Asset Management Principles

BPU Study Session
March 3, 2016
Outline

• What is an Asset?
• Water Department Assets
• Why Asset Management?
• What is Asset Management?
• How do we get from Asset Management to Project Development?
• Questions
What is an Asset?

asset—noun
1. a useful or valuable thing, person, or quality
Water Department’s Biggest Asset
Subregional System Assets

- LTP
- Reclamation
- Geysers
- Biosolids
Local Water Assets

- 619 Miles of Water Main
- 28,824 Water Valves
- 6,299 Hydrants
- 23 Reservoirs
- 20 Pump Stations
Local Sewer Assets

- 591 Miles of Sewer Main
- 17 Sewer Lift stations
- 12,216 Sewer Manholes
Increasing Challenges

- Regulatory compliance
- Aging assets
- Customer demands
- Security
- Financial constraints
- Loss of institutional knowledge
- Climate change
- Emergency response
- Resiliency / how quickly we recover
Why Asset Management?

- No Surprises
- Right Decisions
- Right Time
Why Asset Management?

• What work should our operations and maintenance crews be doing, where, and why?

• Which projects to undertake, when, and why?

• When to repair, when to refurbish, and when to replace?

• To give our customers the best value
What is Asset Management?

- Not software
- Management Commitment
- Long Term Financial plan
- Project Development
- Based on life cycle of assets
Comprehensive Asset Management

Level of service

Cost of Service

Risk
How do we get from AM to Project Development?

- Comprehensive Asset Management
  - Data
  - Standardized Criteria
- Leads To Data Driven Decisions
  - Project Development
  - 5 Year CIP Program
  - O&M Budgets
Standardized Criteria

- Regulatory Requirements
- Legal Mandates
- Condition Assessment
- Operations Maintenance History
- General Plan and Master Plans
- Public Input
- Street Overlays
- Proximity to Other Assets
# Asset Scoring Process

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>PERFORMANCE</th>
<th>RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Remaining Service Life</td>
<td>• Hydraulic Capacity</td>
<td>• Seismic Activity</td>
</tr>
<tr>
<td>• CCTV-Pipe Condition</td>
<td>• Flush Score</td>
<td>• Fire Flow Deficiencies</td>
</tr>
<tr>
<td>• Number of repair work orders</td>
<td>• Slope</td>
<td>• Creeks</td>
</tr>
<tr>
<td>• Number of schedule maint</td>
<td></td>
<td>• Hwy Right of Way</td>
</tr>
<tr>
<td></td>
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<td>• RR XINGS</td>
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</tbody>
</table>
Asset Scoring Process

CONDITION + PERFORMANCE + RISK = TOTAL SCORE
Condition Assessment

- CCTV allows us to assess condition of sewer pipes.
- Allows us to identify deteriorated pipes that need replacement.
### Residual Life

#### Remaining Service Life

**Sanitary Sewers**

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Description</th>
<th>Estimated Service Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVC</td>
<td>POLYVINYL CHLORIDE</td>
<td>100</td>
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<tr>
<td>PE</td>
<td>POLYETHYLENE</td>
<td>100</td>
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<tr>
<td>DIP</td>
<td>DUCTILE IRON PIPE</td>
<td>80</td>
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<tr>
<td>AC</td>
<td>ASBESTOS CEMENT</td>
<td>65</td>
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<tr>
<td>CAS</td>
<td>CAST IRON</td>
<td>75</td>
</tr>
</tbody>
</table>
Project Development Process

1. Review Master Plans
2. Update asset scores
3. Assess risks
4. Establish new scores
5. Rank priorities
6. Reality check
7. Develop CIP based on funding
Sewer System by Material
Sewer System Scheduled Maintenance
LTP Project Development

- Largely Driven by Regulatory Requirements
- Risk
  - Seismic
  - Flood
- Planning Tool
  - O&M asset analysis
  - 2-20 year life cycle
- Master Plan under Development
  - CIP 20-50 year horizon