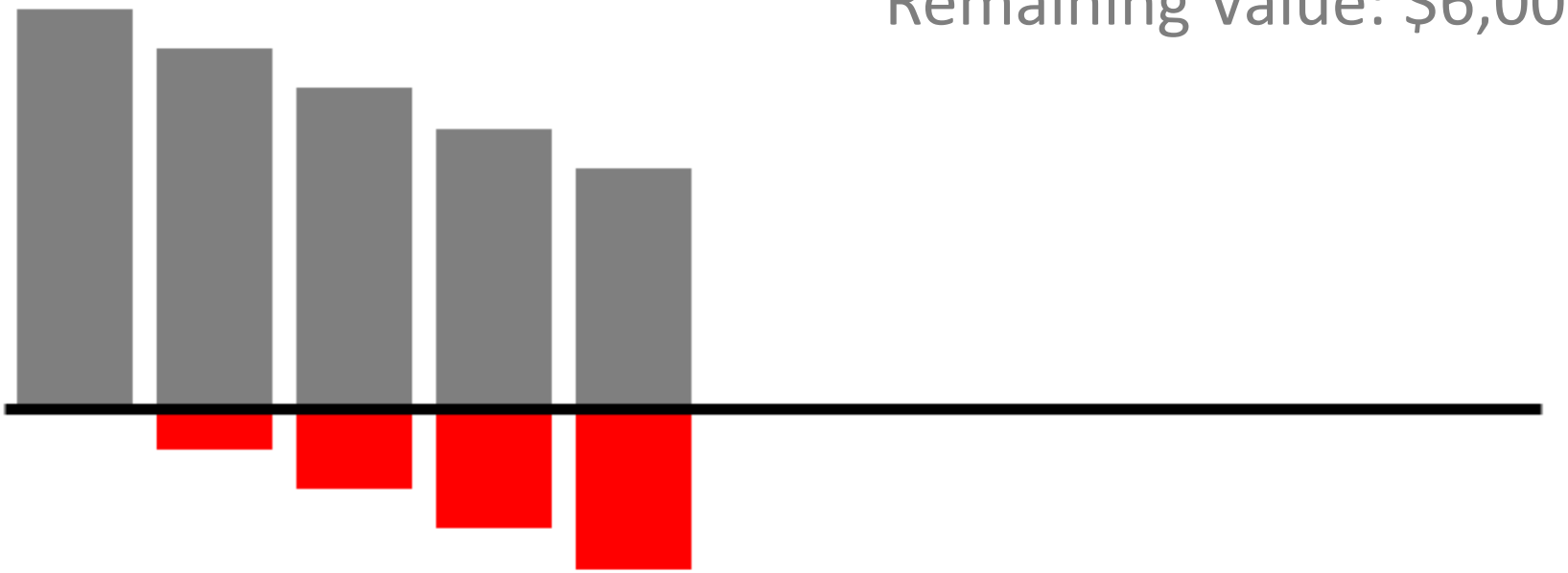
2019

Remaining Value: $7,000

Accumulated Depreciation: $3,000

2020

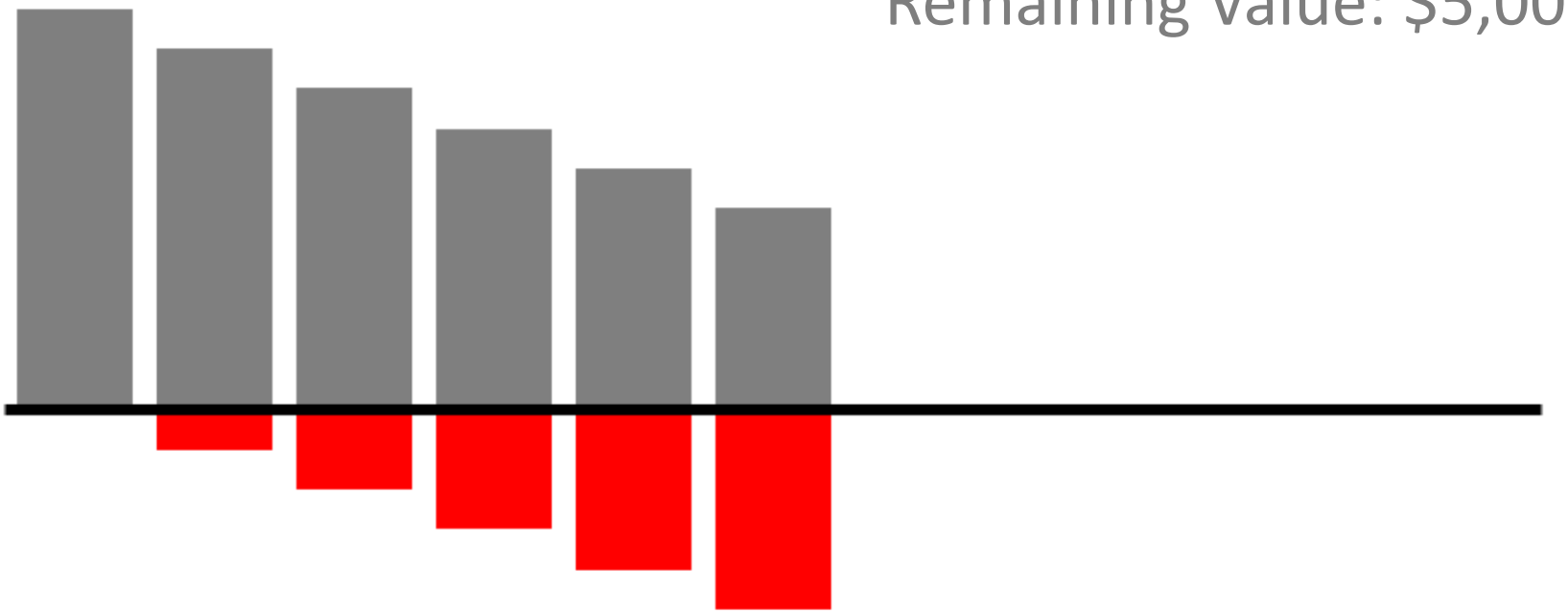
Remaining Value: $6,000



Accumulated Depreciation: $4,000

2021

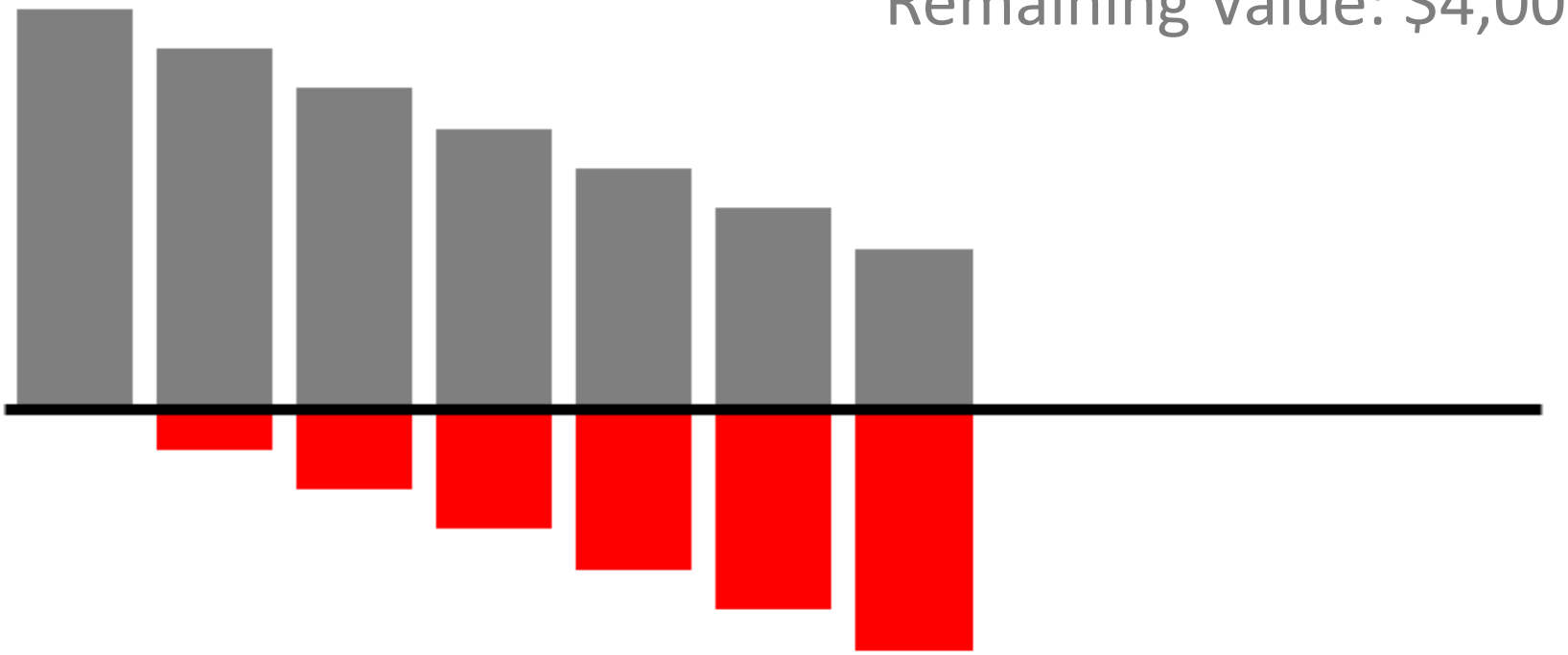
Remaining Value: $5,000



Accumulated Depreciation: $5,000

2022

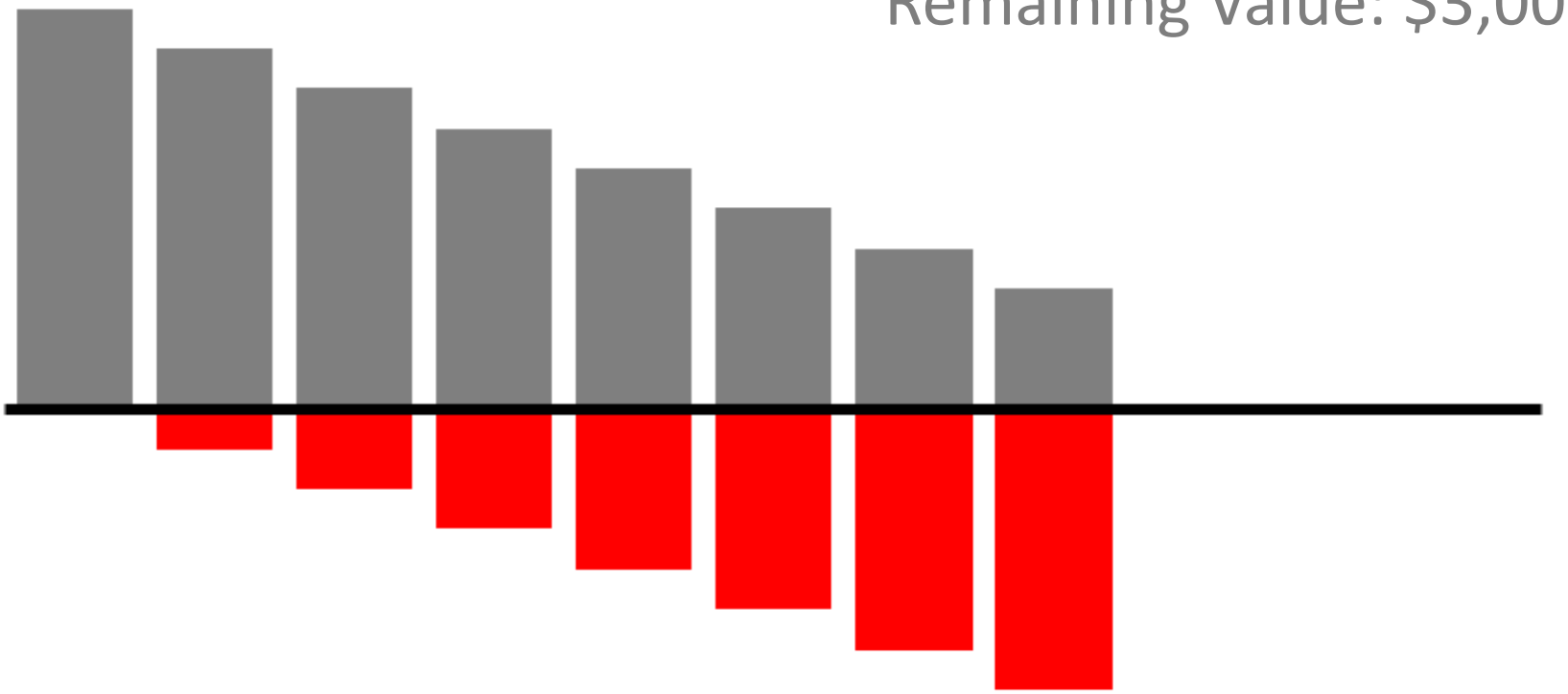
Remaining Value: $4,000



Accumulated Depreciation: $6,000

2023

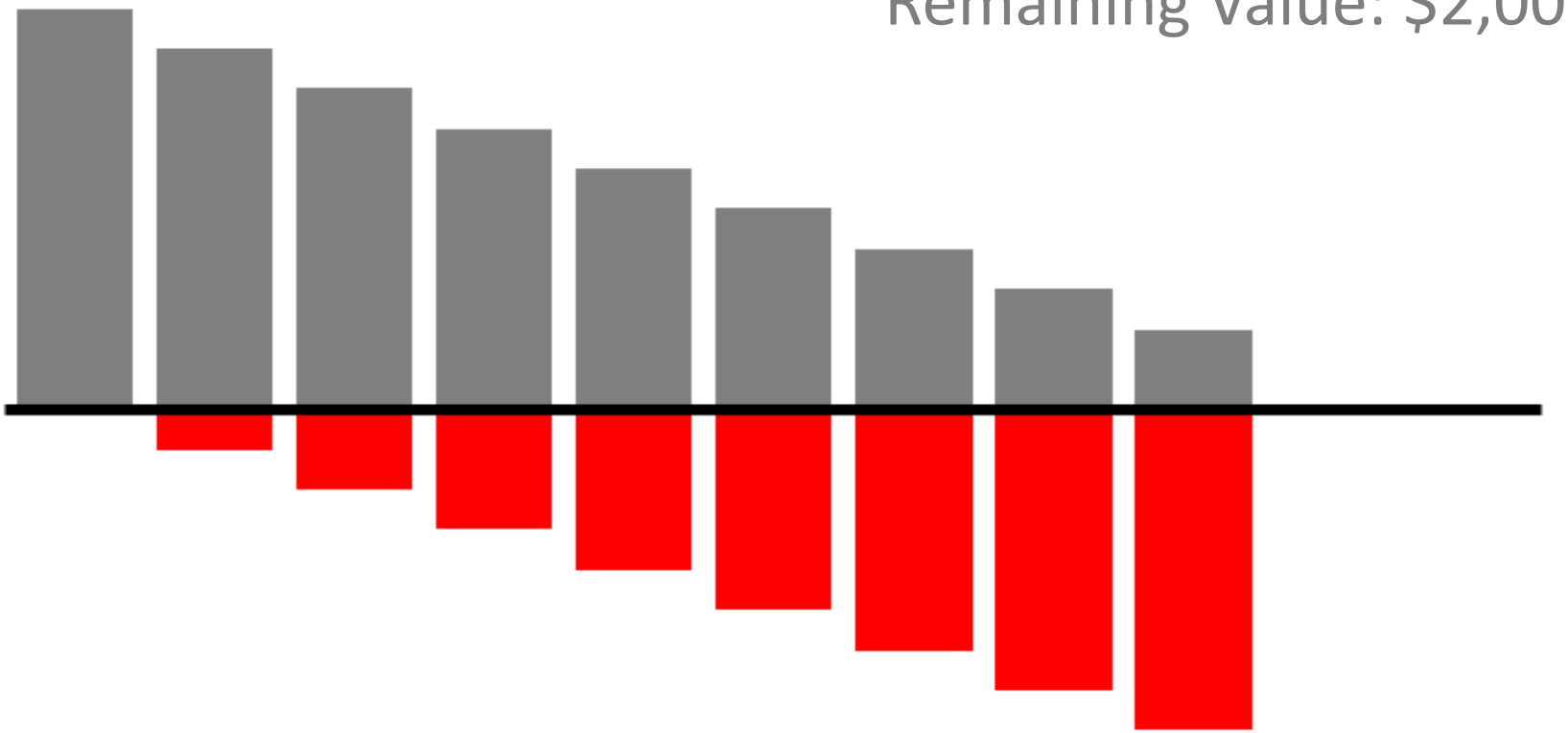
Remaining Value: $3,000



Accumulated Depreciation: $7,000

2024

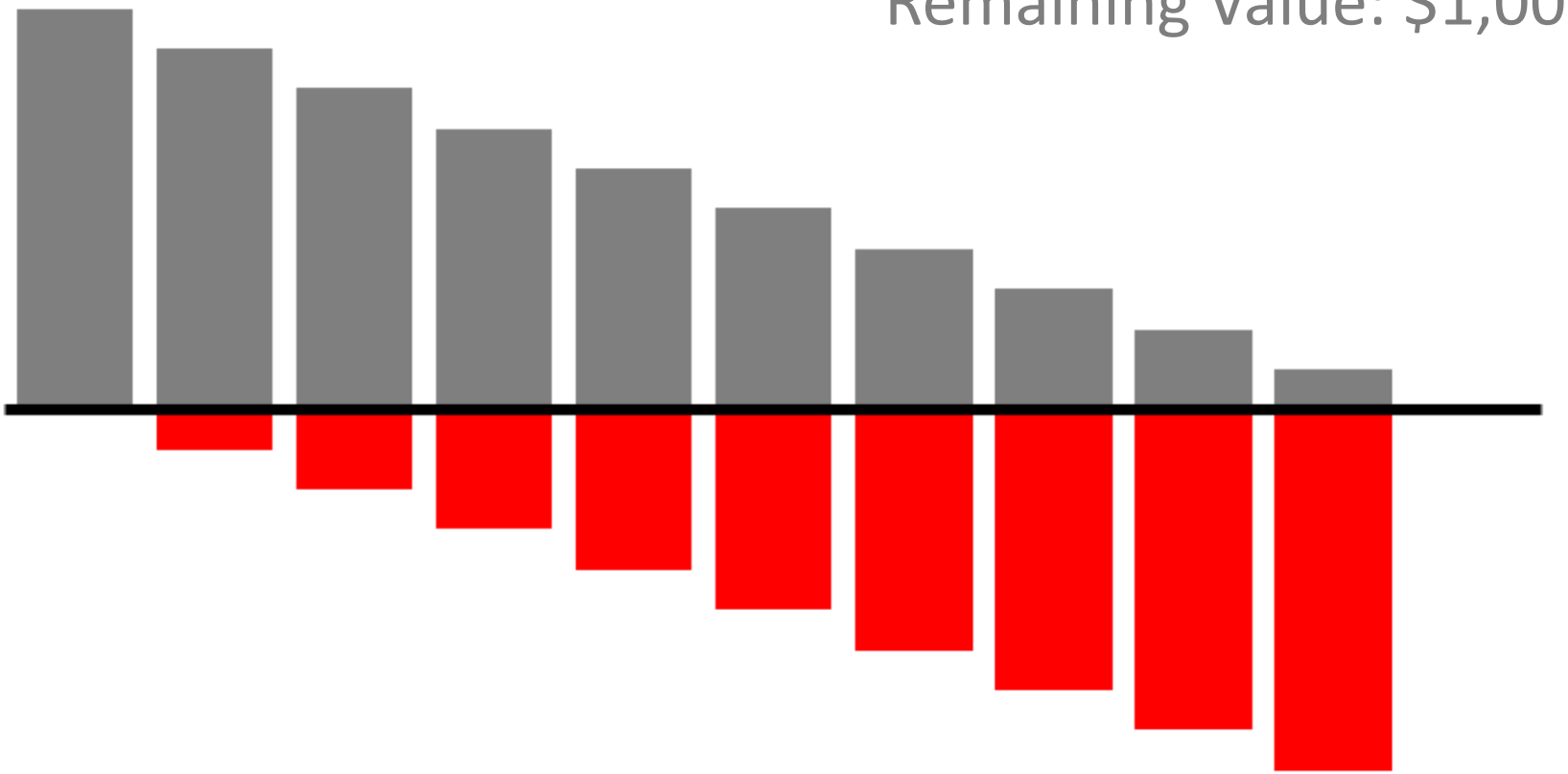
Remaining Value: $2,000



Accumulated Depreciation: $8,000

2025

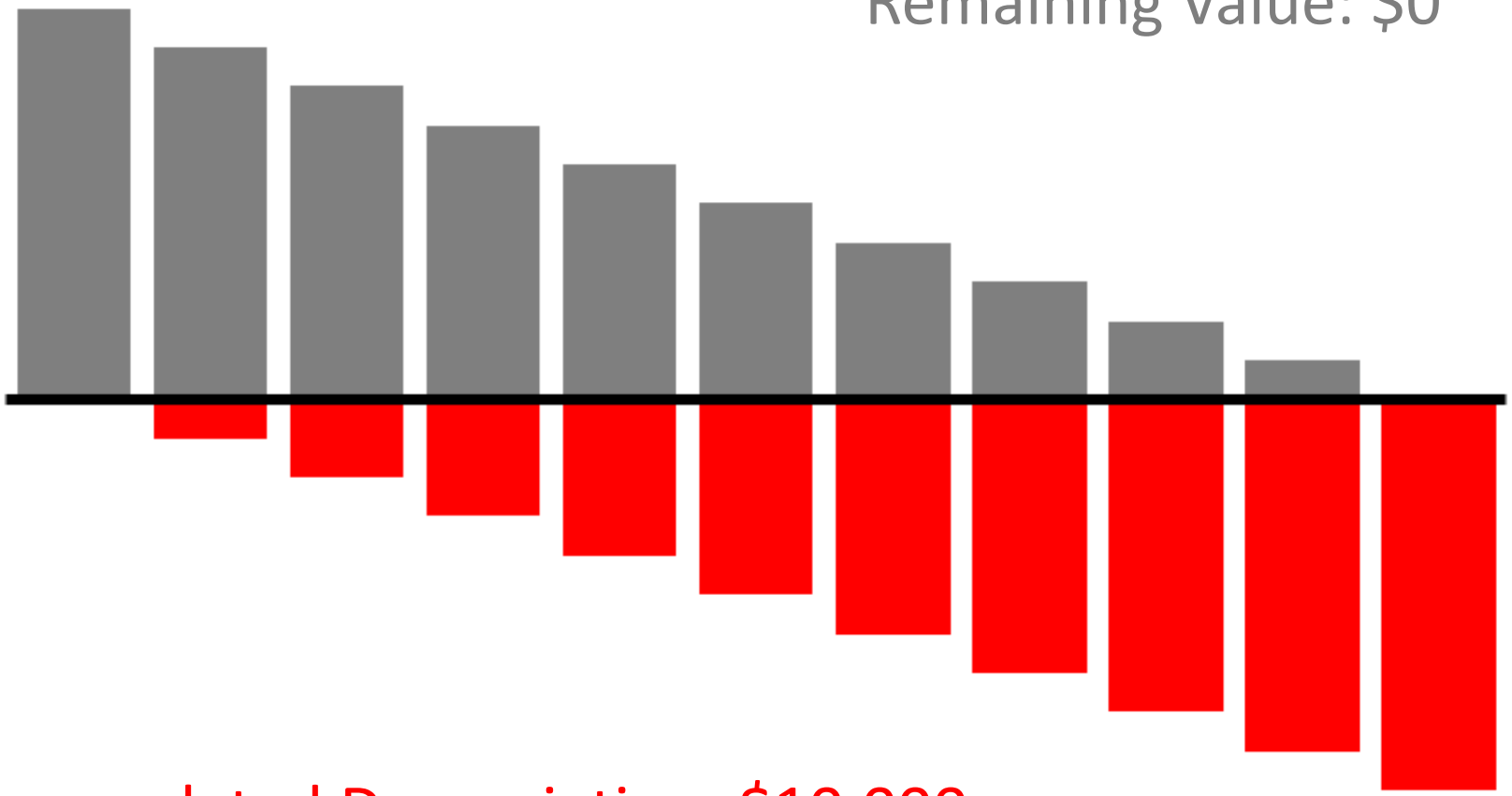
Remaining Value: $1,000



Accumulated Depreciation: $9,000

2026

Remaining Value: $0



Accumulated Depreciation: $10,000

How depreciation can be used to improve water system finance and management

Use #1:
Estimate the remaining useful life of the system

Asset Depreciation

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

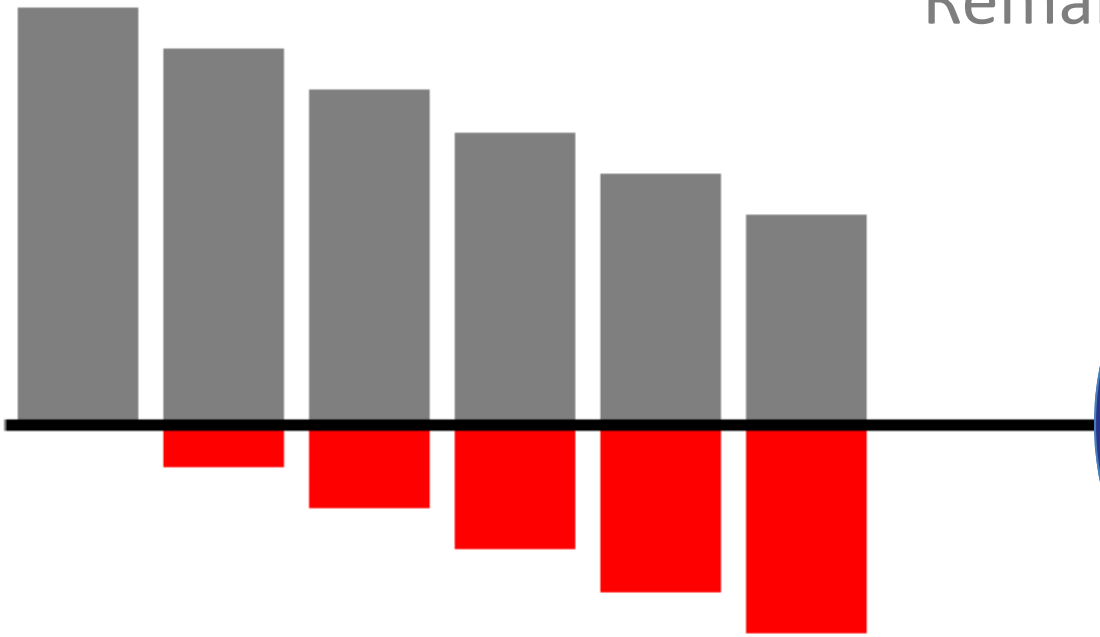
Benchmark?

Don't get close to 1.0

*Caveat – This indicator is only as good as your depreciation schedule

2021

Remaining Value: $5,000



Asset Depreciation: 50%

Accumulated Depreciation: $5,000

Use #2:
Measure financial health

Operating Ratio

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

Two ways to calculate—
One excluding depreciation, and one including depreciation

A Sample Community: **Mayberry**

Service Population:

1,508

MHI:

$29,891

Percent Poverty:

27%

MAYBERRY

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

	Enterprise Funds Water and Sewer
OPERATING REVENUES	
Charges for services	$ 444,231
Grants	0
Total operating revenues	444,231
OPERATING EXPENSES	
Personnel services	178,885
Contractural services	63,898
Other supplies and expense	126,282
Depreciation	142,463
Total operating expenses	511,448
Operating income (loss)	(67,217)
NONOPERATING REVENUES (EXPENSES)	
Interest	1,928
[illegible]	(36,128)

Operating Ratio – Mayberry

Excluding Depreciation

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

Operating Revenues ***(1)***

Operating Expenses (excluding depreciation) ***(2-3)***

Operating Ratio – Mayberry

Including Depreciation

$444,231

Operating Revenues ***(1)***

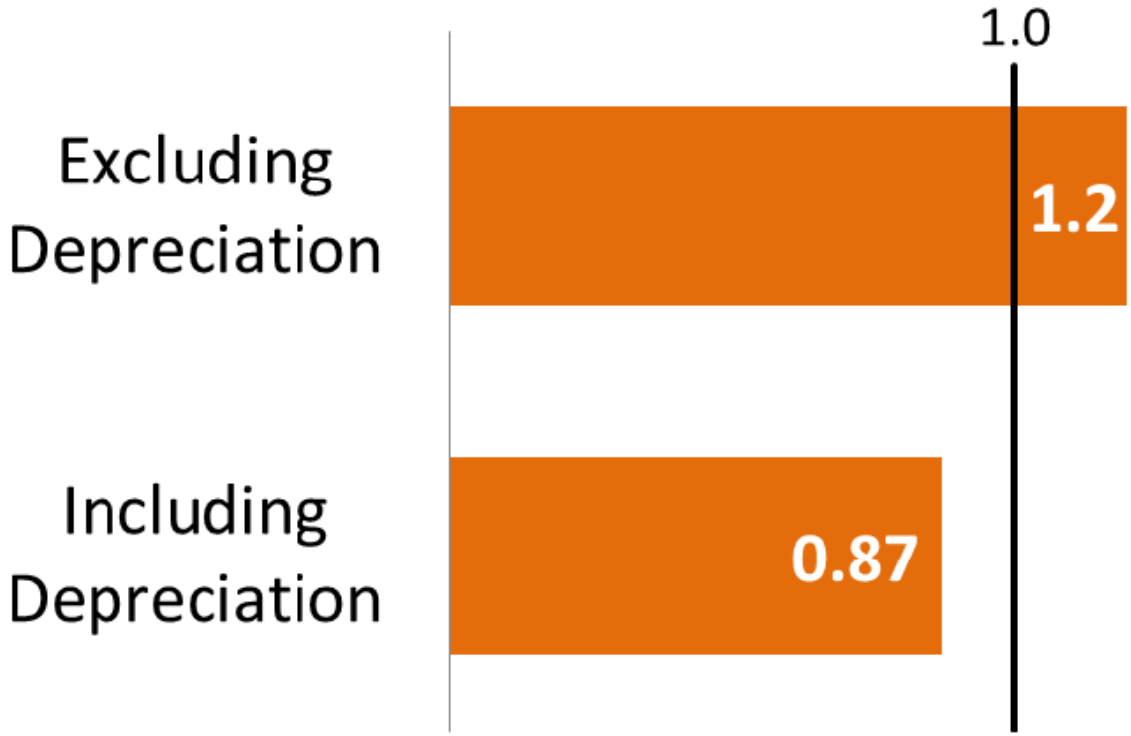
$$\frac{\$444{,}231}{\$511{,}448} = 0.87$$

$511,448

Operating Expenses (including depreciation) ***(2)***

OE $368,985
+ Dep $142,463

What does this mean for **Mayberry**?



Use #3:
A consideration in rate setting

Rank Your Rate Setting Objectives

Full cost recovery/ revenue stability

Encouraging conservation

Fostering business-friendly practices

Maintaining affordability

(keeping rates low – to whom?)

1. _____
2. _____
3. _____
4. _____

Refer to this list and focus on the highest ranked objectives when following the guidelines for selecting the appropriate rate structure design.

"Full Cost Pricing"

- Operations & maintenance expenditures
- Taxes and accounting costs
- Contingencies for emergencies
- Principal and interest on long-term debt
- Reserves for capital improvement
- Source water protection

If Regulated by a Utility Commission

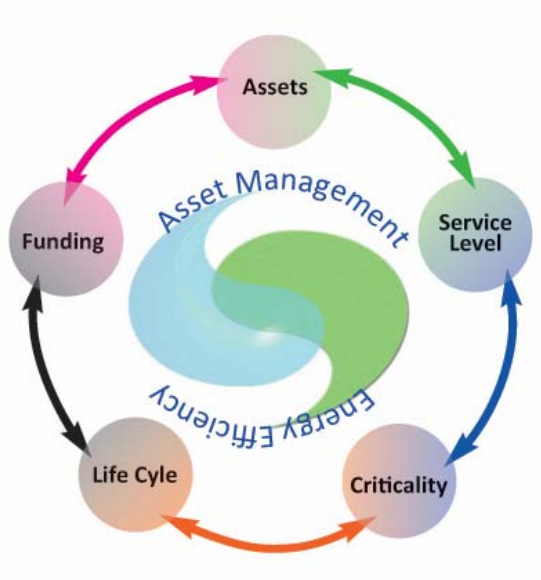
- Depreciation as an expense can be part of the “test year” that financial regulators use to approve your rates

Use #4:
Tax benefits
(for private water systems)

Depreciation is an estimate. What is the alternative?

Actual physical condition of assets, which can be measured through asset management

Five Core Components of AM



Current State of the Assets

Level of Service

Criticality

Life Cycle Costing

Long-Term Funding

Current State of the Assets

- What do I own?
- Where are the assets?
- What condition are they in?
- How much useful life is remaining?
- What is the replacement value?

A couple of questions before we end

Thank you!

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu