Smart Management for Small Water Systems

# Introduction to Asset Management

Bemidji, MN
May 12, 2016

EFCN environmental finance center network

American Water Works Association

Southwest Environmental Finance Center

This program is made possible under a cooperative agreement with EPA.

## 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.

### What We Offer

Individualized technical assistance, workshops, small group support, webinars, eLearning, online tools & resources, blogs

# The EFCN Project Team

- Environmental Finance Center at The University of North Carolina at Chapel Hill
- EFC West
- Environmental Finance Center at Wichita State University
- New England Environmental Finance Center at University of Southern Maine
- Southwest Environmental Finance Center
- Syracuse University Environmental Finance Center

## 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

# Small Systems Blog

Learn more about water finance and management through our Small Systems Blog! Blog posts feature lessons learned from our training and technical assistance, descriptions of available tools, and small systems “success stories.”

## Common Blog Topic Areas

- Asset Management
- Energy Management
- Enhancing Regulatory Compliance
- Fiscal Planning & Rate Setting
- Funding Coordination
- Managerial & Financial Leadership
- Water Loss Reduction
- Water System Collaboration


*efcnetwork.org/small_systems_blog/*

# INTRODUCTION TO ASSET MANAGEMENT

**PRESENTED BY: SOUTHWEST EFC**
**HEATHER HIMMELBERGER**

Asset management is first and foremost a process to help you run your systems in a better way

Asset Management is not the part that's the *burden*

**Running a water system is the *burden***

**Asset Management is intended to reduce your *burden***

# What Asset Management Is (and What It Isn’t)

Asset Management is a Journey not a Destination

Asset Management is a Thought Process not a Computer Program

The more you do the more benefit you receive, BUT….Doing even a little bit will improve the operation and management of your system

It’s not a choice between doing asset management or not; Regardless you are making decisions regarding your assets every single day!!!

When done right, asset management really works to save money, time, effort….
It works even if it isn’t done “right” as long as the thought process is followed.

AM starts with what you already know and builds from there

It uses your entire staff, however many that may be

If you keep an open mind, you will walk away after this course with some ideas on how to change the way you currently do business to help yourself, your management, and your customers

# Your Baseline

## AM IQ

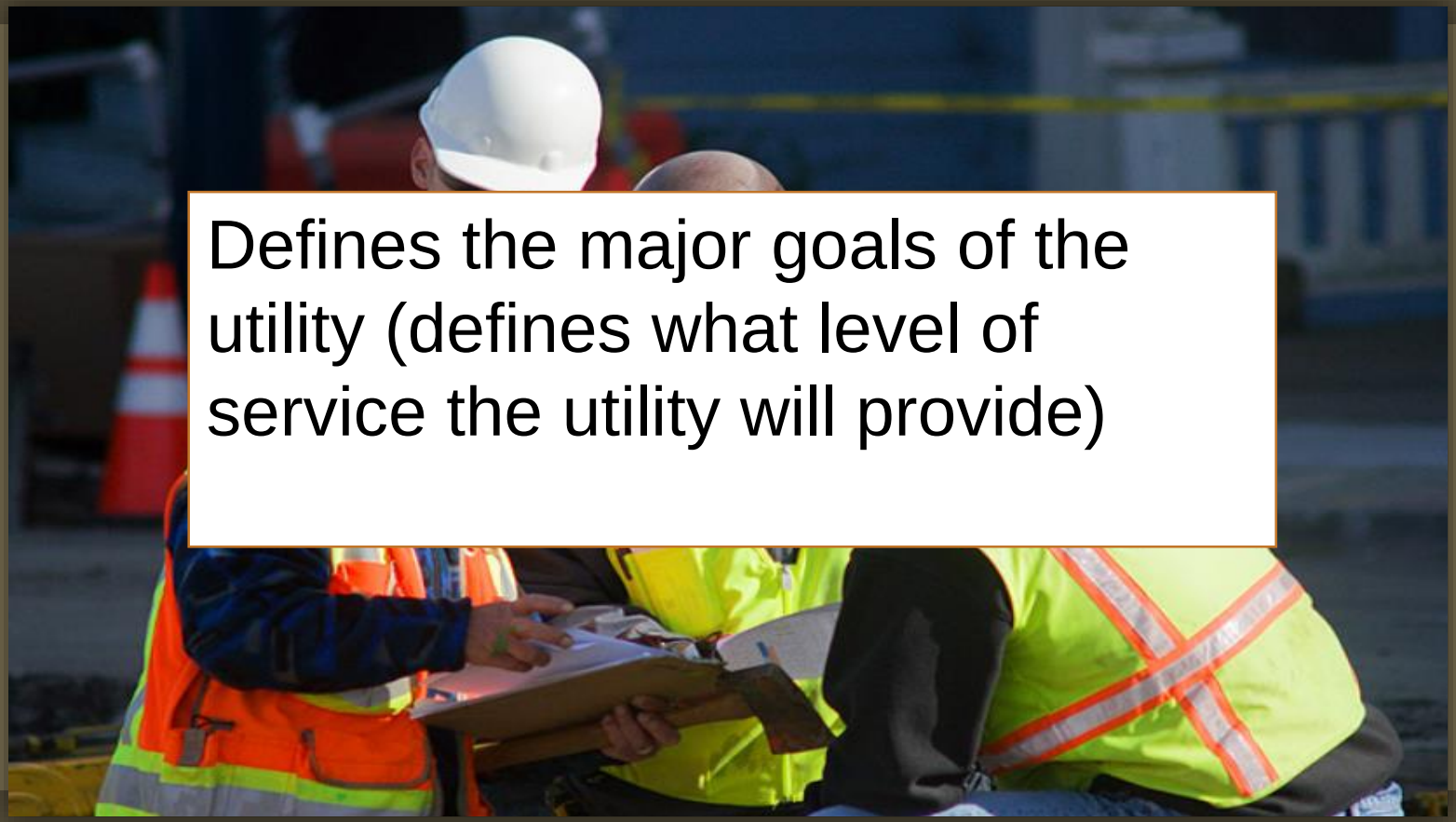
https://southwestefc.unm.edu/AssetManagementIQ

# LEVEL OF SERVICE

# WATER UTILITIES ARE FIRST AND FOREMOST CUSTOMER SERVICE BUSINESSES

# SO IT'S ALL ABOUT THE CUSTOMERS

# CUSTOMER SERVICE IN ASSET MANAGEMENT TERMS




## CALLED LEVEL OF SERVICE

# LEVEL OF SERVICE IS A CHANCE TO

What's really important

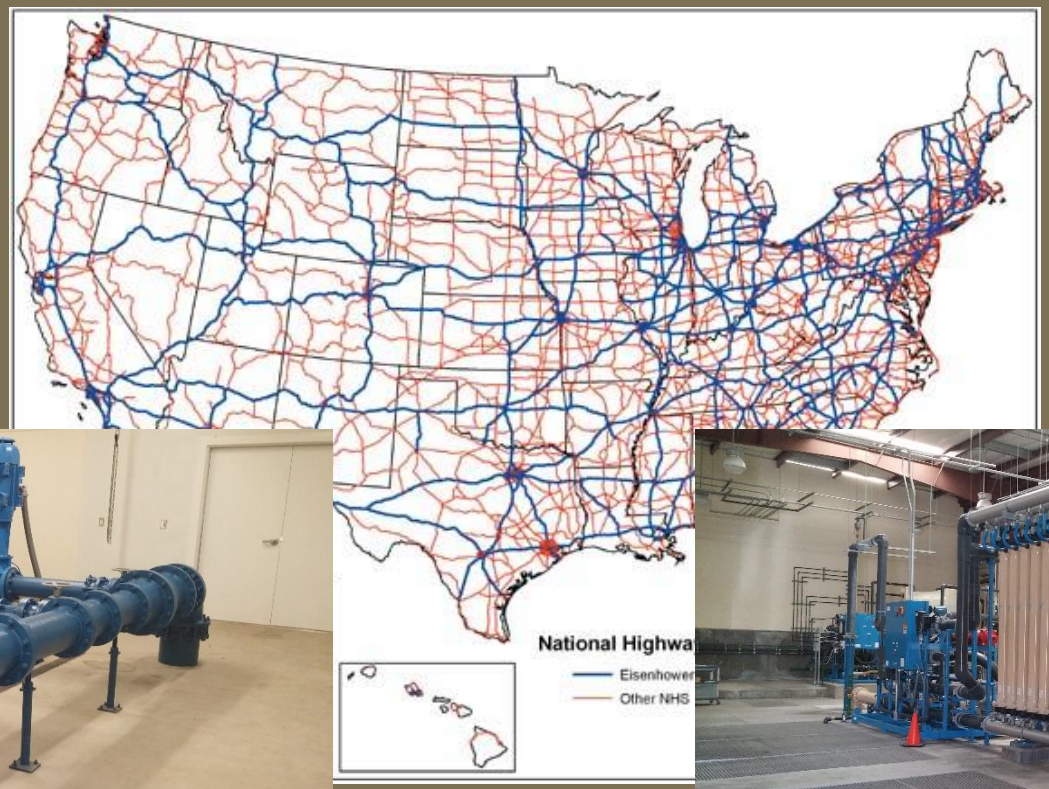
# HAVE A CONVERSATION WITH CUSTOMERS

# UNDERSTANDING OF COSTS

Service and cost are related

higher levels of service = higher costs
lower levels of service = lower costs

# Level of Service




# Your Road Map

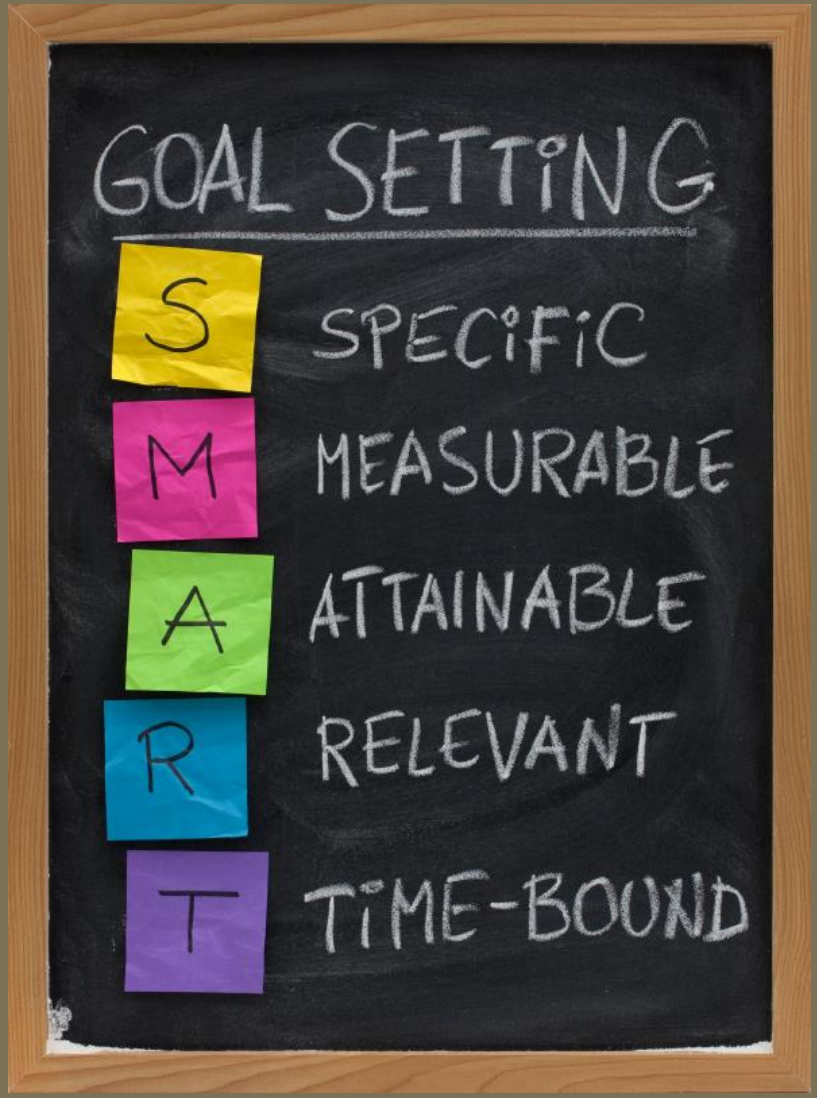
# Goals

1.

2.

3.

# SETTING SMART GOALS



# SPECIFIC


**NON-SPECIFIC**

**"PROVIDE GOOD WATER"**

**"HAVE GOOD PRESSURE"**

**SPECIFIC**

**"MEET SDWA PRIMARY DRINKING WATER STANDARDS 100 % OF THE TIME"**

**"PROVIDE MINIMUM WATER PRESSURE OF 50 PSI THROUGHOUT THE SYSTEM 95% OF THE TIME"**

# MEASURABLE


**NON-MEASURABLE**

- "HAVE EXCEPTIONAL CUSTOMER SERVICE"
- "PROVIDE RELIABLE WATER SERVICE"

**MEASURABLE**

- "RESPOND TO WATER QUALITY COMPLAINTS BY NEXT BUSINESS DAY 95% OF THE TIME"
- "PROVIDE WATER CONTINUOULY TO ALL CUSTOMERS 95% OF THE TIME"

# ATTAINABLE

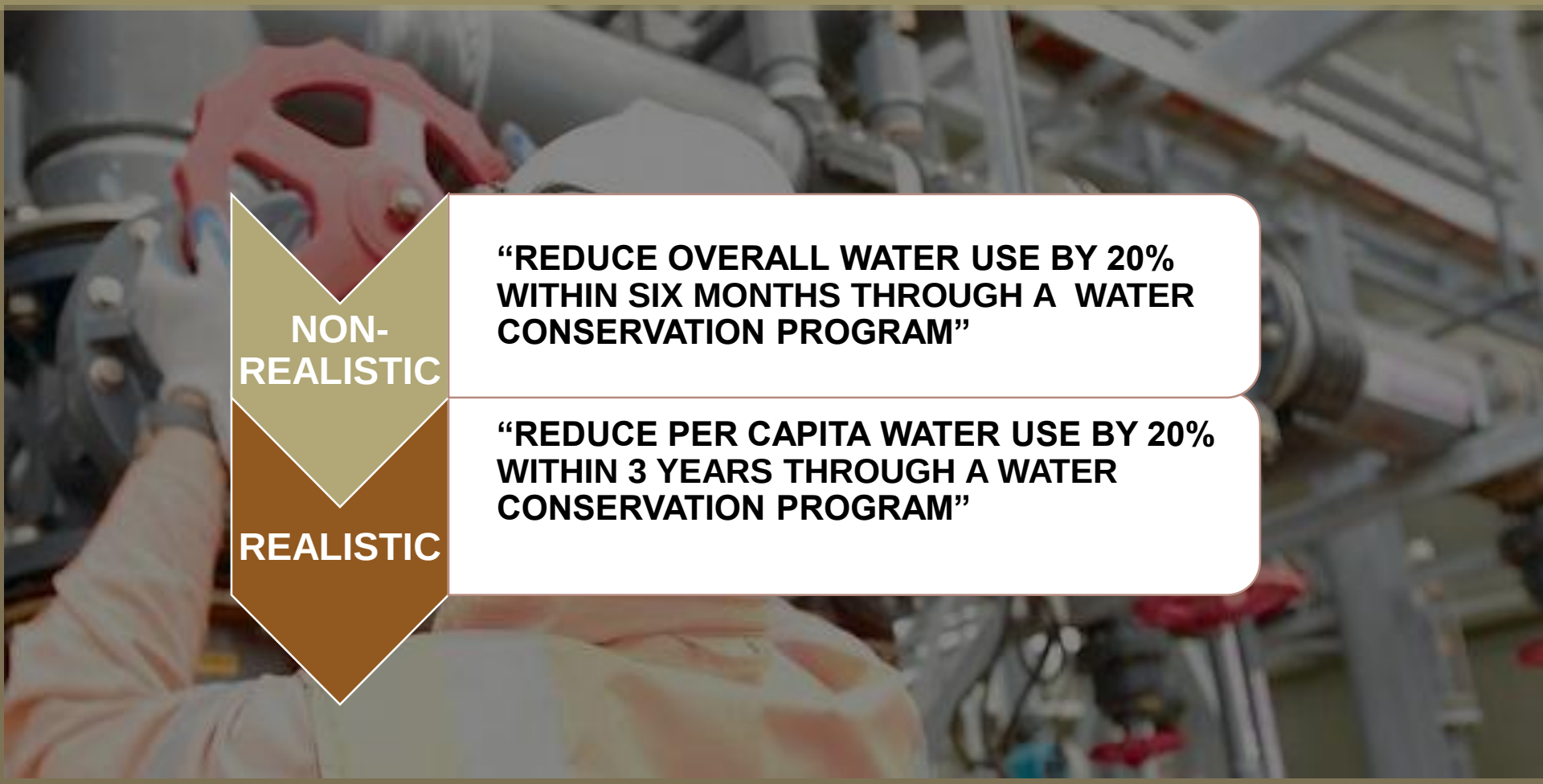
**NON-ATTAINABLE**

**PROVIDE RESPONSE TO ALL CUSTOMER COMPLAINTS WITHIN 15 MINUTES AT ALL TIMES (IS NOT ACHIEVABLE IF YOU HAVE NO STAFF AVAILABLE TO RESPOND TO COMPLAINTS)**

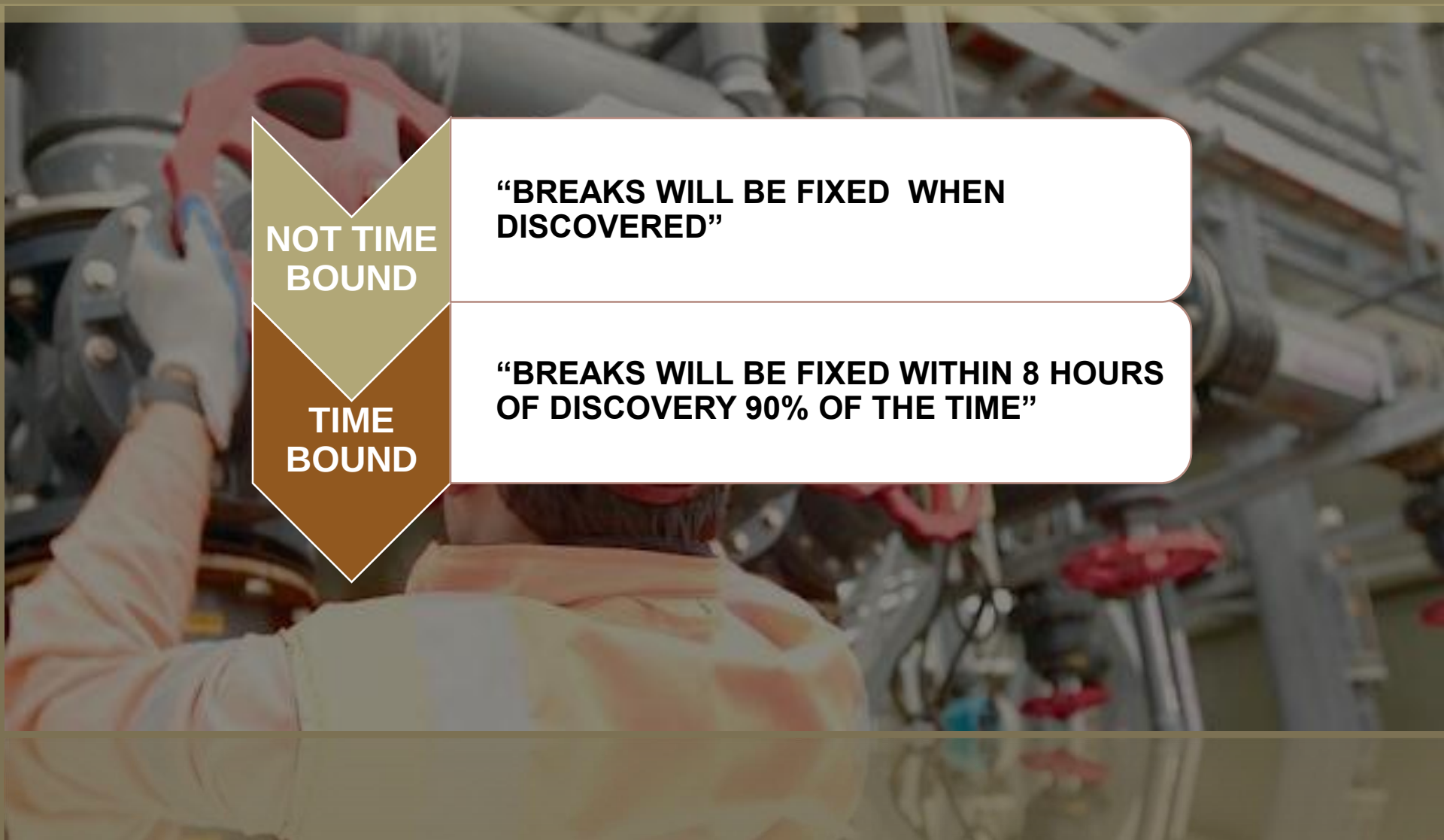
**ATTAINABLE**

**PROVIDE CUSTOMER SERVICE RESPONSE WITHIN 8 HOURS DURING NORMAL BUSINESS OPERATION (M – F, 8 – 5)**

# REALISTIC


NON-REALISTIC
“REDUCE OVERALL WATER USE BY 20% WITHIN SIX MONTHS THROUGH A WATER CONSERVATION PROGRAM”
REALISTIC
“REDUCE PER CAPITA WATER USE BY 20% WITHIN 3 YEARS THROUGH A WATER CONSERVATION PROGRAM”

# TIME BOUND



| | |
|---|---|
| NOT TIME BOUND | “BREAKS WILL BE FIXED WHEN DISCOVERED” |
| TIME BOUND | “BREAKS WILL BE FIXED WITHIN 8 HOURS OF DISCOVERY 90% OF THE TIME” |

# ONE MORE ACRONYM…..KISS


Keep it Simple and Sustainable

# CONSIDER HOW GOALS CHANGE YOUR OPERATION AND MANAGEMENT



# GOAL ARE NOT SET IN STONE

GOALS CAN BE CHANGED

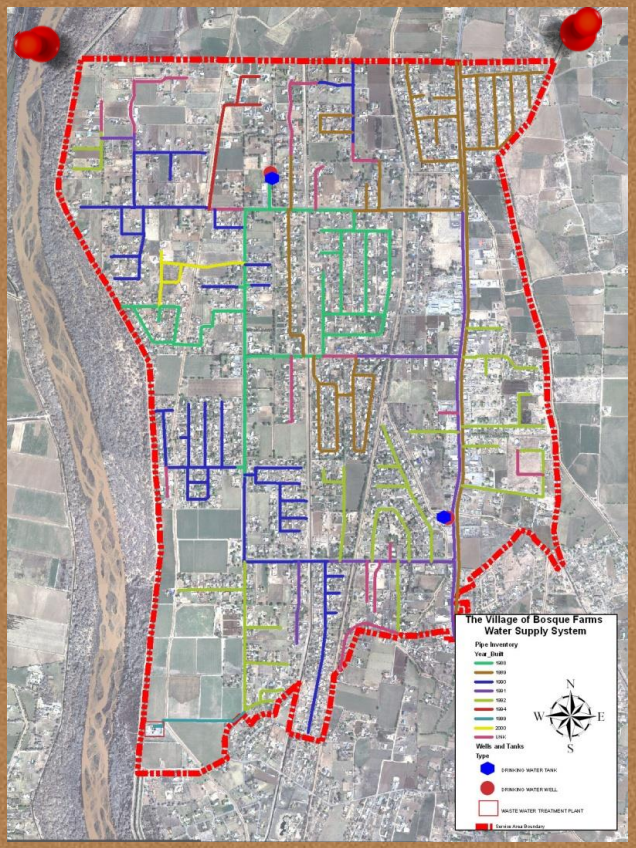

GOALS CAN BE ADDED OR REMOVED

OR ADJUSTED OVER TIME

# CURRENT STATE OF THE ASSETS


# WHAT ASSETS DO YOU OWN?

# WHERE ARE YOUR ASSETS?




# USING GOOGLE MAPS

Water System

Tank, Pump House, Chlorinator, Well #1

Well #2

Fort Trail Water Pipe

Wannas Drive Water Line

Captain Brendt Water Line

Leonard Calvert Water Line

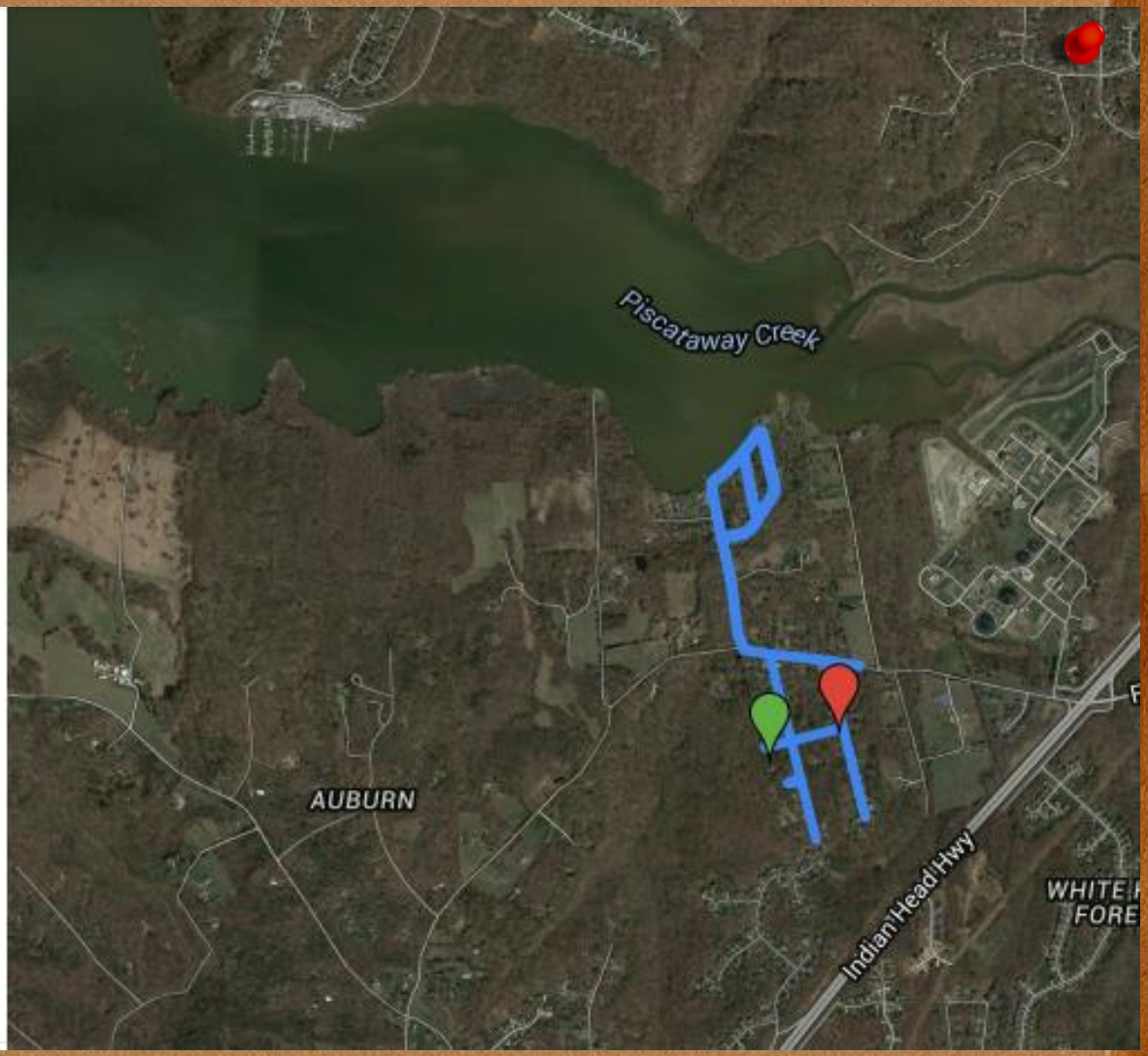
Father White Water Line

Captain John Smith Water Line

Farmington Creek Water Line

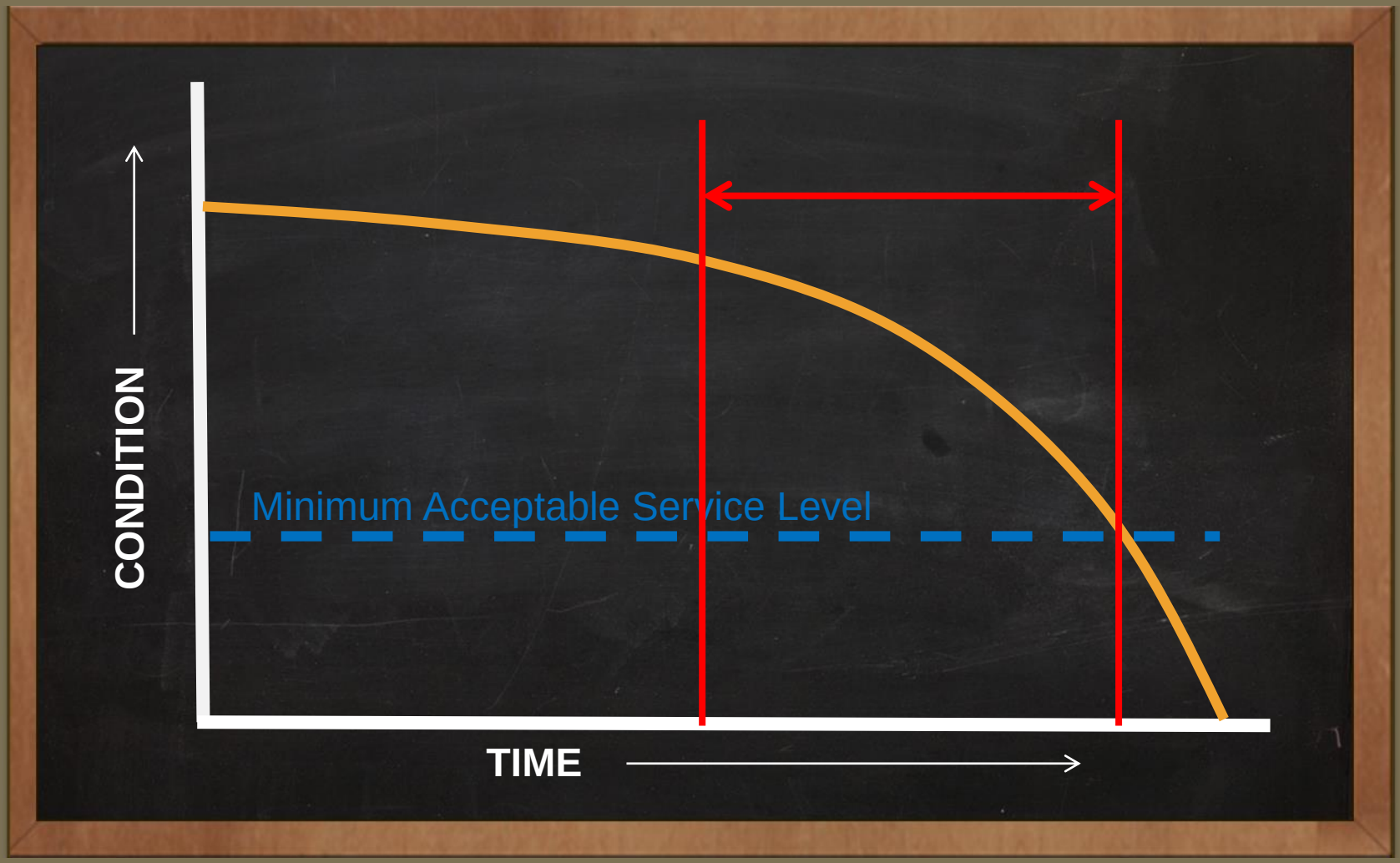
Calverton Circle Water Line

Farmington Rd. South Side Water Line



# WHAT CONDITION ARE THEY IN?

# WHAT IS THEIR REMAINING USEFUL LIFE?



# WHAT IS THEIR REPLACEMENT VALUE?


**Work Order Entry - Work Order Activity Rules**

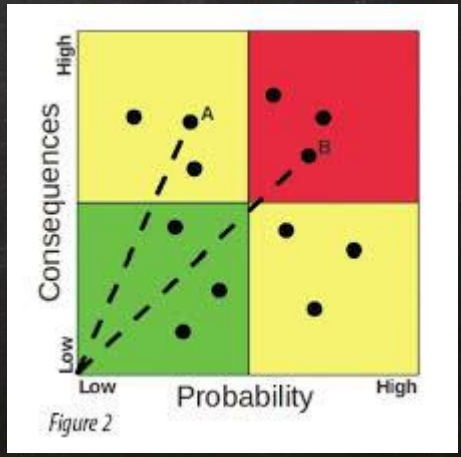
Row Tools

Order Type: WM — *Maintenance Work Order*

WO Type: 1 — *Maintenance Order*

Records 1 - 10

| WO Status | WO Status Description | Next Status | Allowed Status 1 | Allowed Status 2 | Allowed Status 3 | Allowed Status 4 | Allowed Status 5 |
|---|---|---|---|---|---|---|---|
| M | Maintenance Work Request | M* | MA | MR | | | |
| M* | MWO Waiting Manager Approval | MA | ME | MG | MI | MR | |
| MA | MWO Approved | MB | MD | ME | MI | MM | |
| MB | MWO Material Issued | MG | MH | MJ | MM | | |
| MC | W/O In Planning | ME | MF | MG | MI | MJ | MM |
| MD | W/O Plant Shutdown | ME | MF | MG | MI | MJ | MM |
| ME | W/O Waiting for Parts | MF | MG | MH | MJ | MM | |
| MF | W/O Parts Staged and Ready | MG | MH | MJ | | | |
| MG | W/O Ready to Schedule | MH | MJ | | | | |
| MH | W/O Issued & Released | MJ | | | | | |




# WHAT ASSETS DO YOU WANT TO TRACK?

# GIVE ASSETS ID NUMBERS


Systems Maps

Interviews

System Records

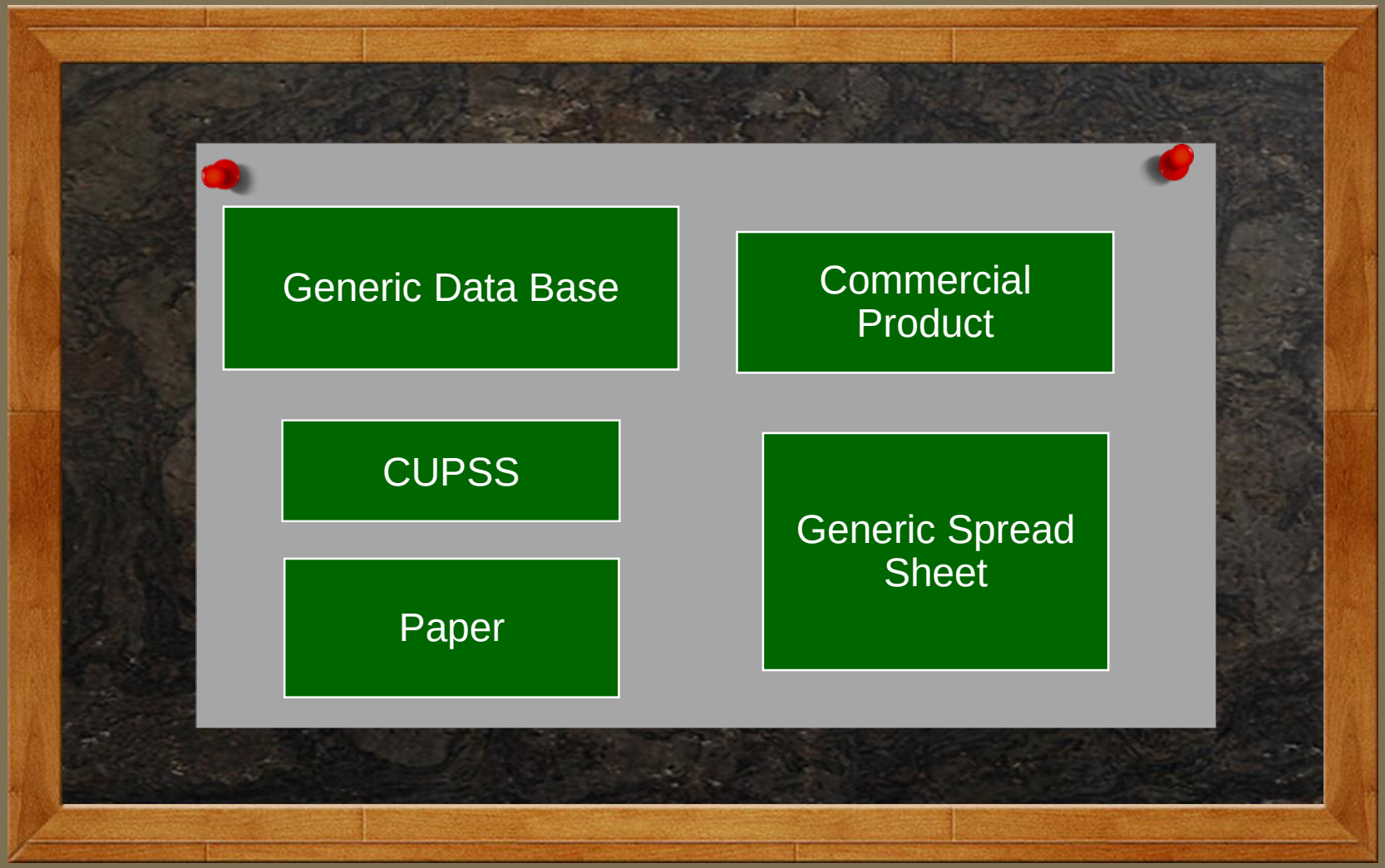
Existing inventories

Numbering Systems

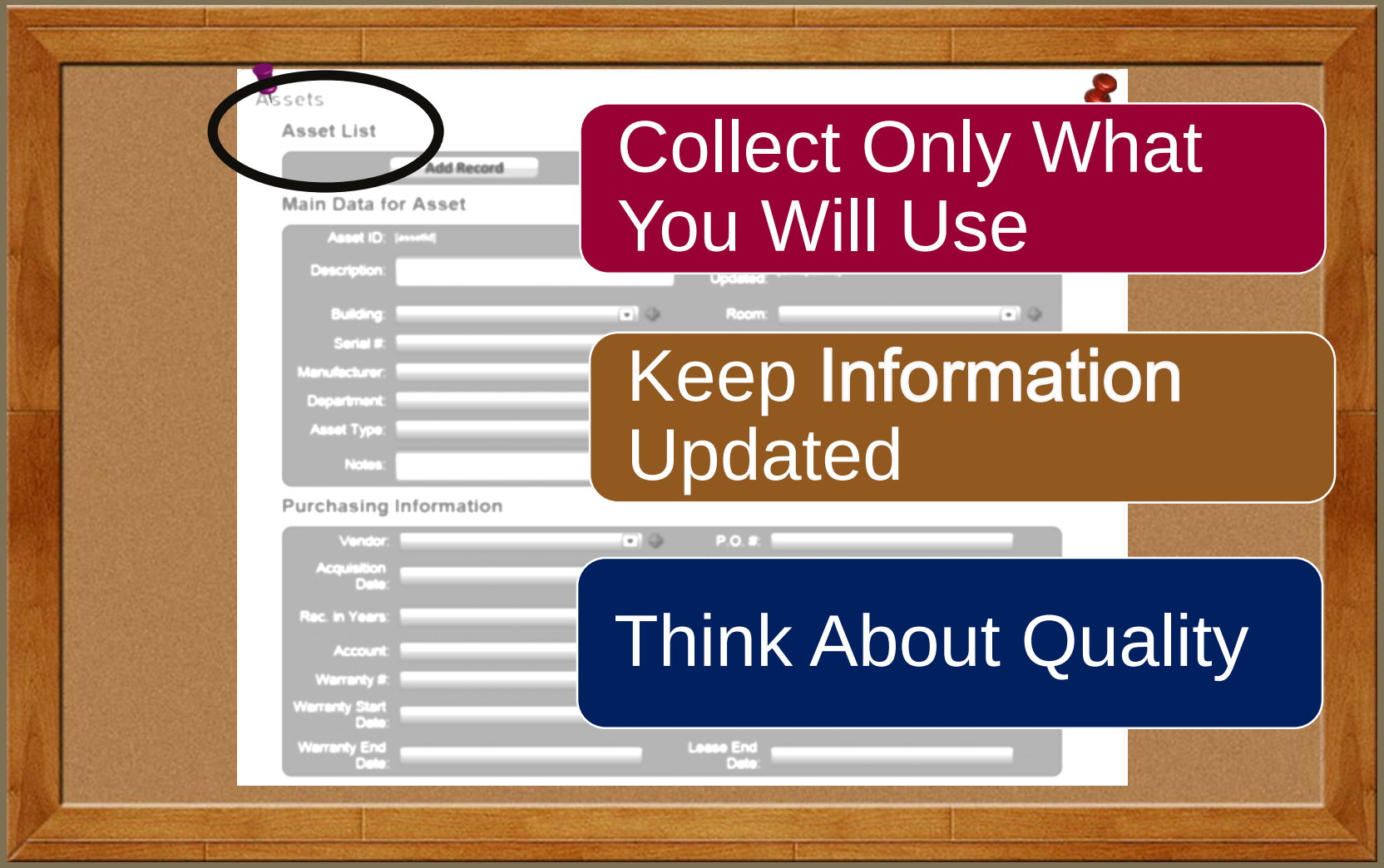
Photographs

# START WITH THE DATA YOU HAVE

# LOTS OF WAYS TO STORE DATA



# COLLECTING AND IDENTIFYING YOUR ASSETS

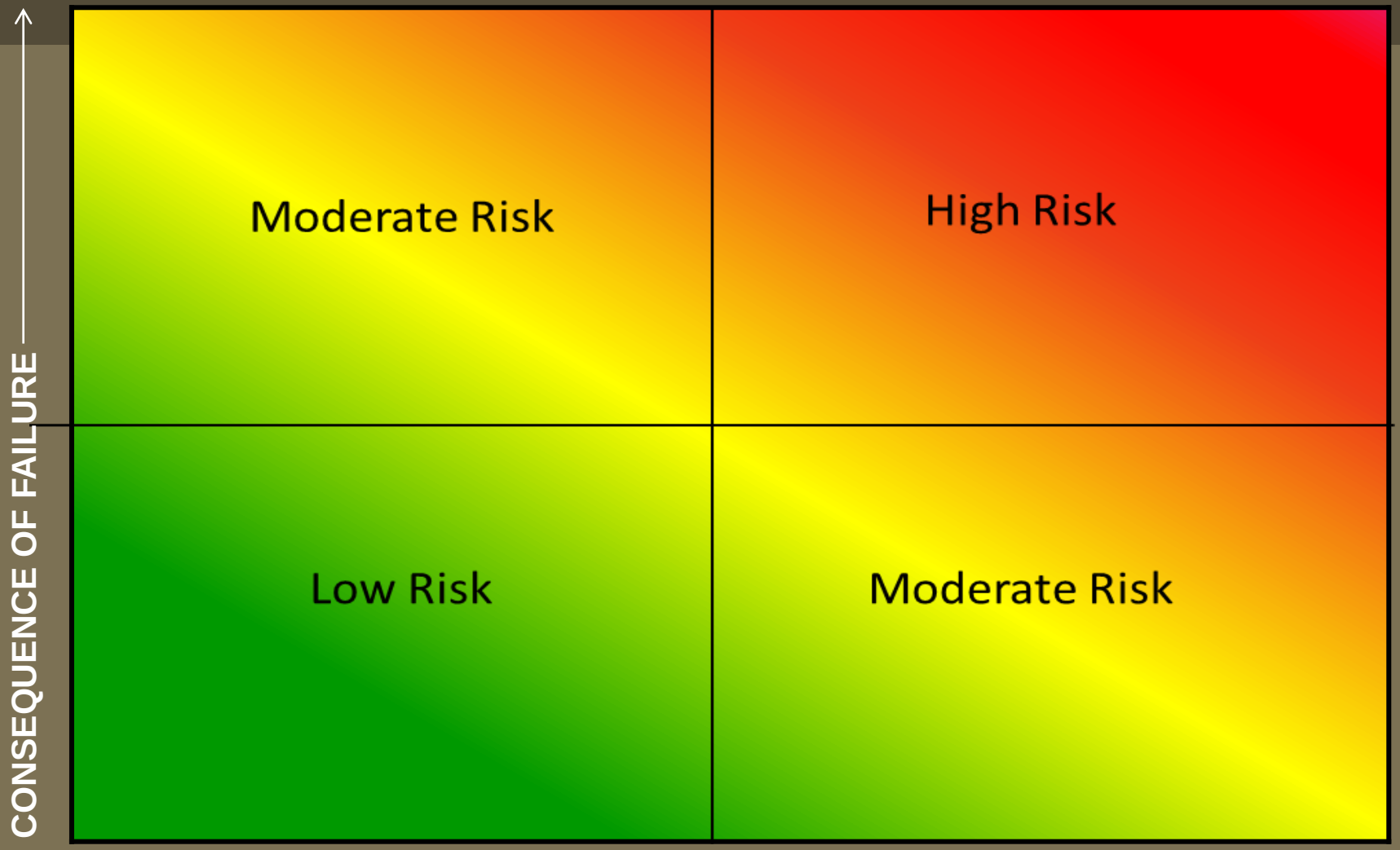


# CRITICALITY

What is the likelihood that an asset will fail?

What is the consequence if the asset does fail?

# ASSET RISK


Moderate Risk
High Risk
Low Risk
Moderate Risk
CONSEQUENCE OF FAILURE
PROBABILITY OF FAILURE

# FAILURE MODES

MORTALITY

LEVEL OF SERVICE

CAPACITY

FINANCIAL INEFFICIENCY

# FAILURE MODES

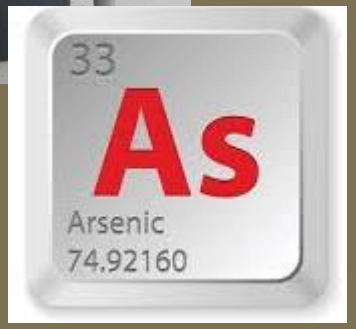
MORTALITY

# FAILURE MODES

LEVEL OF SERVICE

HAVE 4’’

NEED 6’’



# FAILURE MODES

CAPACITY

# FAILURE MODES

## FINANCIAL INEFFICIENCY

More to fix than to replace

# ASESSING CONSEQUENCES?


**CONSIDER THE TRIPLE BOTTOM LINE**

# CALCULATING CRITICALITY

POF = PROBABILITY OF FAILURE

COF= CONSEQUENCE OF FAILURE

Criticality = POF X COF

# WAYS TO REDUCE RISK

| | | |
|---|---|---|
| Routine & Preventative Maintenance | Redundancy | Spare Parts |
| Specialized Training | Replace Assets Early | Monitoring |

# CALCULATING CRITICALITY INCLUDING REDUNDANCY

POF = PROBABILITY OF FAILURE

COF= COST OF FAILURE

Redundancy Factor = RF

Criticality = POF X COF X RF

# Factors Affecting POF and COF

Risk - Hydrants

| Probability of Failure | Consequence of Failure |
|---|---|
| Age | Water damage to nearby structures |
| Condition - rusting, corrosion, leaking seal? | Inability to properly flush system - health concerns |
| Frequency of Use - is it opened annually as part of a flushing or testing program? | Inability to fight a fire - loss of property, loss of life |
| Routine maintenance completed? | Level of Service Failures |
| Pipe size connected to - less than 6 inch may cavitate | |
| Tools needed to open readily available to fire department and water department? | |

# New Tool Available

"Reference Guide For Asset Management Inventory and Risk Analysis"

# ASSESSING CRITICALITY: A SIMPLE EXAMPLE

# FACTORS TO CONSIDER FOR

- Age of Well
- Condition of Well
- Clogging of Well
- Aesthetic Water Concerns
- Depth of Well

# PROBABILITY OF FAILURE

# Scores for PoF

| Well Name | POF Factor |
|---|---|
| Westside Well | 4 |
| Eastside Well | 2 |
| Northside Well | 4 |
| Southside Well | 1 |
| Central Well | 4 |

# FACTORS TO CONSIDER FOR

Cost of Repair

Number of Customers Served

Number of Critical Customers

Time of Repair

Redundancy

# CONSEQUENCE OF FAILURE

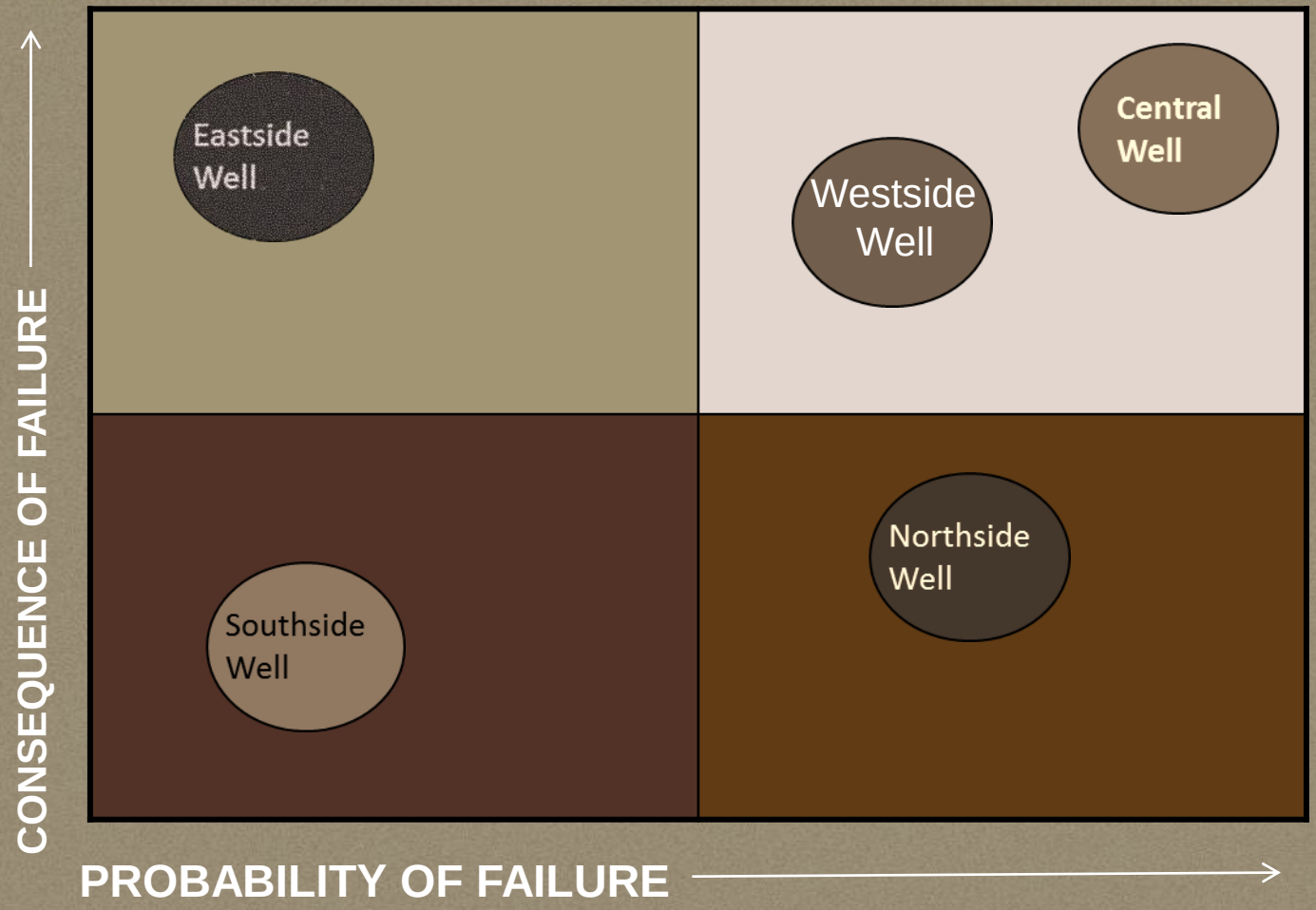
# Scores for CoF

| Well Name | COF Factor |
|---|---|
| Westside Well | 4 |
| Eastside Well | 4 |
| Northside Well | 3 |
| Southside Well | 2 |
| Central Well | 5 |

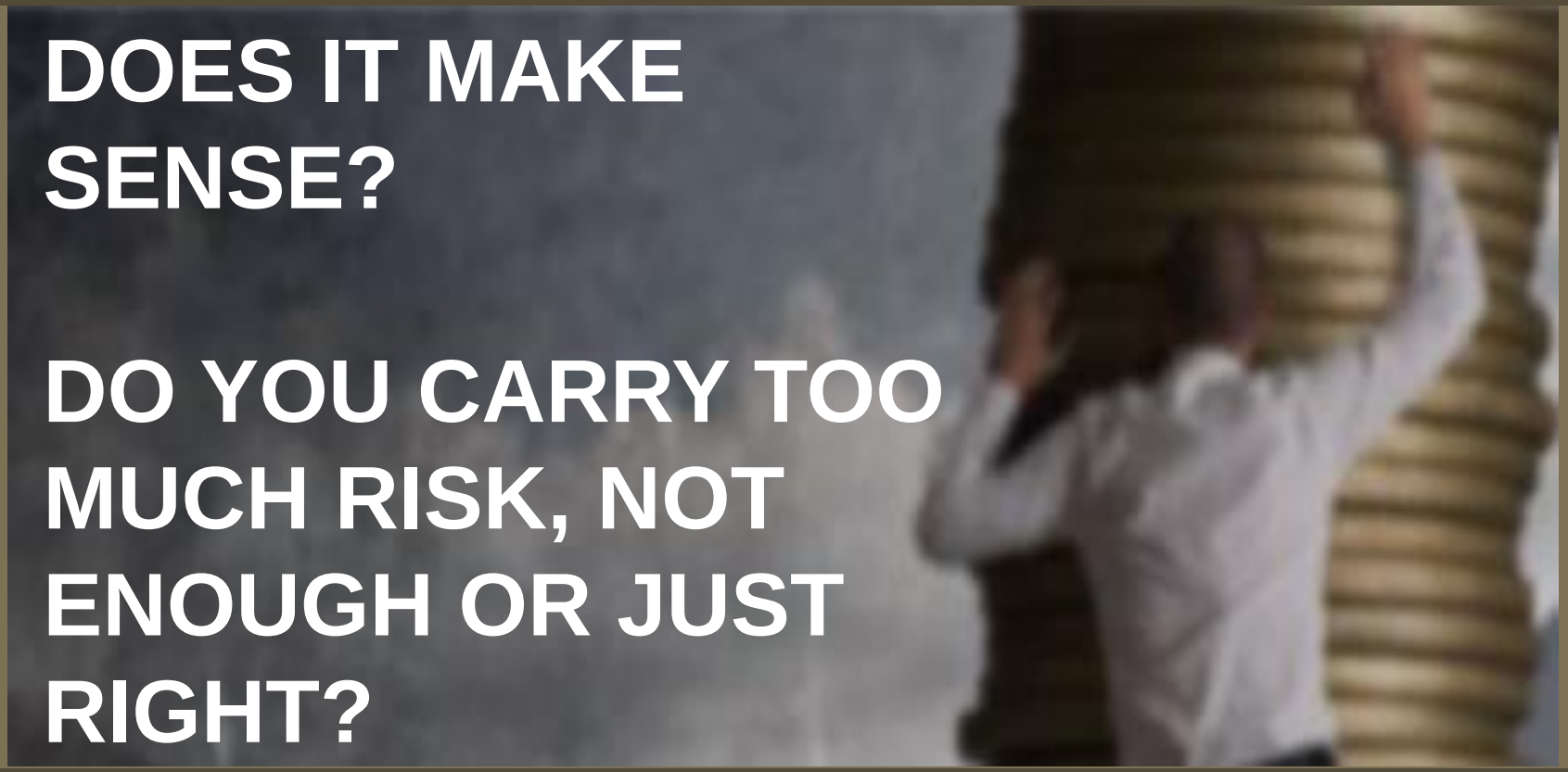
# Risk Scores for Wells

| Well Name | POF | COF | TOTAL RISK SCORE |
|---|---|---|---|
| Westside Well | 4 | 4 | 16 |
| Eastside Well | 2 | 4 | 8 |
| Northside Well | 4 | 3 | 12 |
| Southside Well | 1 | 2 | 2 |
| Central Well | 4 | 5 | 20 |

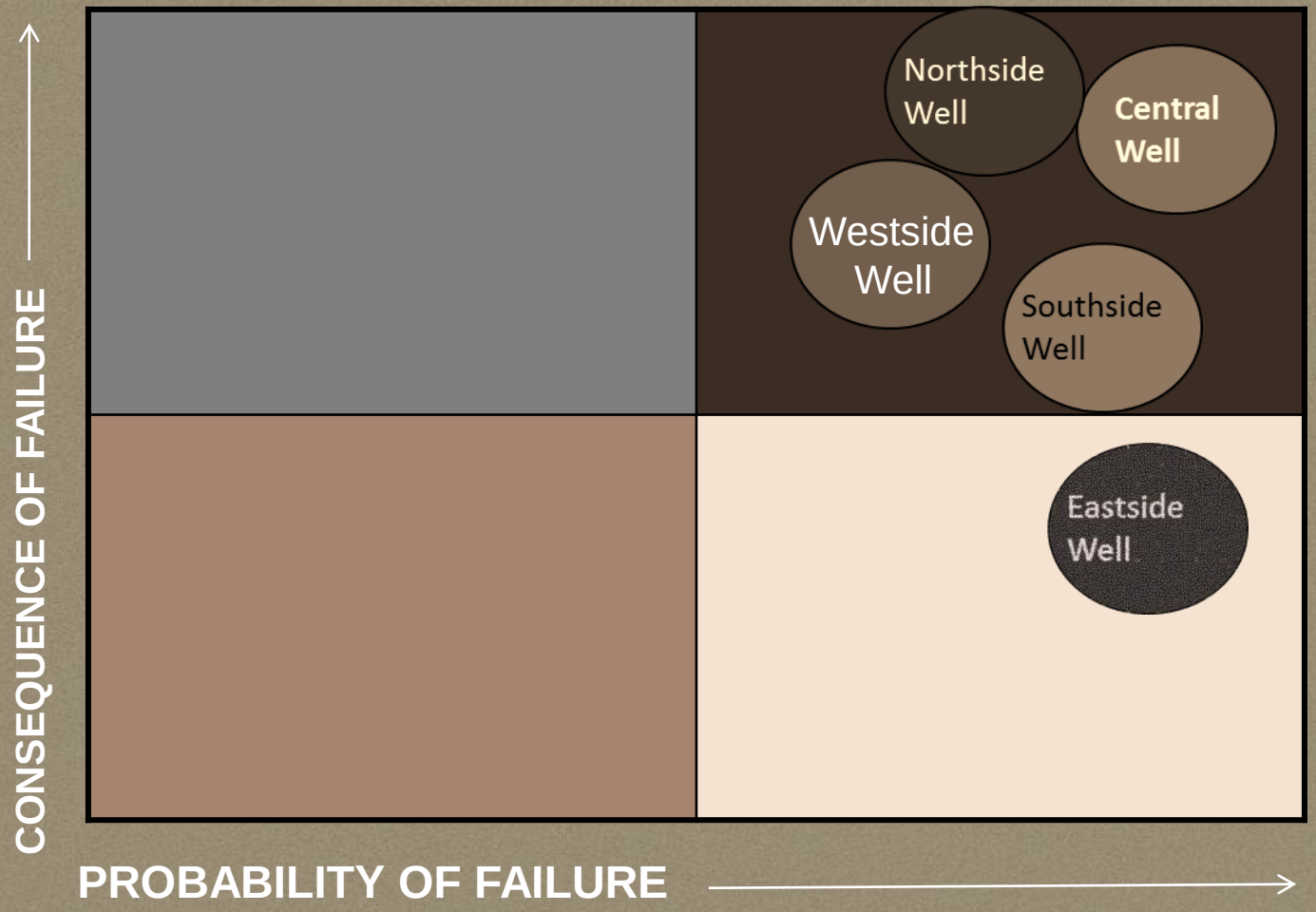
# VISUAL DISPLAY OF EXAMPLE DATA



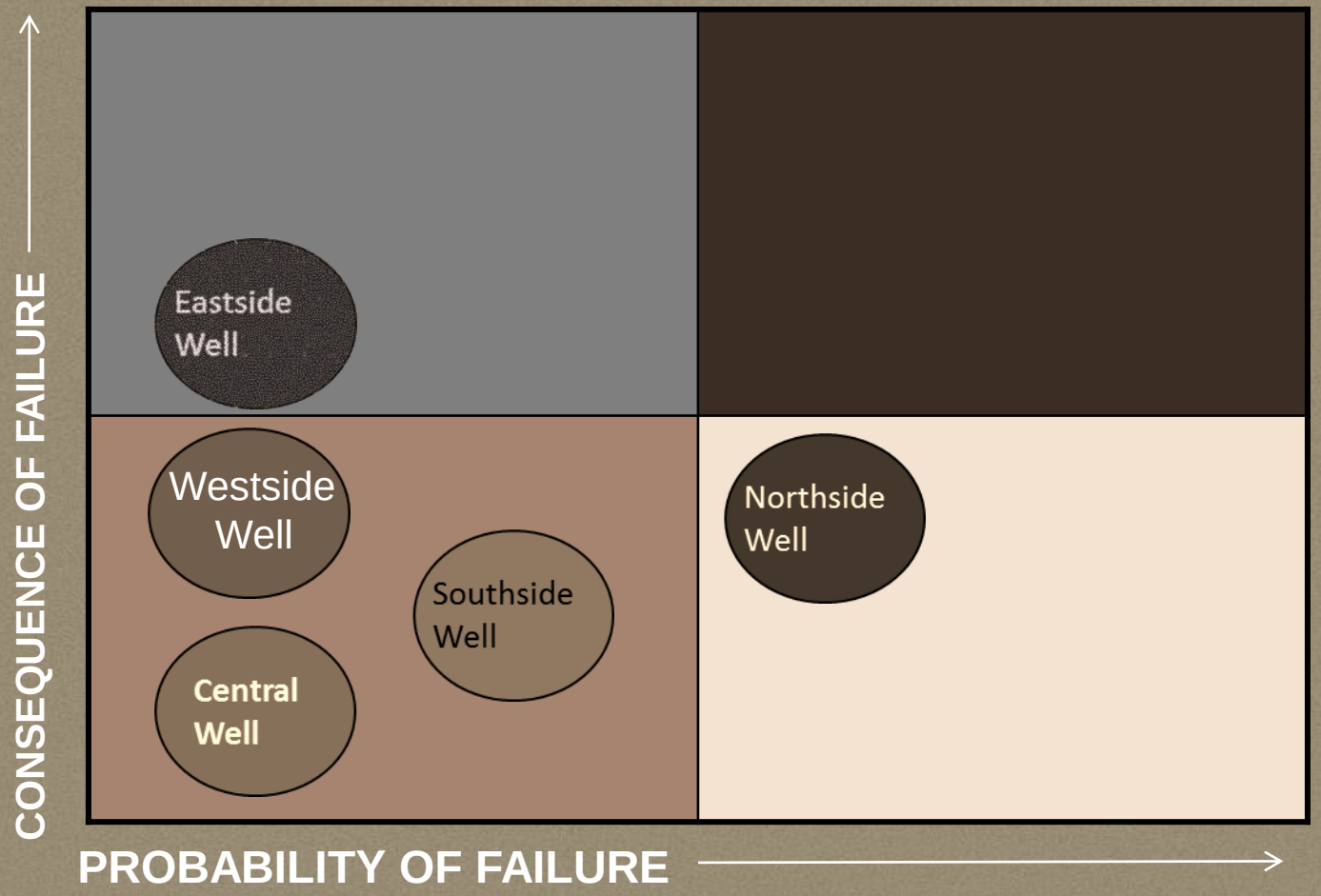
# What does the data say?



# WHAT IF IT LOOKED LIKE THIS?



# Or this?


CONSEQUENCE OF FAILURE
PROBABILITY OF FAILURE
Eastside Well
Westside Well
Southside Well
Central Well
Northside Well

# CRITICALITY CHANGES

- ✓ **CRITICALITY IS NOT STATIC**
- ✓ **EACH DAY CRITICALITY CHANGES SLIGHTLY**
- ✓ **NEED TO REASSESS CRITICALITY AT LEAST EVERY YEAR IF NOT SOONER**
- ✓ **REASSESS WHEN MAJOR CHANGES ARE MADE (UPGRADES, REPLACEMENTS, MAJOR CONSTRUCTION, REHABILITATION, REDUNDANCY ADDED)**

# Life Cycle Costing

# CAPITAL COSTS

# VS. LIFE CYCLE COSTS

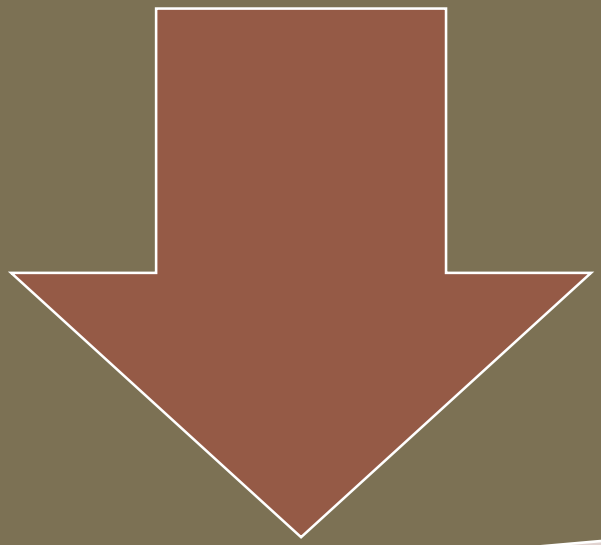
MANAGEMENT

O&M

Rehab

Repairs

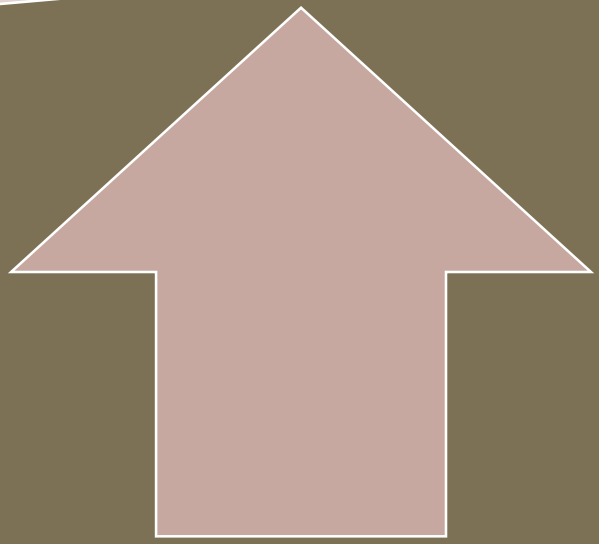
COSTS OVER ENTIRE LIFE



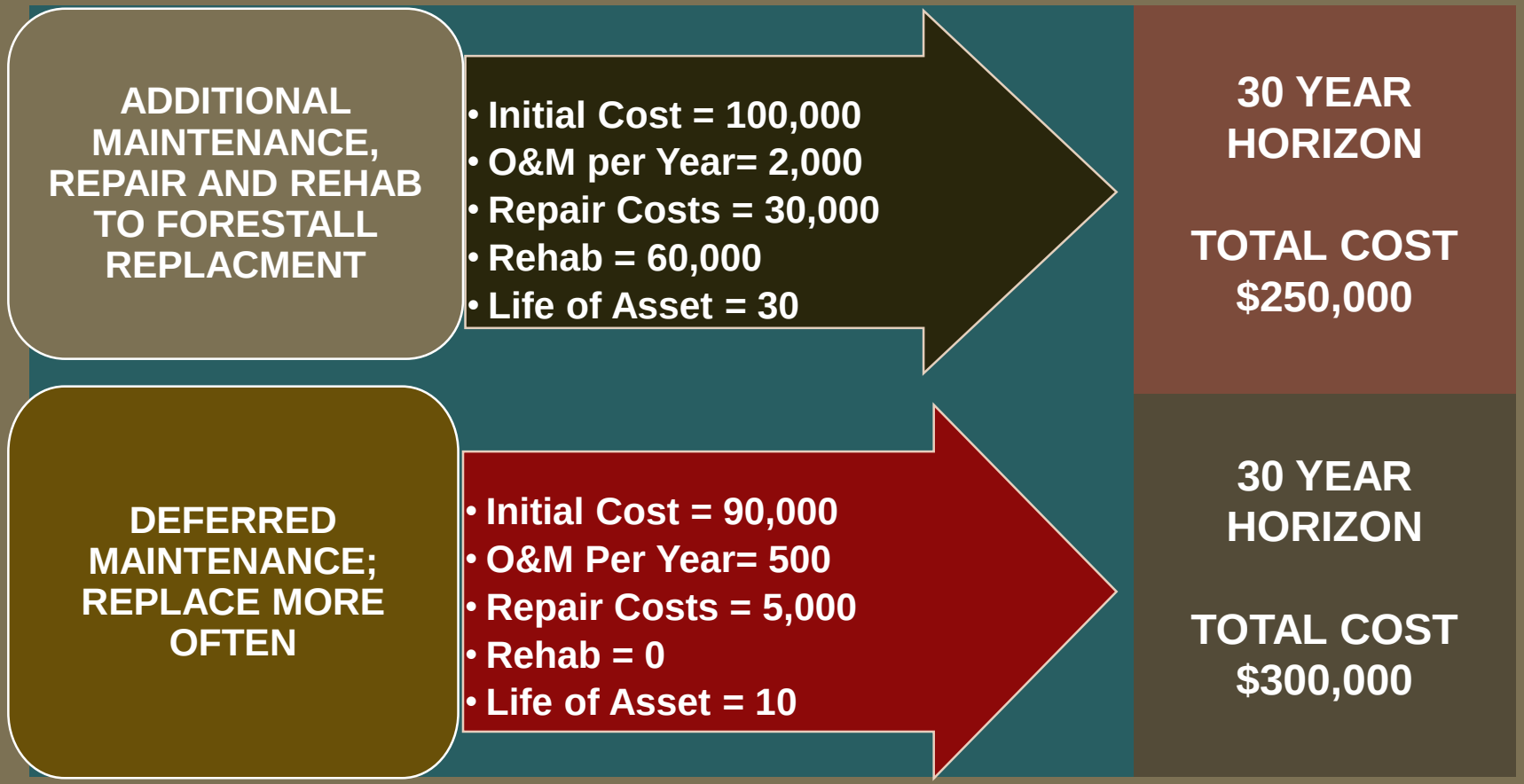
Capital Cost

Impact on what you choose to do?

Life Cycle Cost



# An Example


ADDITIONAL MAINTENANCE, REPAIR AND REHAB TO FORESTALL REPLACMENT
• Initial Cost = 100,000
• O&M per Year= 2,000
• Repair Costs = 30,000
• Rehab = 60,000
• Life of Asset = 30
30 YEAR HORIZON
TOTAL COST $250,000
DEFERRED MAINTENANCE; REPLACE MORE OFTEN
• Initial Cost = 90,000
• O&M Per Year= 500
• Repair Costs = 5,000
• Rehab = 0
• Life of Asset = 10
30 YEAR HORIZON
TOTAL COST $300,000

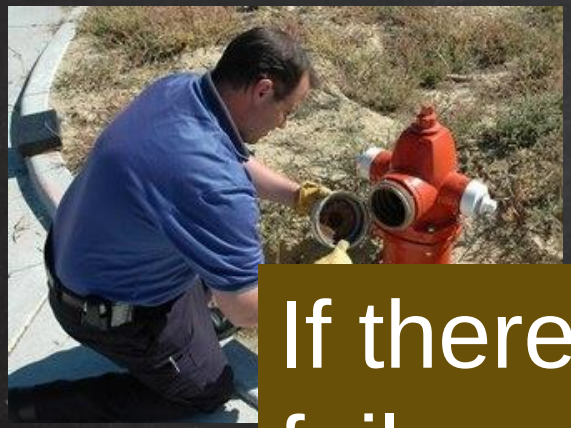
# Life Cycle Costing is About Balance

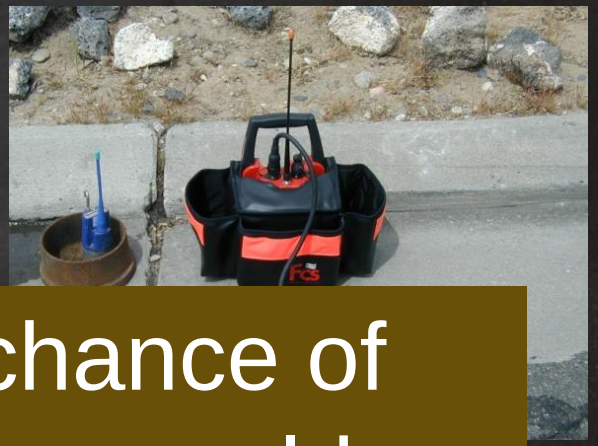
**O&M**

**REPAIR & REHAB**

**REPLACEMENT**

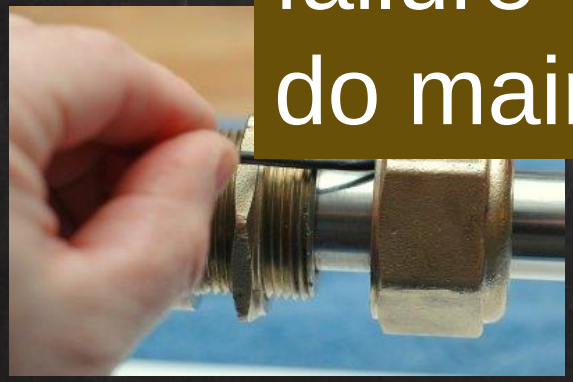
# WHY DO WE DO MAINTENANCE





If there were no chance of failure whatsoever, would we do maintenance at all?

ROU



PREVENTATIVE

# WHAT KIND OF FAILURES ARE WE TRYING TO PREVENT?

Complete asset failure

Disruption of service to customers

What other kinds of failures?

Failure of another asset caused by failure of this asset

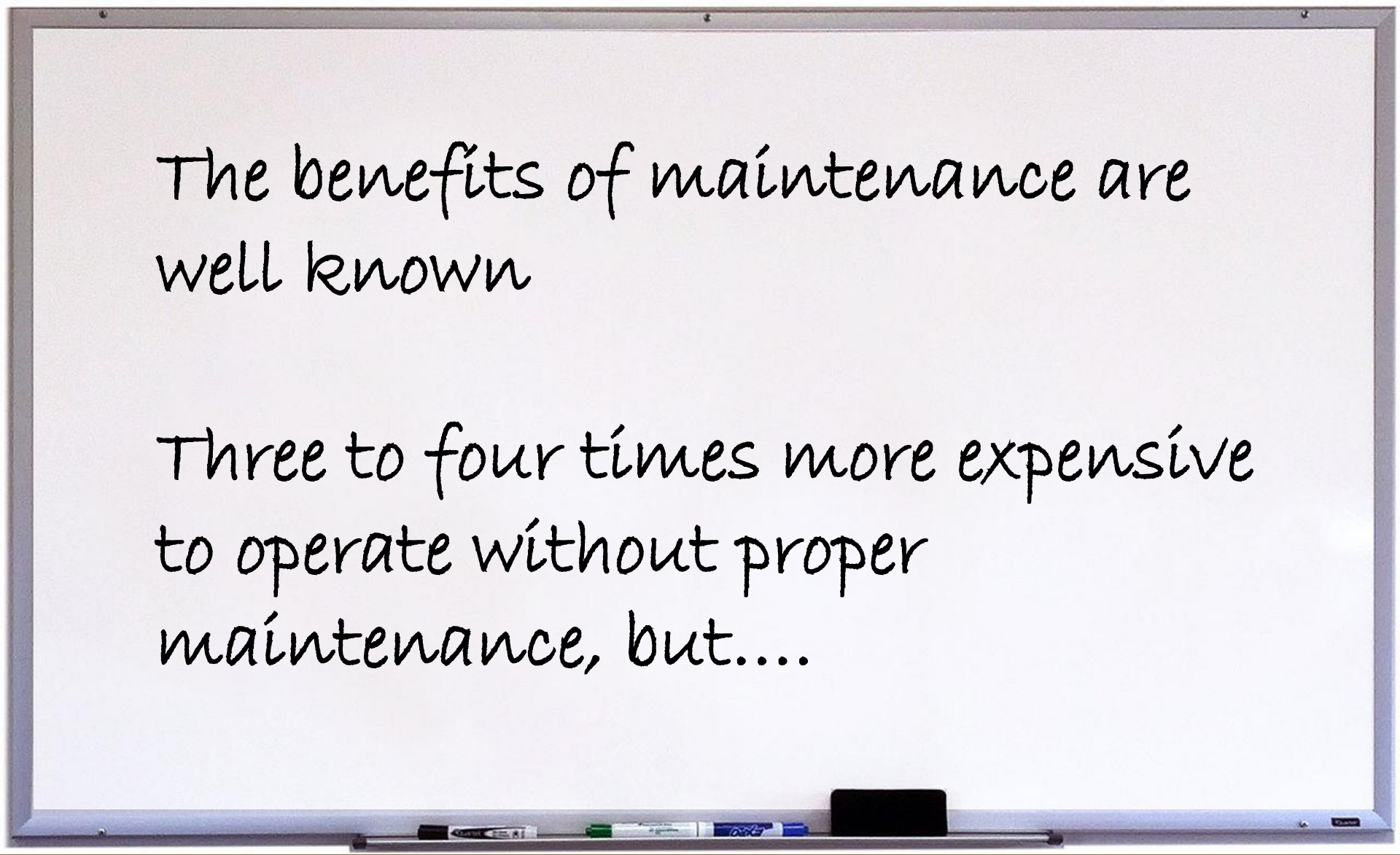
Reduction in Level of service

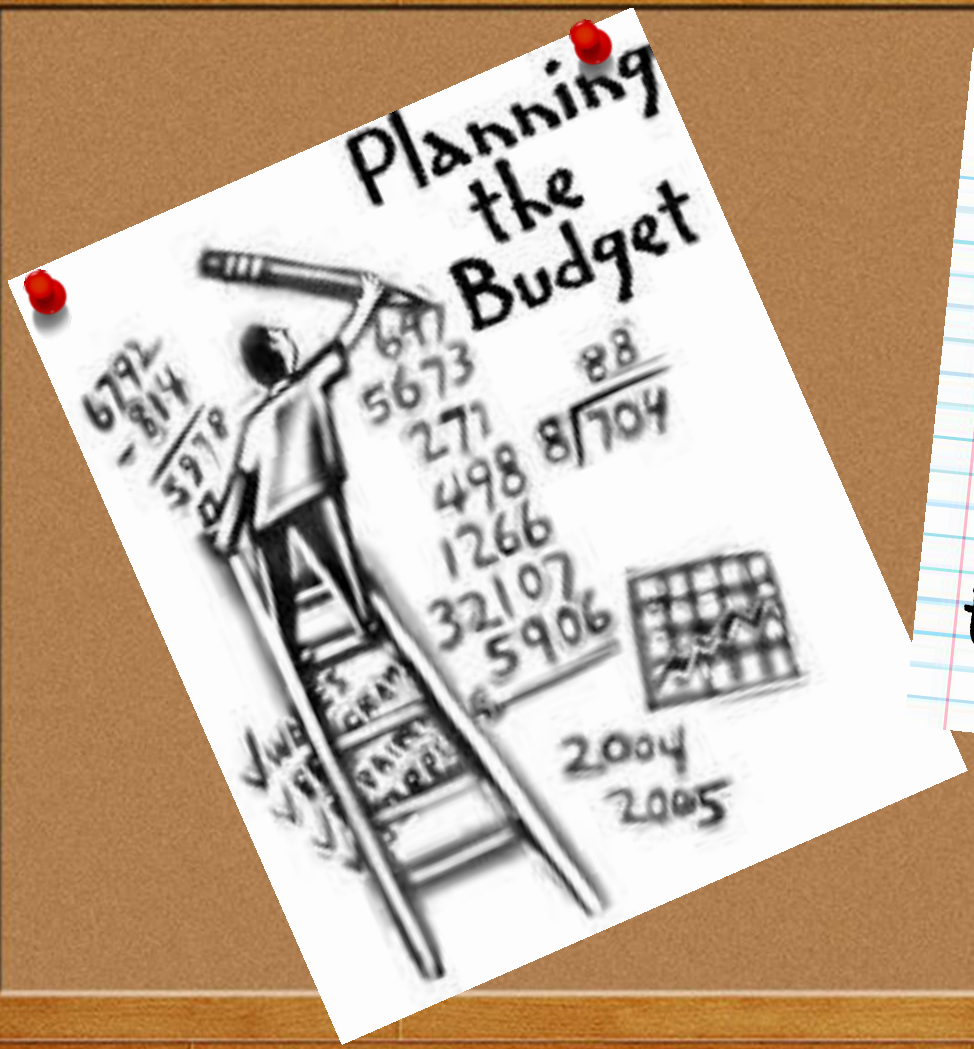
# MAINTENANCE ACTIVITIES

ROUTINE

PREDICTIVE

PREVENTATIVE


The benefits of maintenance are well known
Three to four times more expensive to operate without proper maintenance, but....



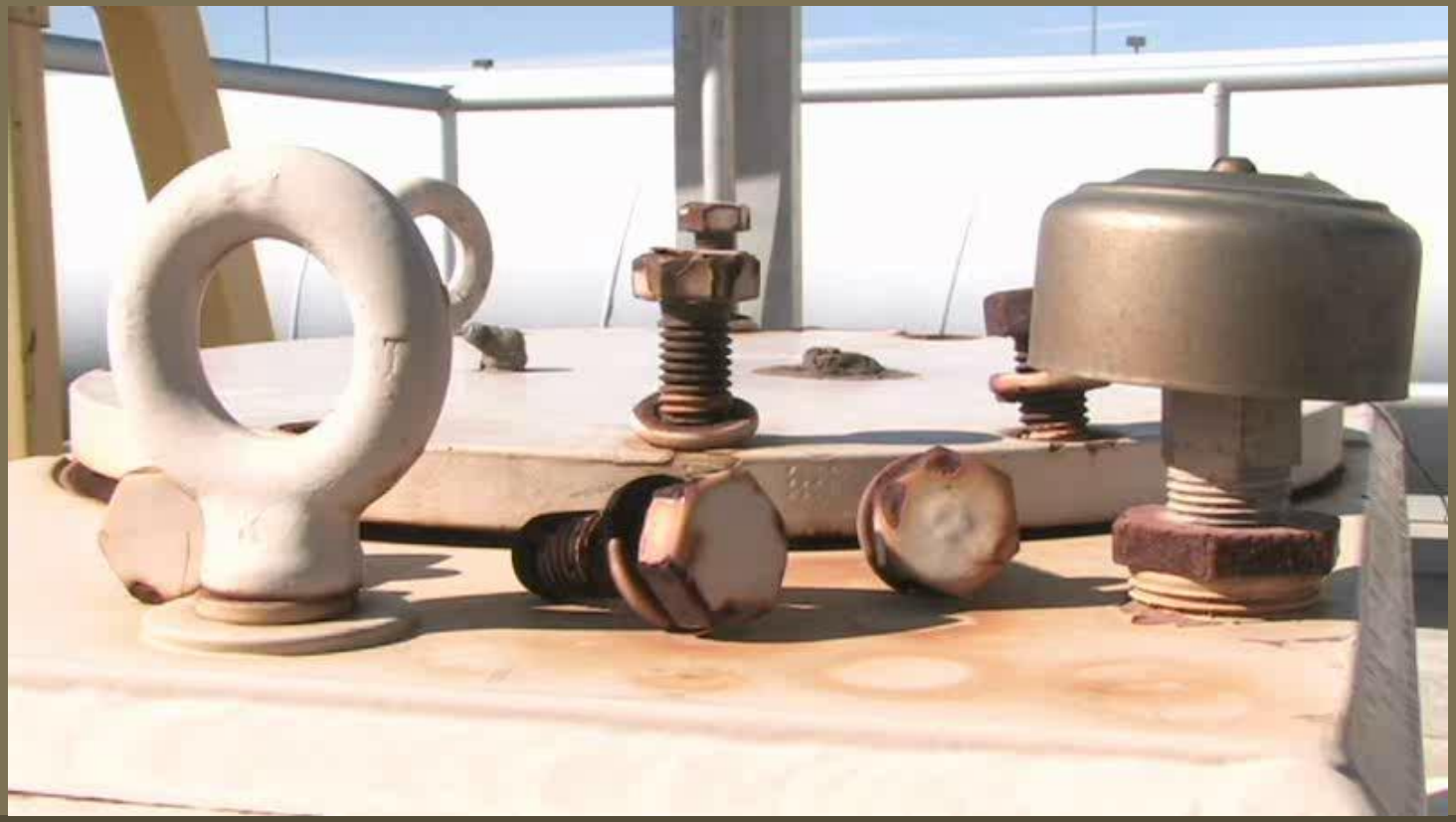

Maintenance is a common item cut from the budget

# Why?

# WHAT HAPPENS WHEN MAINTENANCE GETS CUT?


WE MOVE TOWARD COMPLETE REACTIVE MODE

# AM IN ACTION: REACTIVE VS. PROACTIVE OPERATION



Mark Winslow and Jerry Morse, ABCWUA, NM


When you think about the maintenance on your facility how do you feel about it?


Where do you fall
on the scale of
reactive vs.
proactive?


If an airplane was maintained the way you maintain your facility would you fly in it?

# THE LIST OF ASSETS IN THE ASSET INVENTORY PROVIDES INFORMATION REGARDING THE ASSETS THAT NEED O&M

# SEPARATE ASSETS BY CLASS OR CATEGORY TO AID IN DETERMINNG O&M TASKS

BUILDINGS

WELLS

PUMPS

VEHICLES

PIPES

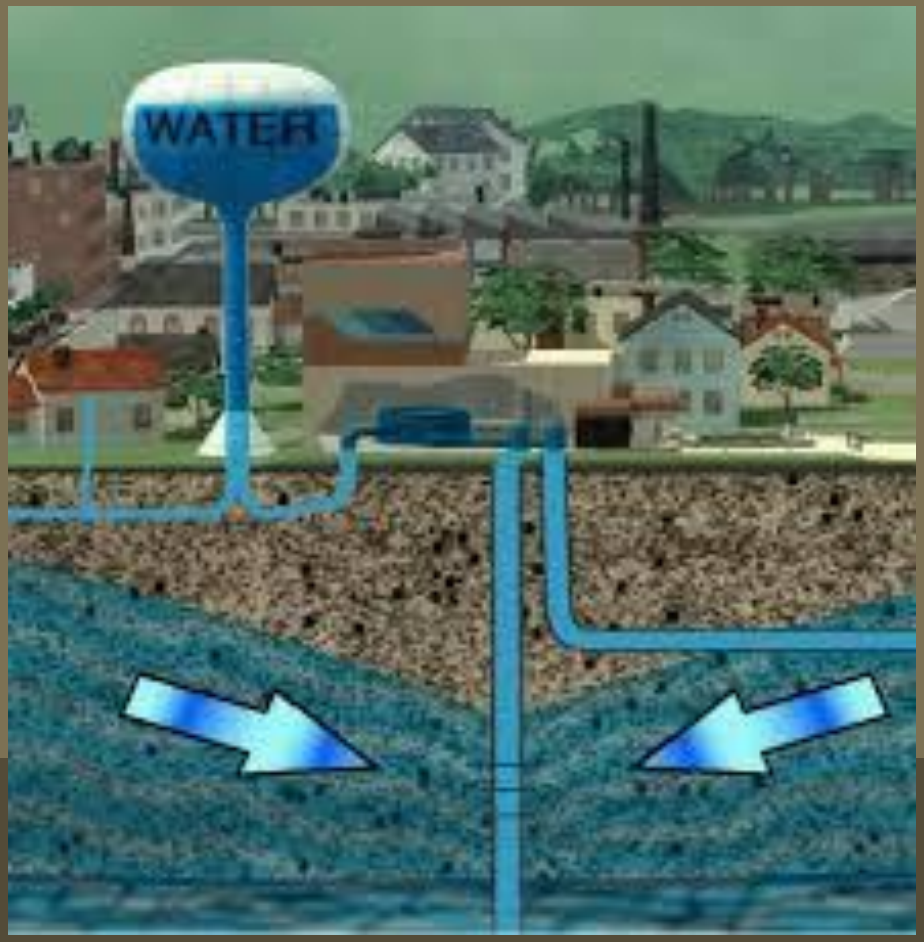

VALVES

METERS


Determine OGM
activities by
category first then
add any activities
for specific
equipment


List operation and
maintenance
activities by type
and frequency

# EXAMPLE: SMALL GROUNDWATER SYSTEM



# Example O&M Tasks
## DAILY

Read water production meters

Measure & Record $Cl_2$ residuals

Record well pump run times

Check water pressure in each well house

Record water levels in storage tanks

# Example O&M Tasks
## WEEKLY

Check well house interior and grounds for cleanliness and condition

Verify start and stop pressure settings and operability of water pressure gauges

Check pumps for leaks or seepage

Check bladder tanks for waterlog condition

# Example O&M Tasks
## MONTHLY

Check well house control valves for proper positions (open or closed)

Perform routine operation of emergency generator

Inspect well pump motors and controls

Take monthly water quality samples

Read customer meters

# Example O&M Tasks
## Quarterly

Inspect and clean chlorine solution feed lines

Clean pump house and grounds

Inspect storage tanks for sanitary deficiencies

# Example O&M Tasks
## SEMI-ANNUALLY

Exercise half of all main line valves

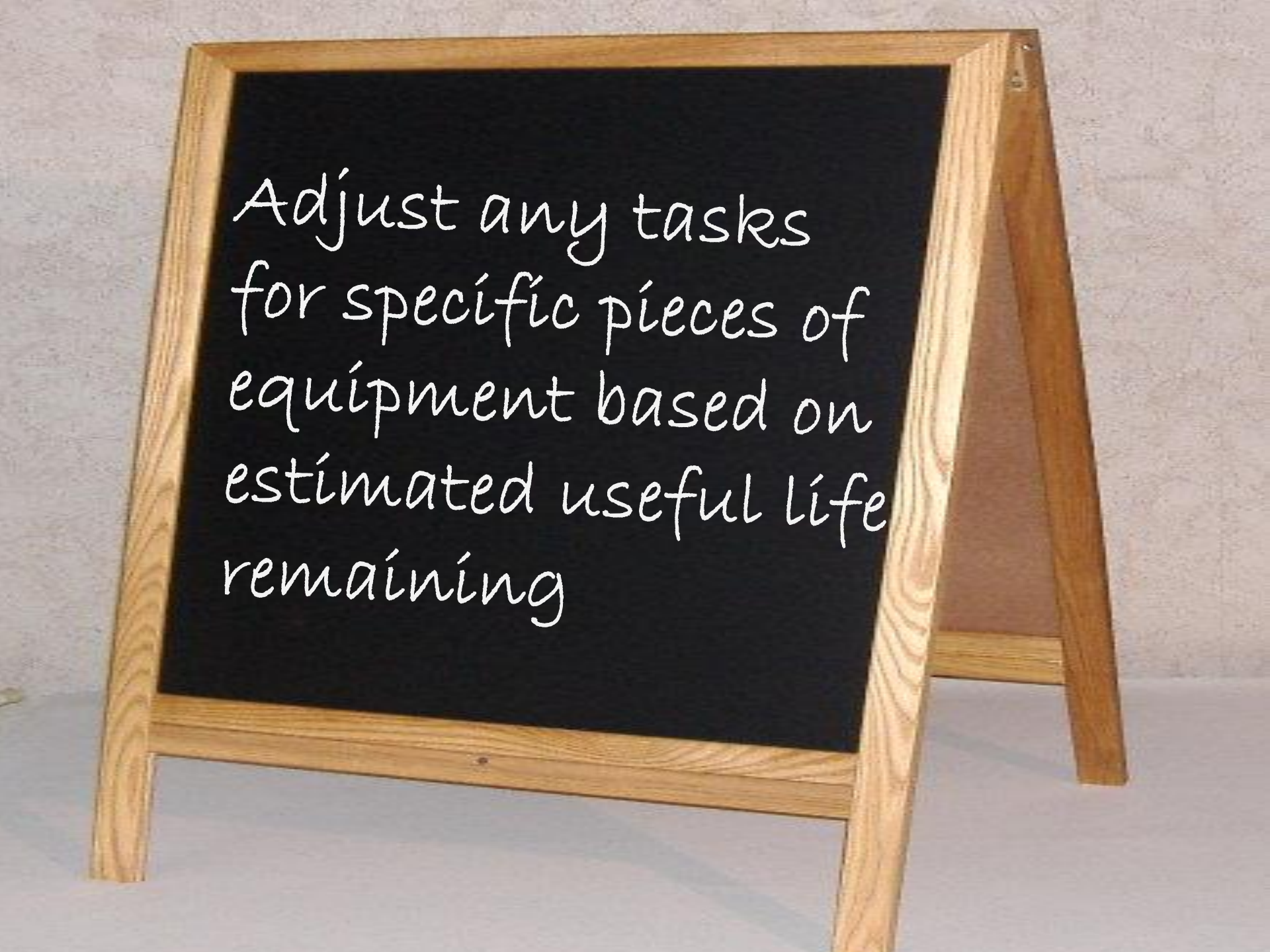
Check pressure relief valves

Record static and pumping levels of each well

Inspect chemical safety equipment


Create a master list
by frequency
(daily tasks,
weekly tasks,
monthly tasks,
quarterly tasks,
etc.)


Adjust any tasks
for specific pieces of
equipment based
on condition
(increase or
decrease OEM)


Adjust any tasks
for specific pieces of
equipment based on
estimated useful life
remaining

# USEFUL LIFE OF THE ASSETS



If the useful life is near the end and the asset is scheduled for replacement, some O&M may not be necessary

# USEFUL LIFE OF THE ASSETS



Alternatively, examine the possibility of doing more OGM to extend useful life beyond estimate


Examine quantity
of OGM on the asset
and the cost of OGM
per asset to see how it
compares to
replacement cost

# SET GOALS FOR O&M

# WHAT GOALS COULD YOU SET RELATED TO O&M?

Ratio of planned maintenance vs. corrective

Increase in the life of a particular asset

Increase in the life of a class of asset

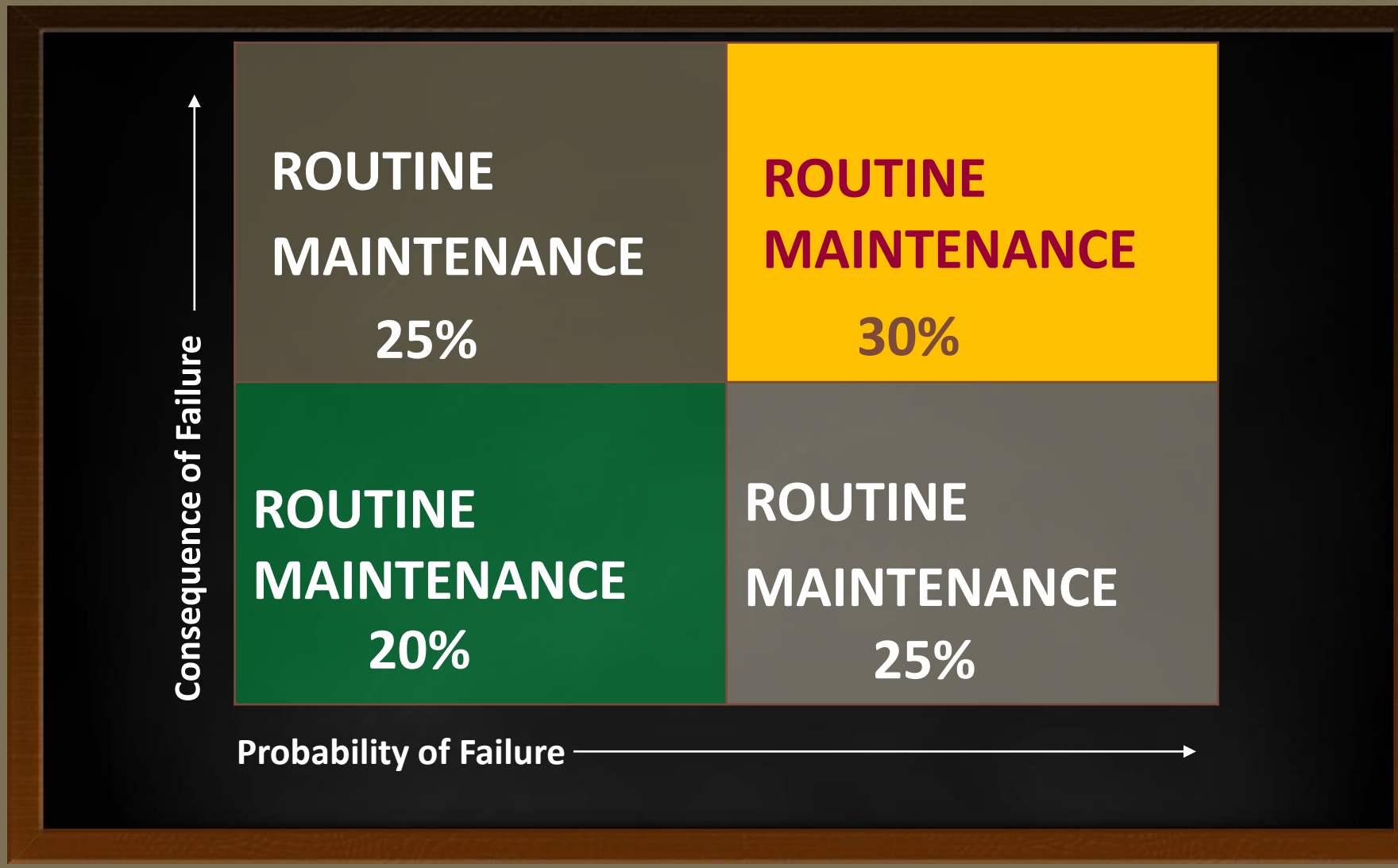
Decrease in costs related to contracted repairs

Decrease in cost of corrective maintenance over time

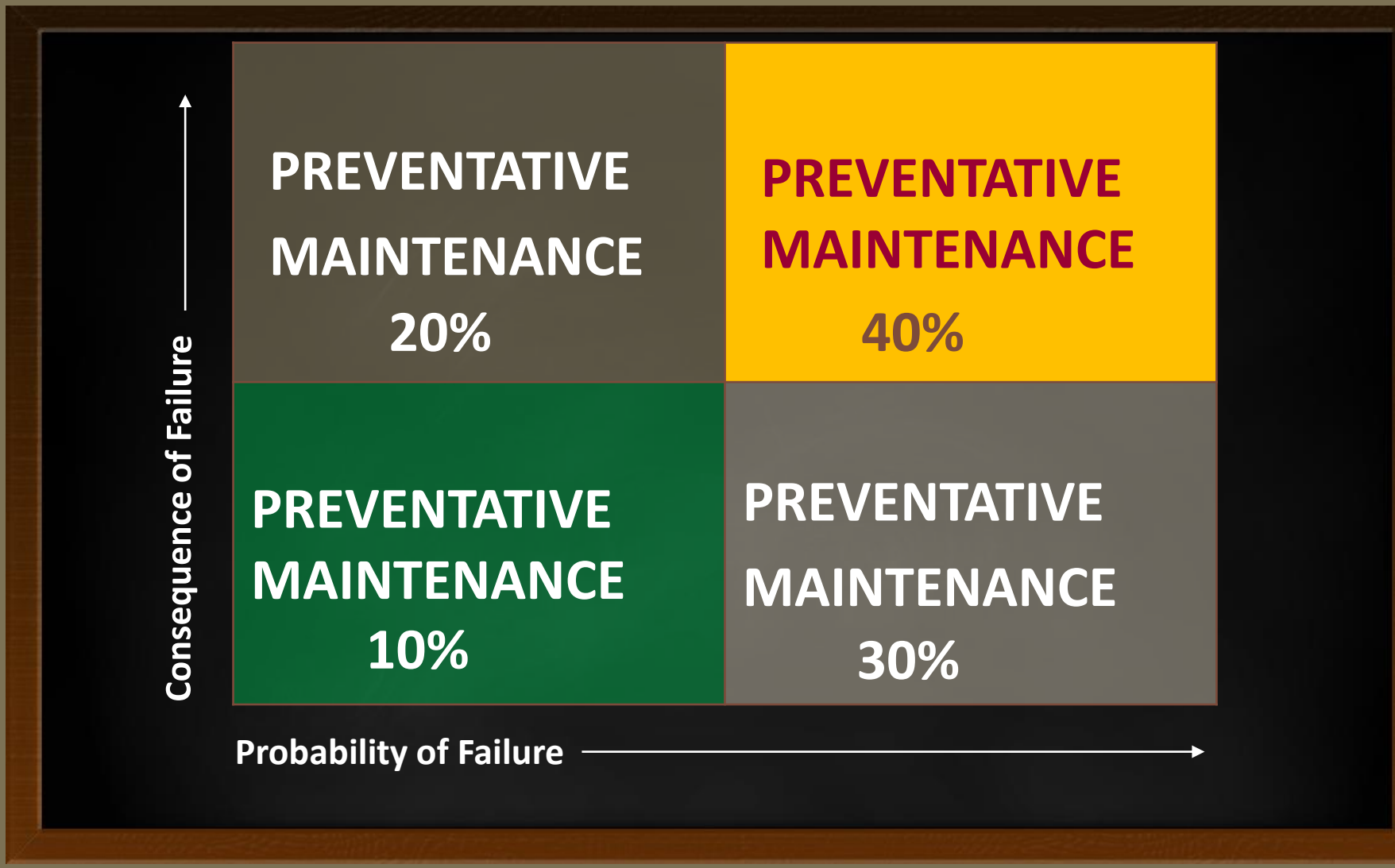
# ENSURE O&M IS ADEQUATE TO MEET THE OTHER GOALS OF THE FACILITY


**Adjust O&M as necessary to ensure that goals related to all other aspects of operation can be met**

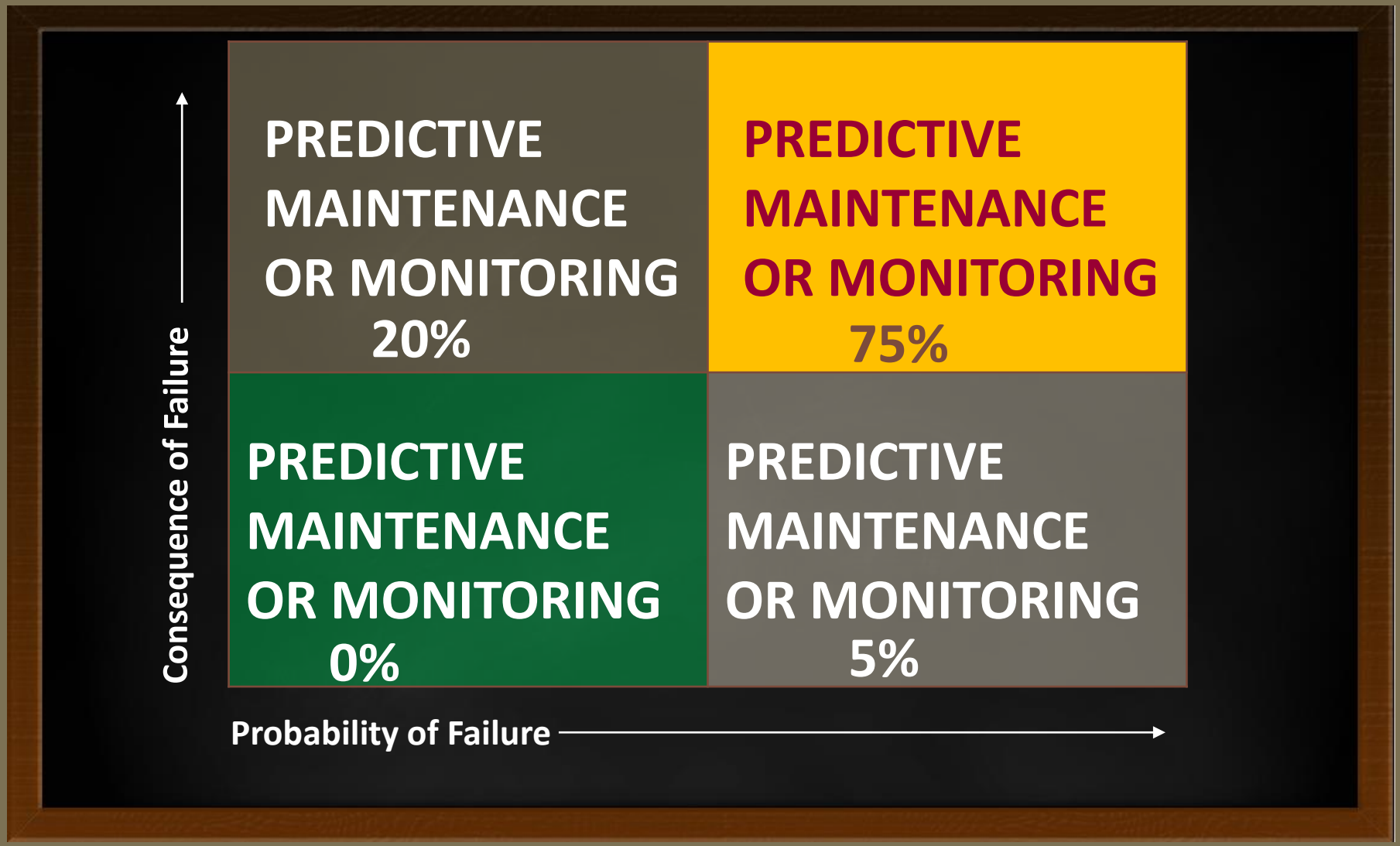
# ROUTINE MAINTENANCE BASED ON CRITICALITY



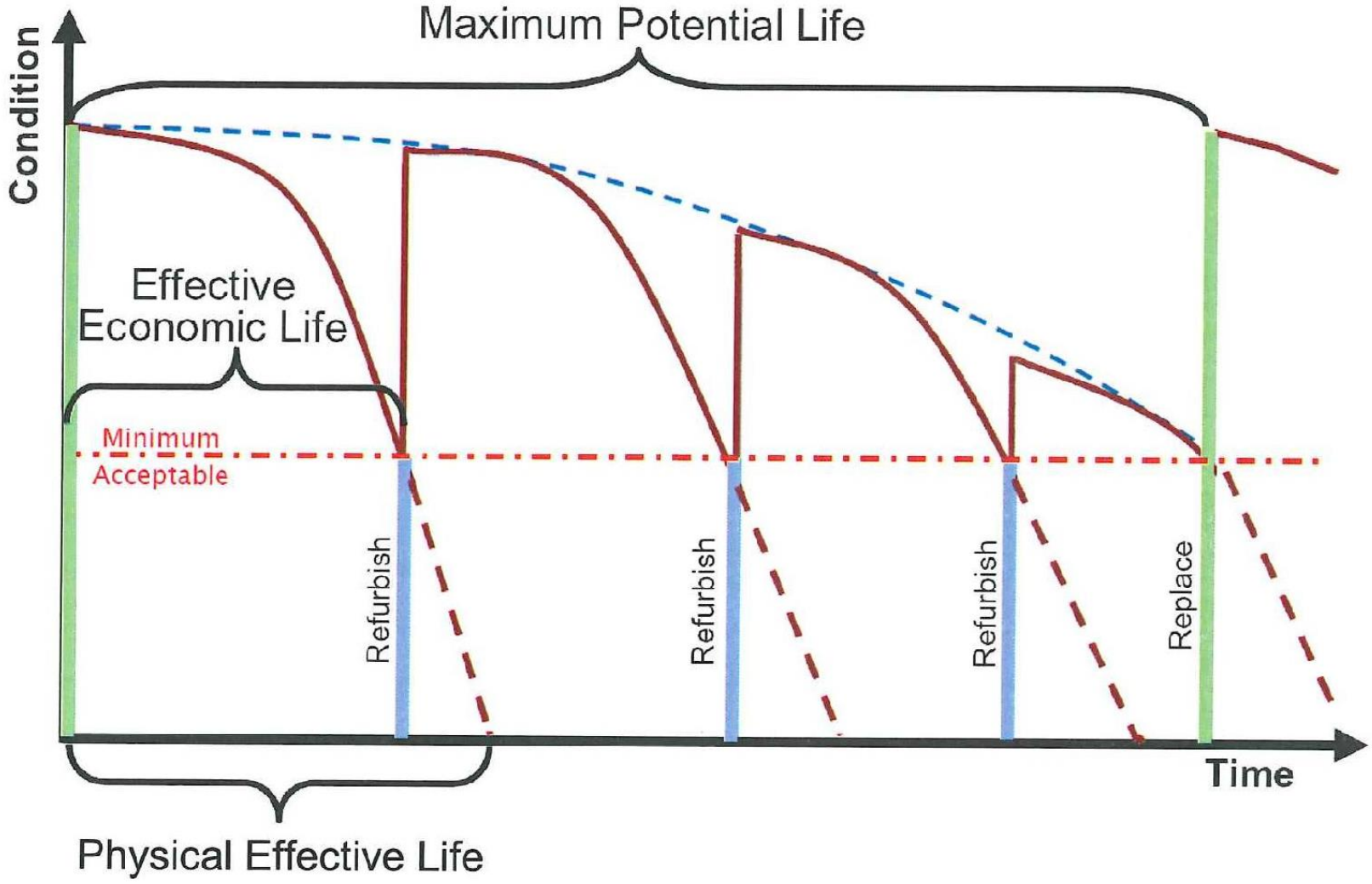
# PREVENTATIVE MAINTENANCE BASED ON CRITICALITY



# PREDICTIVE MAINTENANCE OR MONITORING BASED ON CRITICALITY



# Extending the Life of an Asset



# Which Assets Have Possibility of Interventions? Which Don’t

- Develop a budget for the OSM you need to do

  Consider: labor costs, supplies, equipment, contractor (outside professional)

# IS CURRENT BUDGET FOR O&M ADEQUATE?

**Look at O&M plan:**
**What activities need to be done?**
**How much will these activities cost annually? What is the cost by asset class?**
**Does the split of costs by asset class make sense?**

What is the gap between current funding and needed funding for O&M?

# WHAT COULD YOU DO TO FILL THE GAP?

**Can any funding be moved from other portions of the budget to O&M?**

Is there any way to increase fees or other funding sources?
Is there any way to cut costs?

# ENERGY EFFICIENCY IS ONE WAY TO CUT COSTS

# CATEGORIES FOR ENERGY EFFICIENCY OPPORTUNITIES

| | | |
|---|---|---|
| Capital program or equipment replacement | Process Change | Operational Change |
| Automation or controls | Maintenance Improvements | Business Measures |

# POTENTIAL HIGH IMPACT PROJECTS

| | | |
|---|---|---|
| Water System Optimization | Pumping system efficiencies | Motor Management |
| Promote water conservation | Reduce heating and cooling loads for buildings | Use of renewable energy |

# FURTHER OPPORTUNITES IN BUILDINGS

| | | |
|---|---|---|
| Turn off lights | Replace light bulbs with low energy bulbs | Turn off computers |
| Consider occupancy sensors | Seal window leaks | Inspect/Clean/ change air filters |

# WATER EFFICIENCY IS ANOTHER WAY TO CUT COSTS & IT CAN INCREASE REVENUE

# WAYS TO CUT COSTS

Reducing liability (protection from lawsuits)

Reduce operational costs for pumping, treatment and maintenance

Reduce or eliminate need for new sources

Reduction of emergency repairs

Prevention of contamination

Reduction of damage to property

# WAYS TO INCREASE REVENUE

Recover revenue from customers who have been underpaying

Recover revenue from customers who have been stealing water

Recover revenue from stopped meters

Recover revenue from people receiving “free” water

Savings on energy and water efficiency can be spent in other areas, such as routine, preventative or predictive maintenance

# TRACK COST SAVINGS OVER TIME

Look at reduced replacement costs

Look at whether assets are lasting longer than previously (leading to reduced costs for replacement)

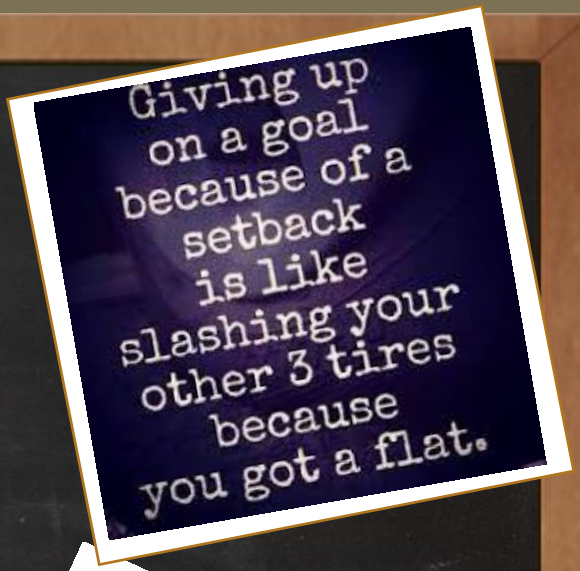
Examine whether major repairs are reduced

Has downtime been reduced?

Look at energy savings


# TRACK PROGRESS TOWARDS MEETING GOALS

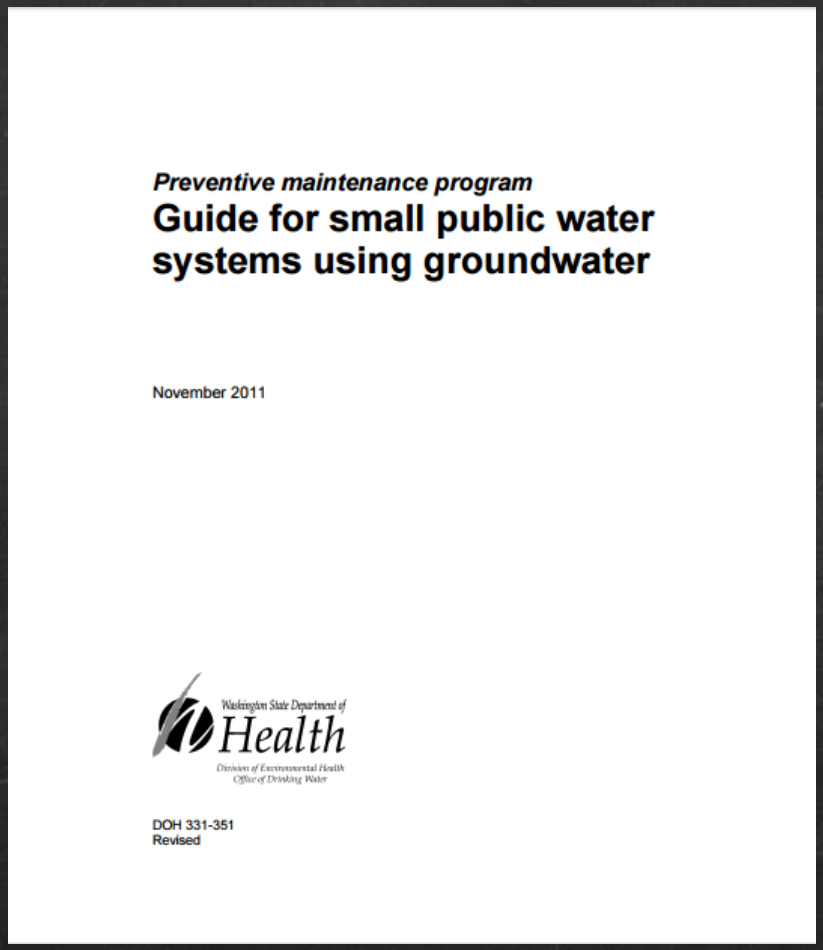
Examine progress towards meeting goals related to OGM
Are you meeting goals?
What could you change to meet goals?
Do goals need to be revised in any way?




# Develop an O&M Plan


Tie to Equipment Manufacturer's Information and manuals

# Good Reference for O&M Plan




**http://www.doh.wa.gov/portals/1/documents/pubs/331-351.pdf**

Create a check list of tasks that need to be done on assets and when they need to be done and keep records regarding whether tasks are completed

# KEEP RECORDS, PICTURES, VIDEOS, NOTES

It's important to review the OGM plan and adjust periodically (maybe every 2 – 3 years)

# QUESTIONS TO ASK YOURSELF IN REVIEWING AN O&M PLAN

| | |
|---|---|
| What do we do now that we should continue to do? | What don't we do that we should start doing? |
| What do we do now that we should no longer do? | What don't we do now that we can continue not doing? |

Evaluate all tasks to ensure money is spent in the right way on the right tasks

# TRACKING O&M COSTS

| Asset ID | Asset Category | Asset Type | Annual O&M Costs |
|---|---|---|---|
| RW1PHB | Raw Water | Pump | $4,523 |
| RW2PHB | Raw Water | Pump | $6,955 |
| RW1PHA | Raw Water | Pump | $3,760 |
| RW2PHB | Raw Water | Pump | $4,145 |

# CAPITAL ACTIVITIES: ASSETS EVENTUALLY NEED REPLACING

# CAPITAL ACTIVITIES

# HOW TO DECIDE WHEN TO REPAIR, REHABILITATE, REPLACE

BASED ON ECONOMICS


BASED ON RISK

BASED ON AVAILABLE TECHNOLOGY

# CAPITAL PROJECTS

**LOOK CAREFULLY AT HIGH DOLLAR PROJECTS**

# Long Term Funding Strategies

# WHAT ARE YOUR FUNDING NEEDS?

**DAY TO DAY EXPENSES? (O&M)**

**CAPITAL EXPENDITURES (LONG TERM EXPENSES)**

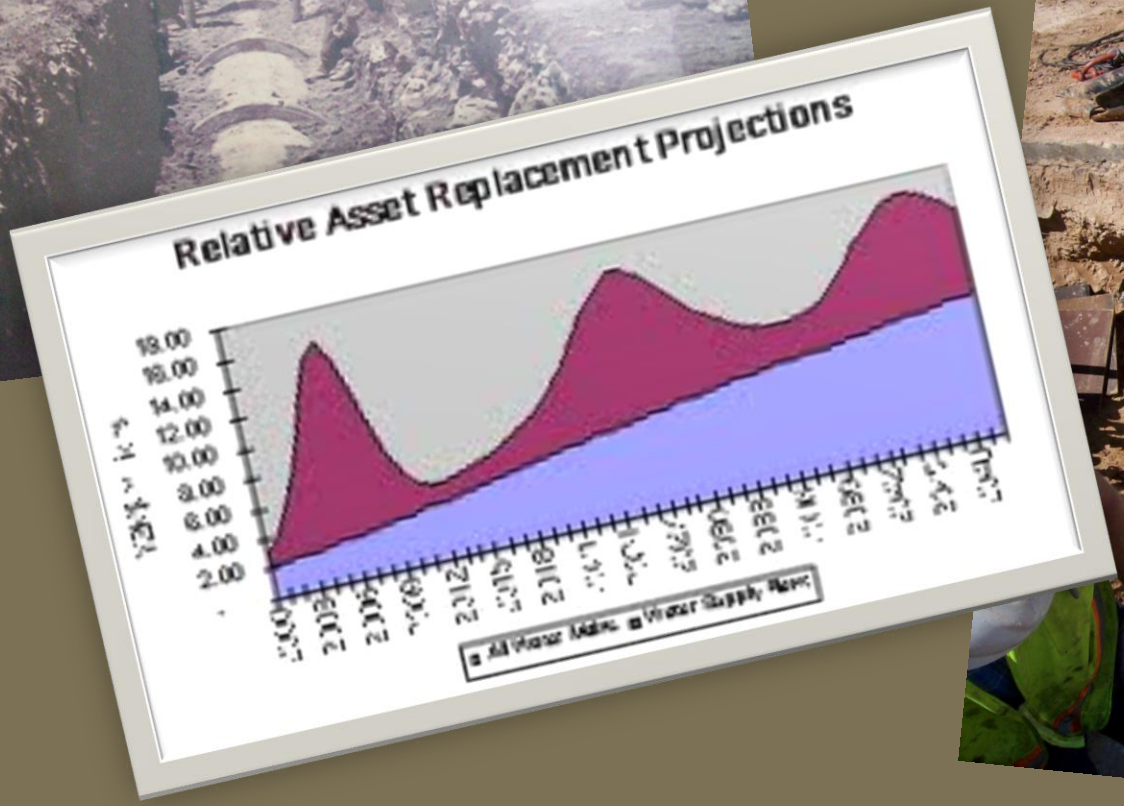
# WHERE WILL THE MONEY COME FROM?

**O&M – GENERAL FUNDS, OTHER FUNDS, RATES, FEES, PENALTIES**

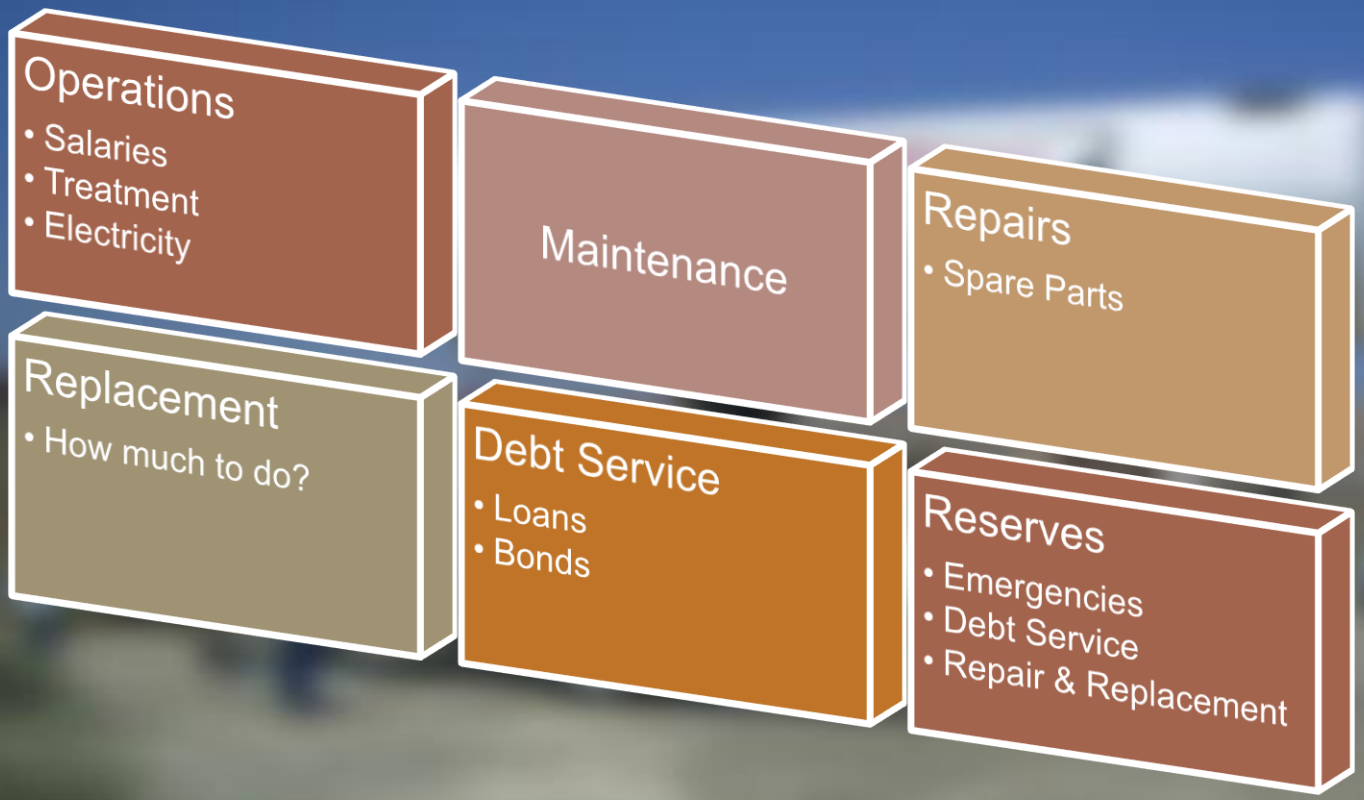
**CAPITAL PROJECTS – SYSTEM FUNDS AND/OR OUTSIDE FUNDING (GRANTS, LOANS)**

# FUNDING ISSUES

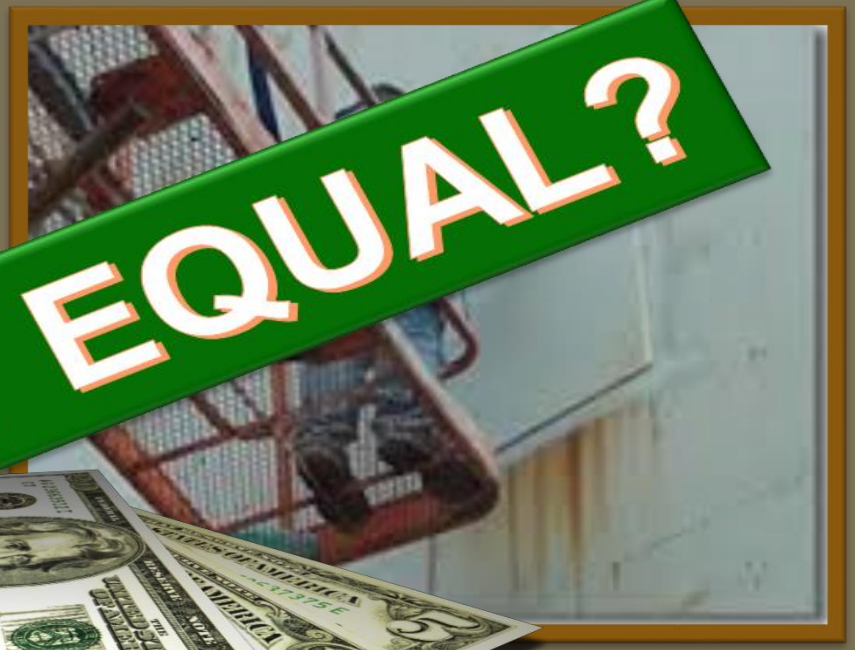
# ASSET REPLACEMENT WAVES




# FULL COSTS OF OPERATION



# A DOLLAR IS A DOLLAR?



ARE THEY EQUAL?

AL EXPENDITURE

NDITURE

# CHARGING FOR WATER – CONSIDERATIONS

# Resources and Tools

efcnetwork.org

# Funding Information by State

- http://efcnetwork.org/funding-sources-by-state/

**New Mexico Water and Wastewater Funding Sources**

Compiled by the EFCN, March 2013

| Organization | Program *(key words)* | Purpose or Use of Funds | Application Dates | Website | Contact |
|---|---|---|---|---|---|
| New Mexico Finance Authority | Drinking Water State Revolving Loan Fund (DWSRF) *(water)* | The Environmental Finance Authroity provides low-cost financial assistance to eligible public water systems to finance the cost of repair and replacement of drinking water infrastructure, maintain or achieve compliance with the federal Safe Drinking Water Act (SWDA) requirements, and protect drinking water quality and public health. | Applications received year round | http://www.nmfa.net/NMFAInternet/NMFA_Web.aspx?ContentID=6 | Ryan Helton<br>rhelton@nmfa.net<br>505-992-9615<br>207 Shelby Street<br>Santa Fe, New Mexico 87501 |
| | Public Project Revolving Fund (PPRF) *(sewer, water)* | The PPRF is used to finance public projects such as water system upgrades and other infrastructure improvements. | No actual dates found | http://www.nmfa.net/NMFAInternet/NMFA_Web.aspx?ContentID=186 | John Brooks<br>jbrooks@nmfa.net<br>505-992-9638<br>207 Shelby Street<br>Santa Fe, New Mexico 87501 |
| | Water Project Fund *(sewer, water)* | Porjects are recommended by the Water Trust Board to the Legislature. Projects fall within five project categories: (1) water conservation or reuse, (2) flood prevention, (3) endangered species act (ESA) collaborative efforts, (4) water storage, conveyance and delivery infrastructure improvements, and (5) watershed restoration and management initiatives. | No actual dates found | http://www.nmfa.net/NMFAInternet/NMFA_Web.aspx?ContentID=15 | Jana M. Amacher<br>jamacher@nmfa.net<br>505-984-1454<br>207 Shelby St.<br>Santa Fe, New Mexico 87501 |
| | Local Government Planning Fund (Formerly Known as the Water and Wastewater Planning Fund) *(sewer, water)* | Provides up-front capital (grants and loans) necessary to allow for proper planning of vital water and wastewater projects, including master plans, conservation plans, economic development plans, infrastructure plans and energy efficiency audits. | No actual dates found | http://www.nmfa.net/NMFAInternet/NMFA_Web.aspx?ContentID=8 | John Brooks<br>jbrooks@nmfa.net<br>505-992-9638<br>207 Shelby Street<br>Santa Fe, New Mexico 87501 |
| Economic Development Administration | Public Works and Economic Adjustment Assistance Programs | Empowers distressed communities to revitalize, expand, and upgrade their physical infrastructure to attract new | No actual dates found | http://www.eda.gov/programs. | Jorge D. Ayala<br>jorge.d.ayala@eda.gov<br>512-381-8150 |

# Funding Tools and Resources

- Financial Health Checkup for Water Utilities - Tool
- Plan to Pay: Scenarios to Fund Your CIP - Tool
- Water and Wastewater Rates Analysis Model - Tool
- Designing Rate Structures that Support Your Objectives: Guidance Document

http://efcnetwork.org/resource-library/

# Some Closing Thoughts

It’s better to walk on the right road than run on the wrong one

# Some Closing Thoughts

Asset Management is best done by the people who own, manage, and operate the assets

# Some Closing Thoughts

Efficient management of assets is necessary  to be good stewards of the public assets

# Some Closing Thoughts

Don’t let what you can’t do stop you from doing what you can do.