

UTILITIES DEPARTMENT ASSET MANAGEMENT

January 23, 2008

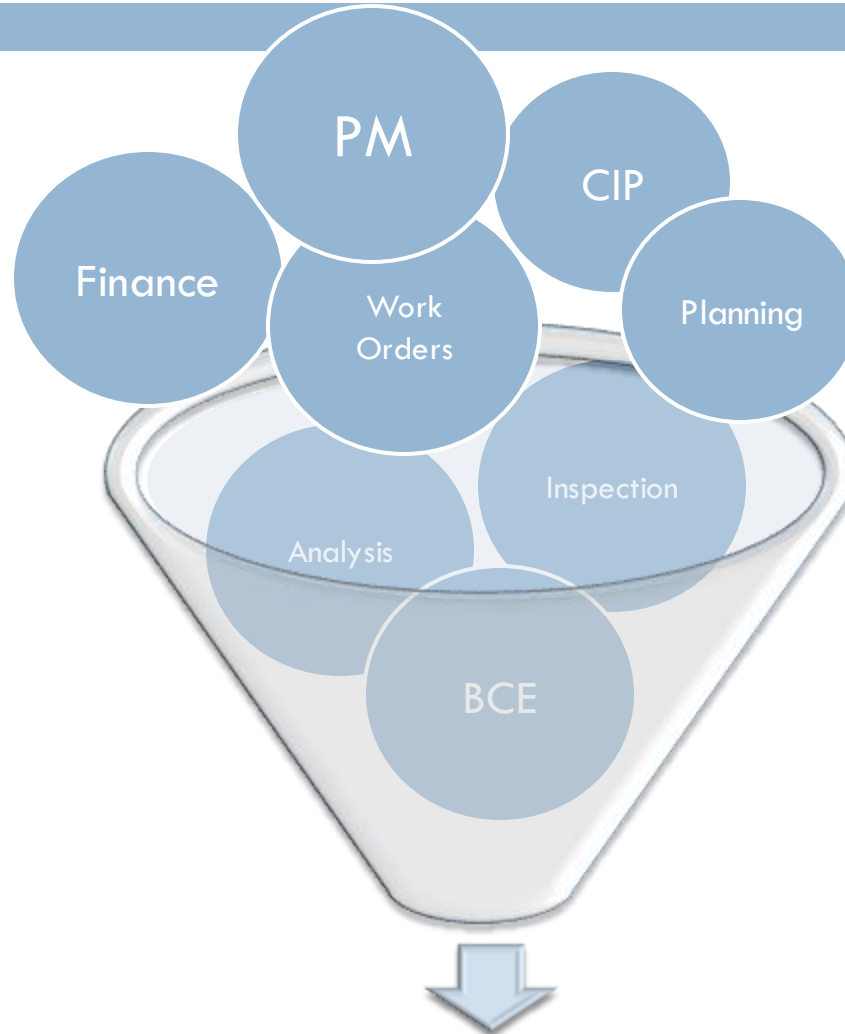
Presentation to Department Quarterly

Outline



- What is Asset Management
- Why are we investing in Asset Management
- Overview of Core Processes & Practices
- Examples and Updates from Santa Rosa's Asset Management
- Where to go next

What is Asset Management



Asset Management

What is Asset Management



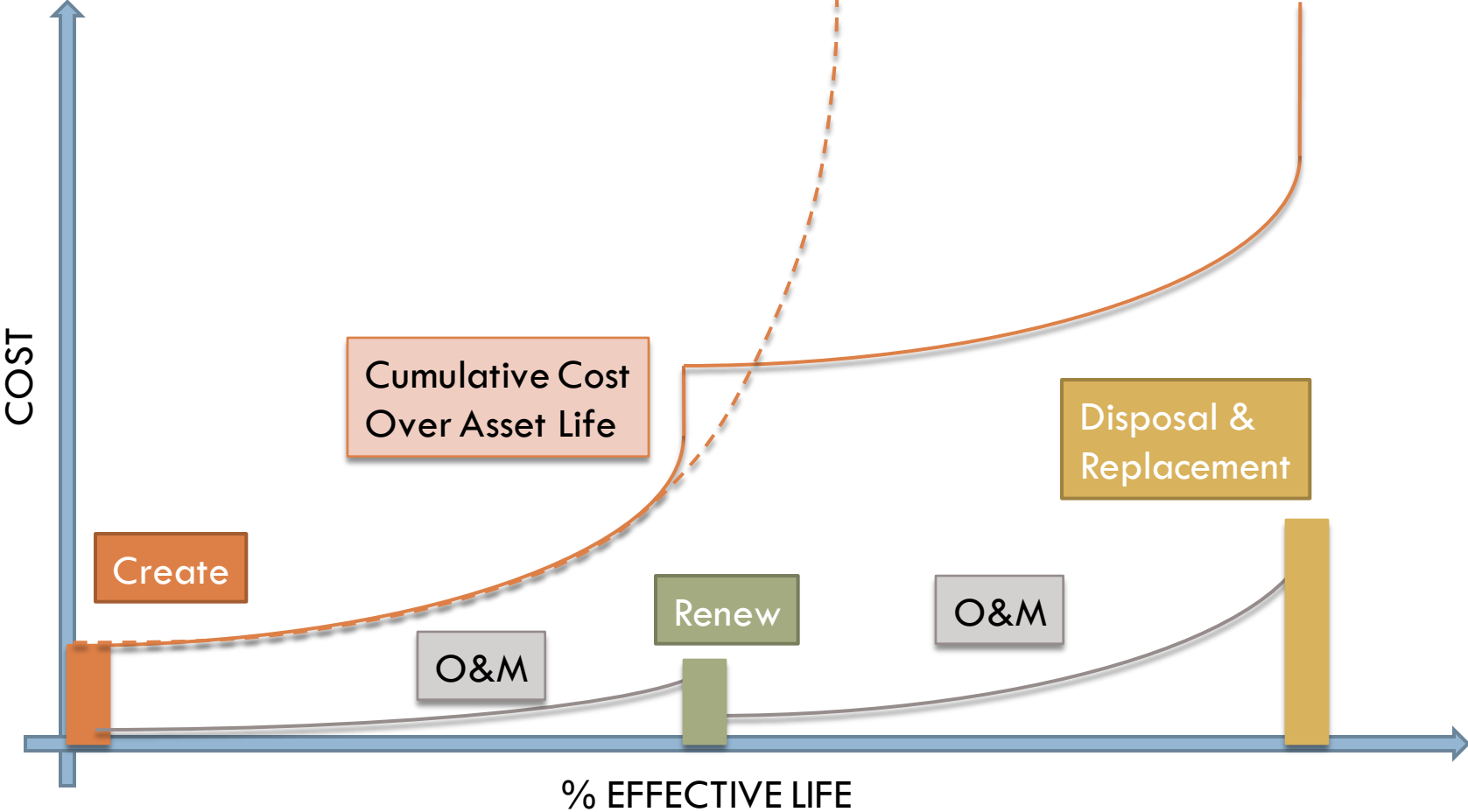
Set of Management Practices

Not a software package

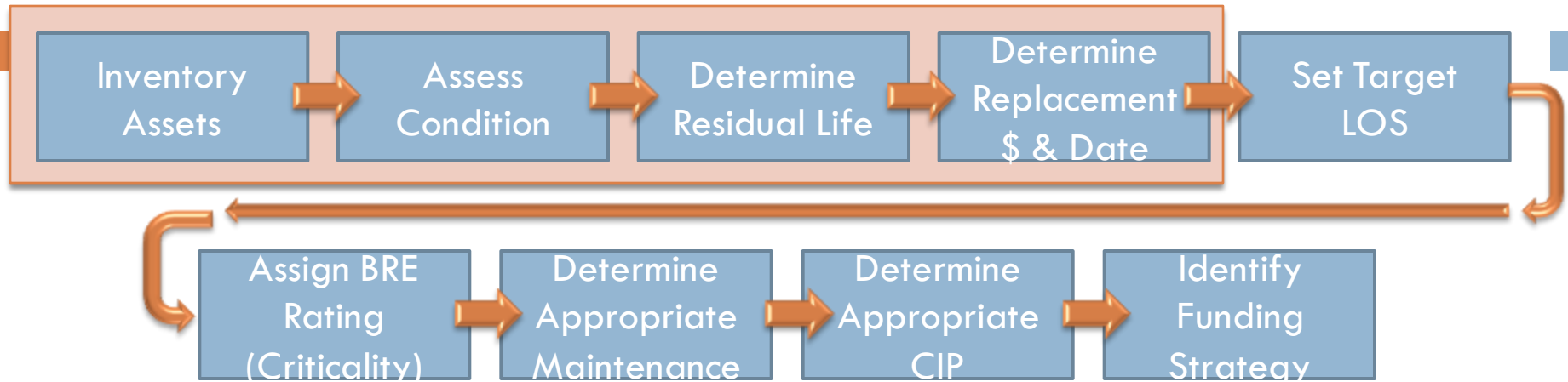
Why Asset Management?

- ▣ What work should my **operations and maintenance** crews be doing, where, and why?
- ▣ Which **capital projects** to undertake, when, and why?
- ▣ When to **repair**, when to **refurbish**, and when to **replace**?
- ▣ To give the **ratepayer** the **best value**

Life-Cycle Cost

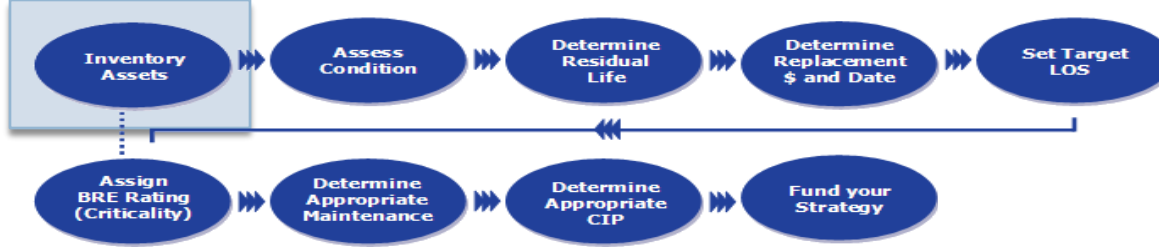


What is the current state of my assets?



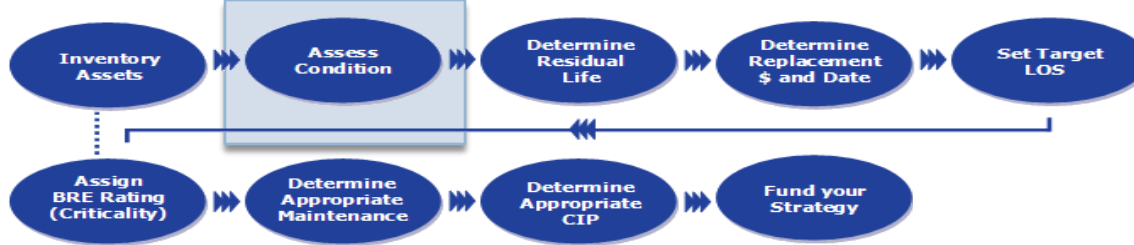
What do I own?
Where is it?
What condition is it in?
What is its remaining useful life?
What is its economic value?

Asset registry/inventory
Data standards / asset hierarchy
System maps
Process diagrams
"Handover" procedures
Condition analysis
Condition rating
Valuation techniques
Optimized renewal / replacement cost tables



Section	Assets
Local Wastewater	38,407
Local Water	96,028
LTP	2,877
Reclamation	1,181
Biosolids	397
Geysers	2,570
TOTAL	141,460





Smoke Testing of Sewer Mains and Associated Sewer Service Lines

Sewer Main ID: _____ Group Project# 15202

SMN: SND HH2720C001 - SMH HH2720MH001 3785 CLEVELAND AVE W.O.R. 205933

Picture ID's: _____ Date: _____ Time: _____ Crew: _____ Vehicle: _____

Defect in Main Defect in SM SMs Smoke from closed or inaccessible assets NEAR 1, 3-5

Roof Vents Smoke	Close that	Ground	Roof Downspout Smoke
	1-None	1-light	
2-Open	2-medium	2-medium	SMs, Vd Drain or RV
3-Open	3-heavy	3-heavy	

Laterals associated with sewer main:

3781 CLEVELAND AVE SSL00763 Time _____ Span _____

Picture ID's: _____

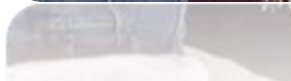
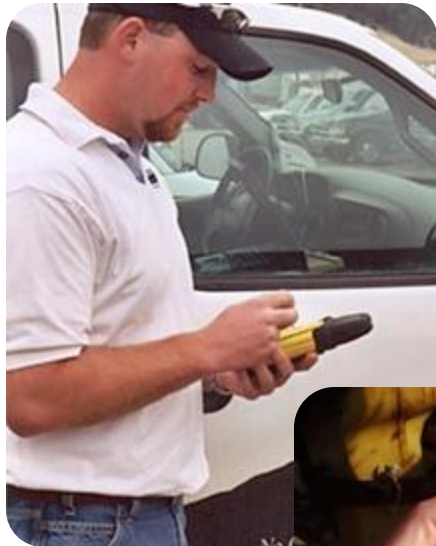
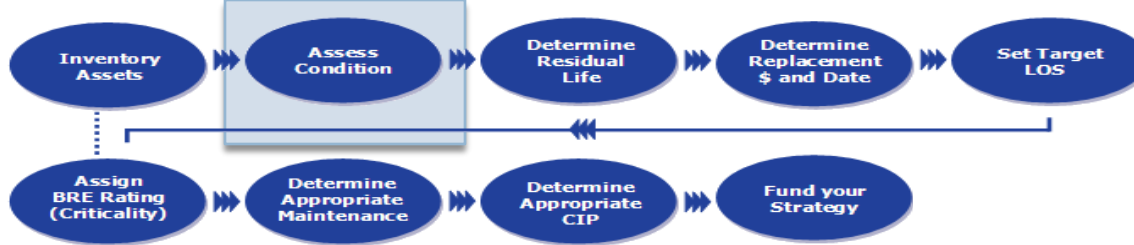
Describe any work done & Materials Used: _____

Sewer Service Line Needs to be Added to Hansen: Diameter: _____

Address: _____ Location Info: _____

Picture ID's: _____ Materials Used: _____





PM Work Orders for Group Project #: 15202

Run Date: 12/14/2007

FLUSH CLEAN 3 MONTHS CLEAN SEWER MAINS EVERY 3 MONTHS

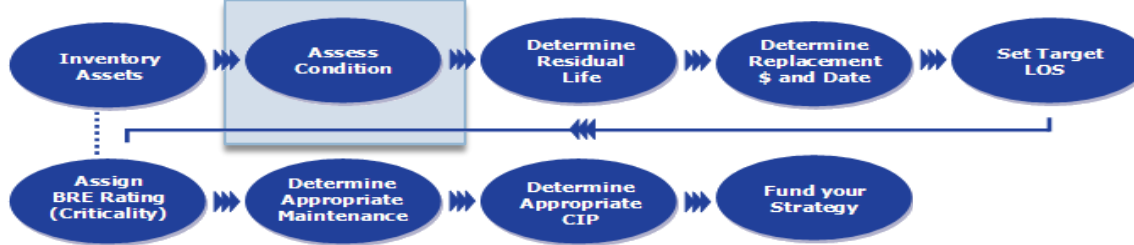
PMWO # 205933 **DOWN:** HH2720MH001 **UP:** HH2720C001 **3785 CLEVELAND AVE** Length: 111 Dia: 6
Special Instructions: MH IN NY DP-THRU WEDY, Tam

Comments SMN WO / SMH INSP:

Surface Ponding <input type="checkbox"/>	Surcharge Evidence	Depth	_____		Debris/Silt	Depth		_____	
NOTE NO. 4 - STANDARD MATERIALS									
SLIGHT - GAL/TIN									
1 < 1	1-2	2 > 2							

Completion Info: Condition: _____ Date: _____ Time: _____ Crew: _____ Vehicle: _____





H2OMAP Sewer GIS - [C:\Documents and Settings\ldg\My Documents\Sewer_Model\Sewer_Model_Jan_2006]

File Create Edit View Exchange Scenario Tools Utilities Window Help

ALL-SR, santa rosa and oakmont

Attribute Browser -- Node

MANHOLE: I717M67, I717M67

(ID) I717M67

Description I717M67

Geometry

X 6346581.199675920

Y 1923227.674471440

Modeling

Diameter 5.00

Rim Elevation 118.97

Headloss Coef.

Load1

Type1 0: Unpeakable Flow

Pattern1

Coverage1 0.00

Load2 0.00

Load3 0.00

Load4 0.00

Load5 0.00

Load6

Load7

Load8

Load9

Load10

Information

Type 0: Loading

Elevation 0.00

Installation Year 0

Retirement Year 0

Zone

FLOW_SPLIT

BASIN_ID 160

HASE 0

Output

Use Flow 0.00 mgd

Initial Flow 0.00 mgd

Normal Flow 0.00 mgd

Grade 99.34 ft

Status Not Full

Hydraulic Jump Yes

Filled Depth 19.63 ft

Pipe Loading Manhole

Rim Elevation 118.97 ft

Code Link

931539.11 Snap Grid

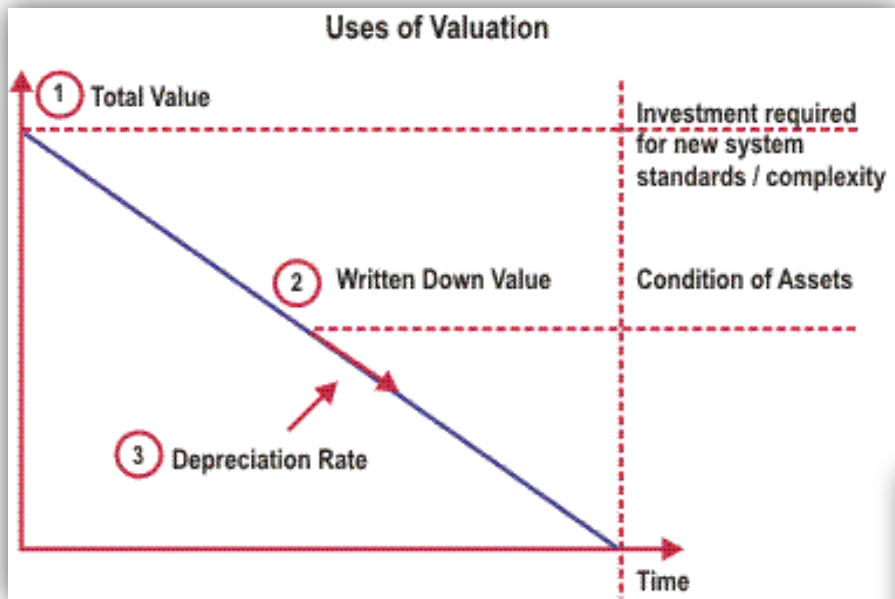
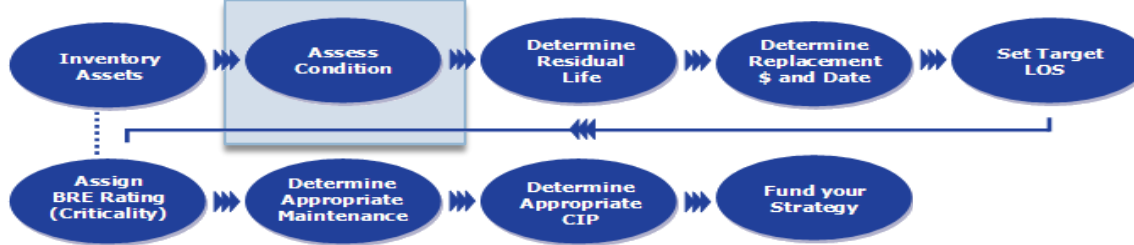
Curve

ID	Description
ACURVE1	Steady State Analysis Curve
DCURVE1	Steady State Design Analysis Curve
LS1	FOUNTAIN GROVE LS
LS11	WEST COLLEGE LS
LS12	MOWHAWK LS
LS17	OAKMONT LS

	X	Y
1	0.00	0.00
2	2.90	20.59
3	9.30	266.99

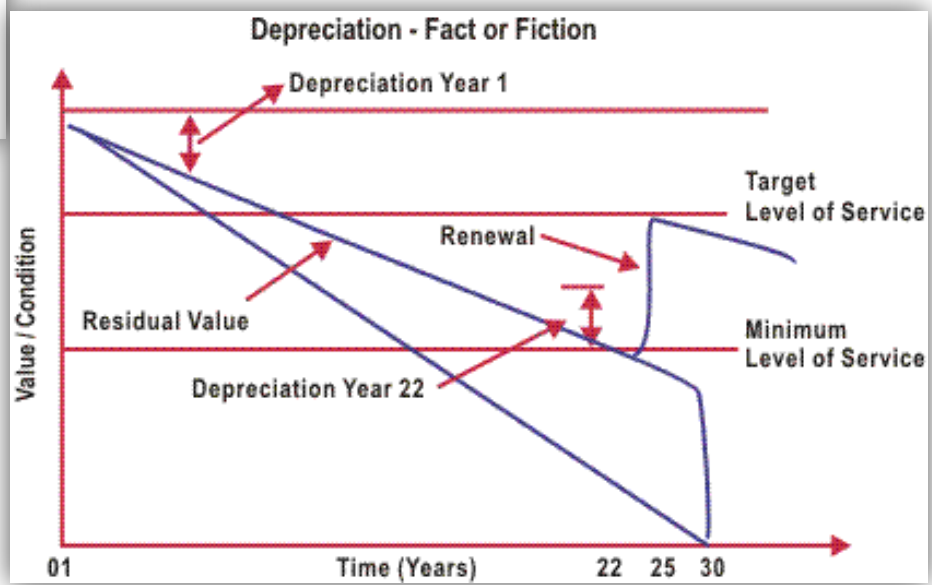
Flow Profile

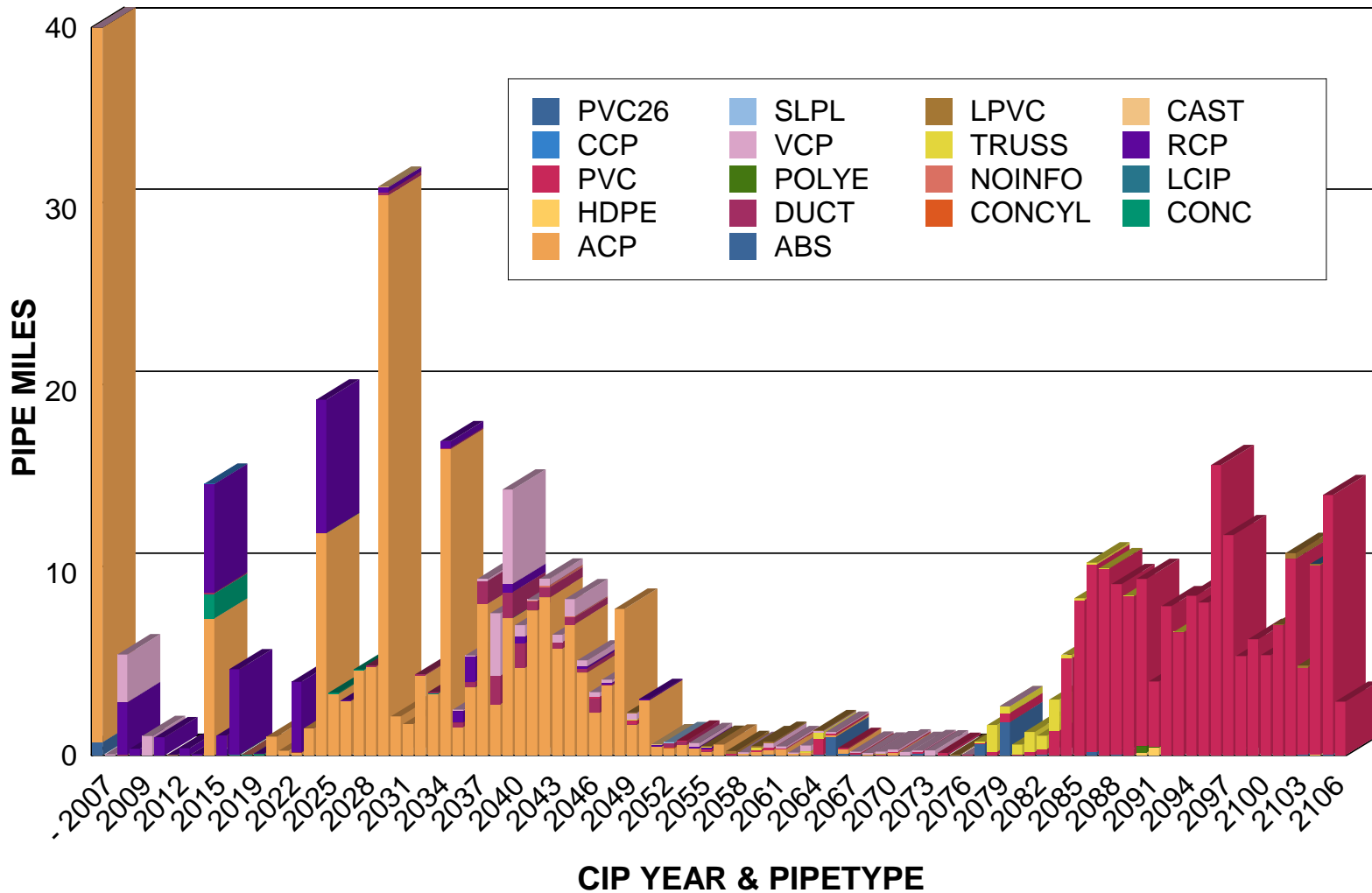
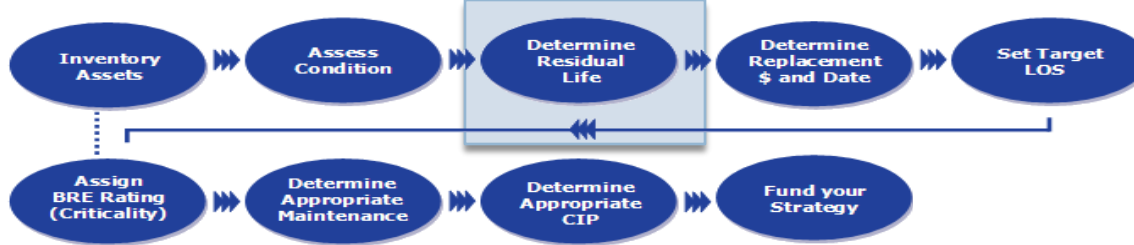
Pipe Profile @ 0:00



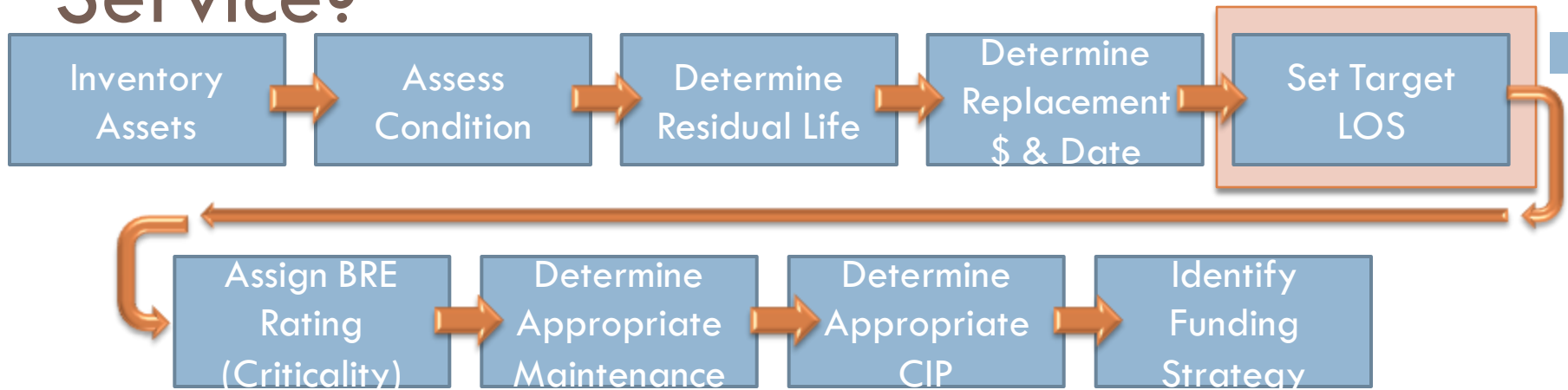
Coordination/Communication with Finance

Depreciation Methods and uses of Financial Data



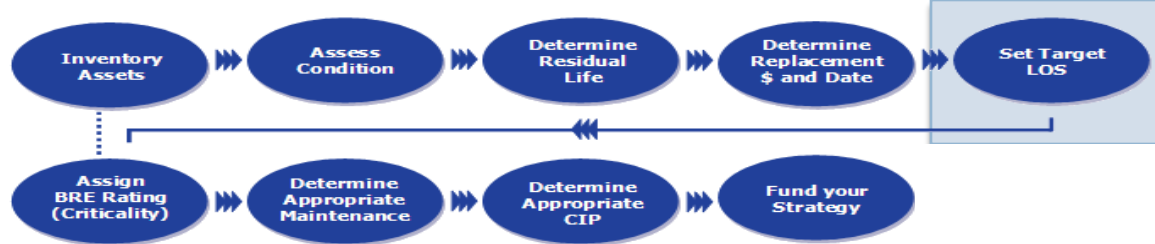


What is my required sustained Level of Service?

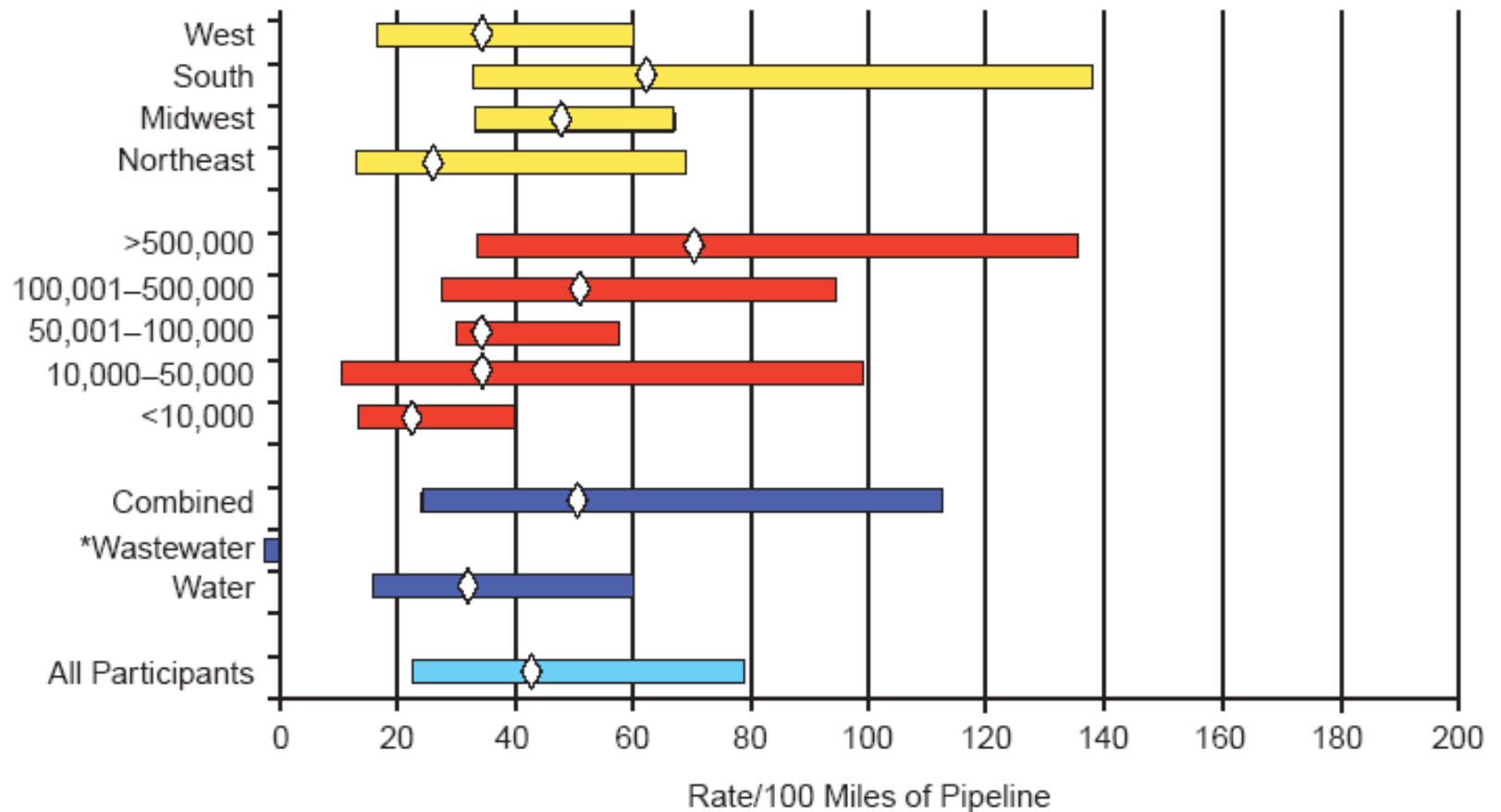


What is the demand for my services from my stakeholders?
What do regulators require?
What is my actual performance?

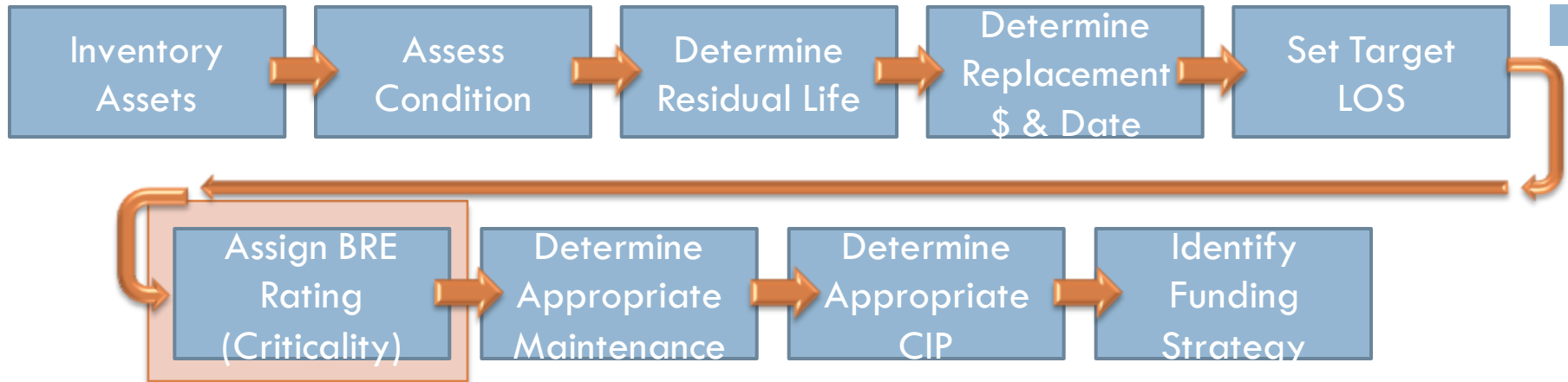
Customer demand analysis
Regulatory requirements analysis
Level of service statements; LOS "roll-up" hierarchy
"Balanced scorecard"
Asset functionality statements
AM Charter



**Water Distribution System Integrity
(Median Range, 25th–75th Percentile)**



Which of my assets are critical for sustained performance?



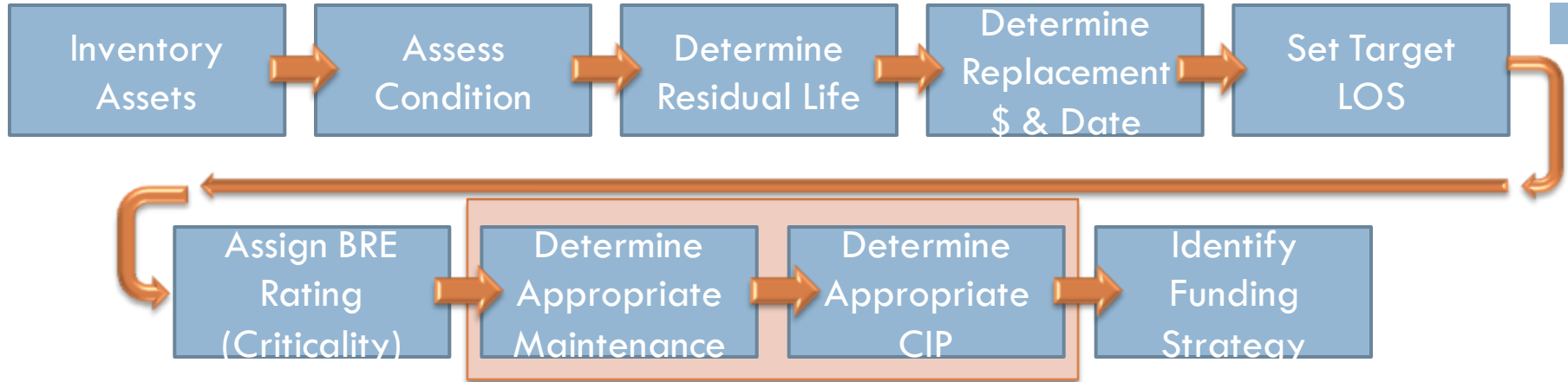
How do my assets fail? How can they fail?
What is the likelihood of failure?
What does it cost to repair?
What are the consequences of failure?

Failure analysis
Risk / consequence analysis
Asset list by criticality code
Failure codes
Probability of failure
Business risk exposure
Asset functionality statements
Asset "decay curves"
Asset unit-level management plans and guidelines
Asset knowledge



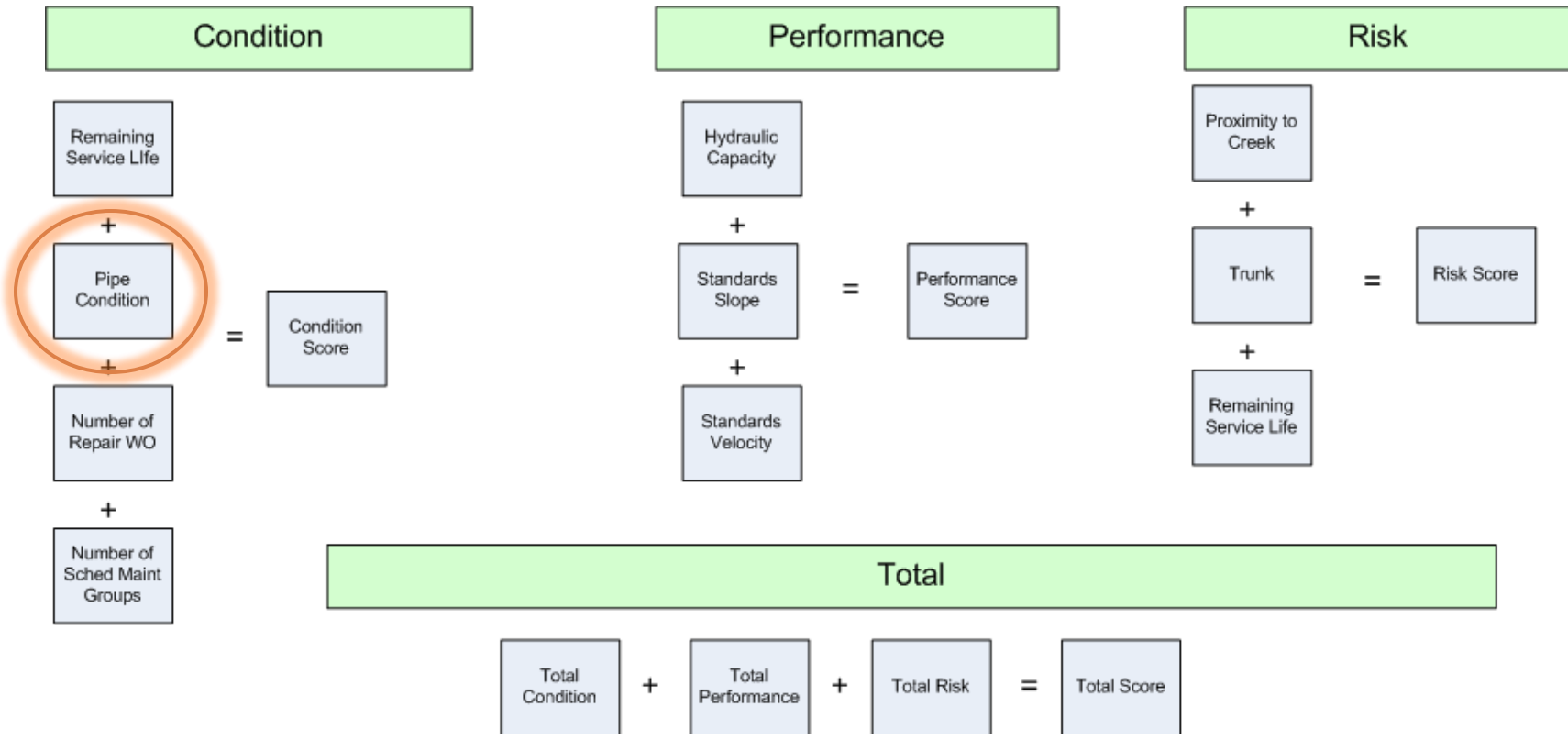
Triple Bottom Line

What are my best minimum lifecycle cost CIP and O&M strategies?



What alternative management options are there?
Which are most feasible for my organization?

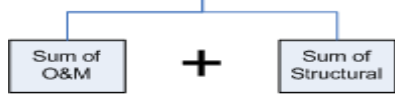
Optimized renewal decision making
Life-cycle costing
CIP development and validation
Condition-based monitoring plans and deployment
Failure response plans
Capital "cost compression" strategies
Operating "cost compression" strategies



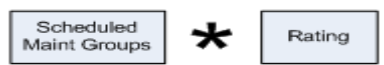


Pipe Condition Sanitary Sewers

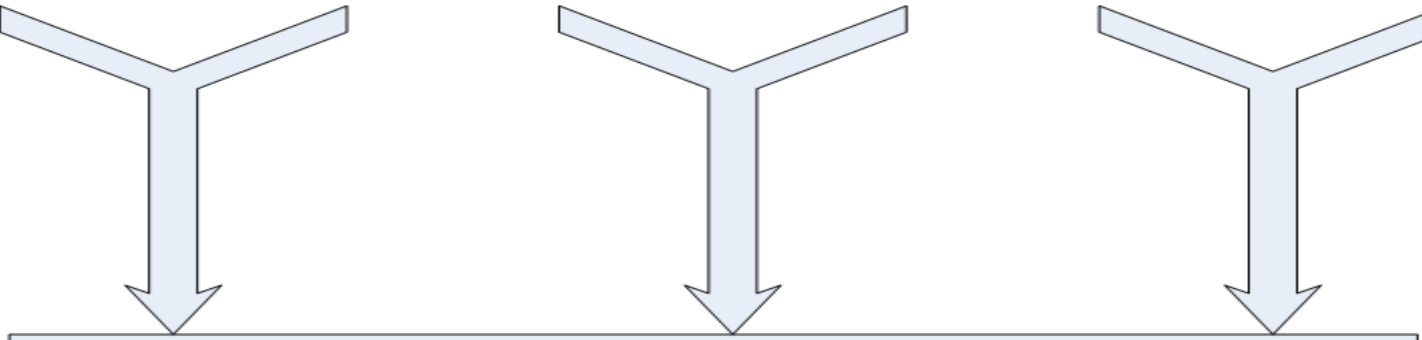
CCTV Inspection



Scheduled Maintenance
Frequency



Repair Work Order
History



TOTAL PIPE SCORE

Pipe Rating	Score
< 5	1
5 - 15	2
15 - 25	3
25 - 40	4
>40	5

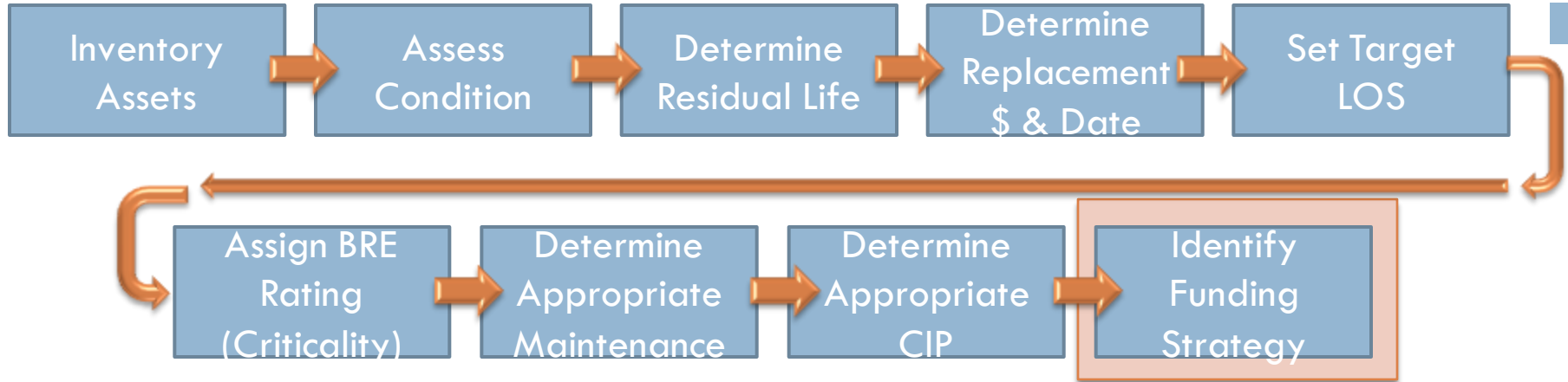
Cleaning Schedules	Rating
1 Year	1
9 month	2
6 month	3
3 month	4
Monthly	5

Rodding Schedules	Rating
1 Year	3
6 month	4
3 month	5

Repair History	Rating
Unscheduled	2
Corrective	3
Emergency	3

Pipe Failures	Score
Deterioration	5
Construction	5

What is my best long-term funding strategy?



What alternative management options are there?
Which are most feasible for my organization?

Over-arching financial impact analysis
Optimized financial strategy
Total Asset Management Plan
Telling the story with confidence

Current Issues

- Practice vs Policies
 - Reliance on interest level
 - level service/expectations
 - Unknown Consequences
- Lack of Structure
 - Duplicate Data Requests/Responses
 - Citywide coordination
- Sharing of resources/knowledge between sections
- Citywide impacts

What's Next

- Develop Department Wide Asset Management Structure
 - Personnel
 - Responsibilities
 - Point of contacts
- Organize a Regular Asset Management Coordination Meeting
 - Representatives from each section
 - Scheduled “examples of what works”
 - Focus on Geysers lessons learned over the next 3 months
- Develop Department Wide Asset Management Policies
 - Assist old and new managers on accepted practices and procedures
- Play an active role in Citywide & Industry efforts



Questions / Discussion