



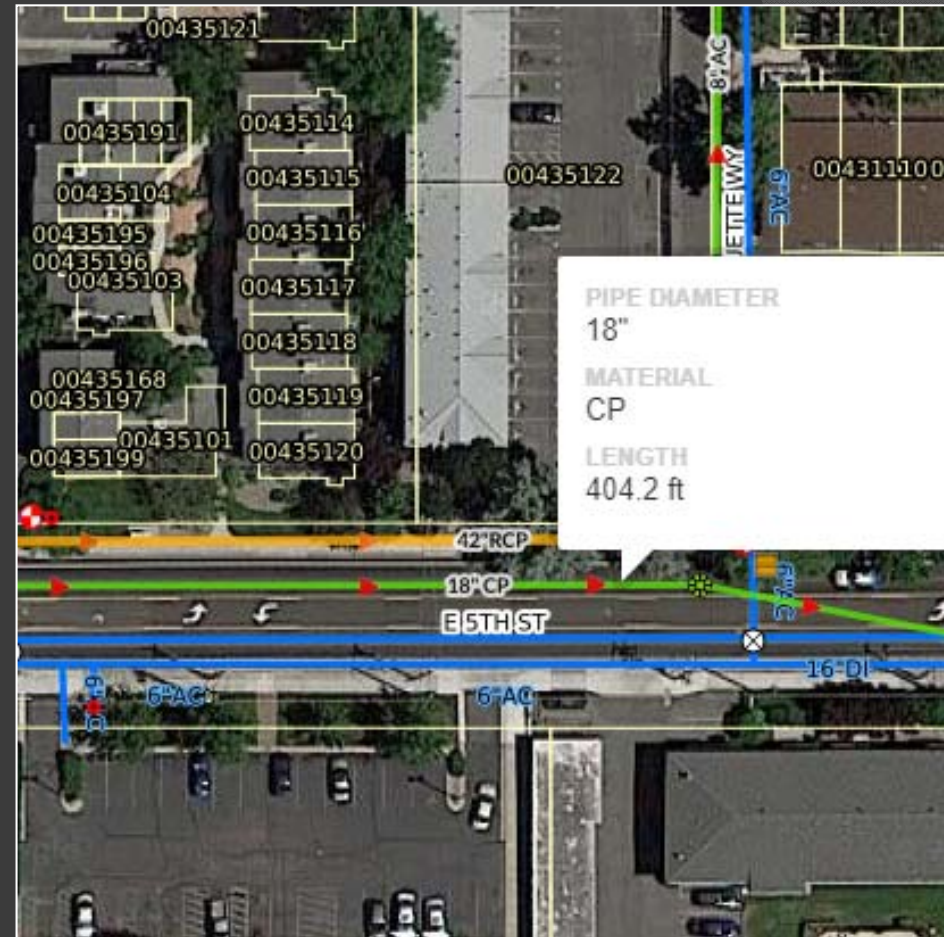
# Asset Management Decision Points Review

January 24, 2019



# Asset Management Cycle

## Asset Inventory



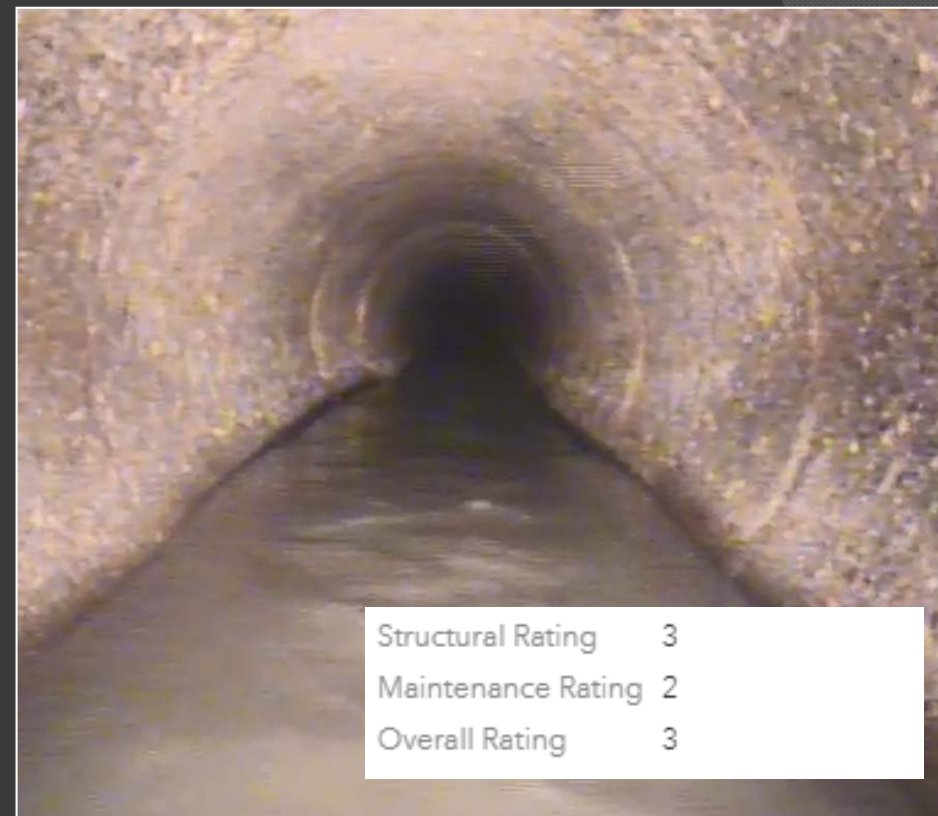
Asset ID: SS.GM.00489



# Asset Management Cycle



## Condition Assessment



Asset ID: SS.GM.00489



# Asset Management Cycle



## Maintenance

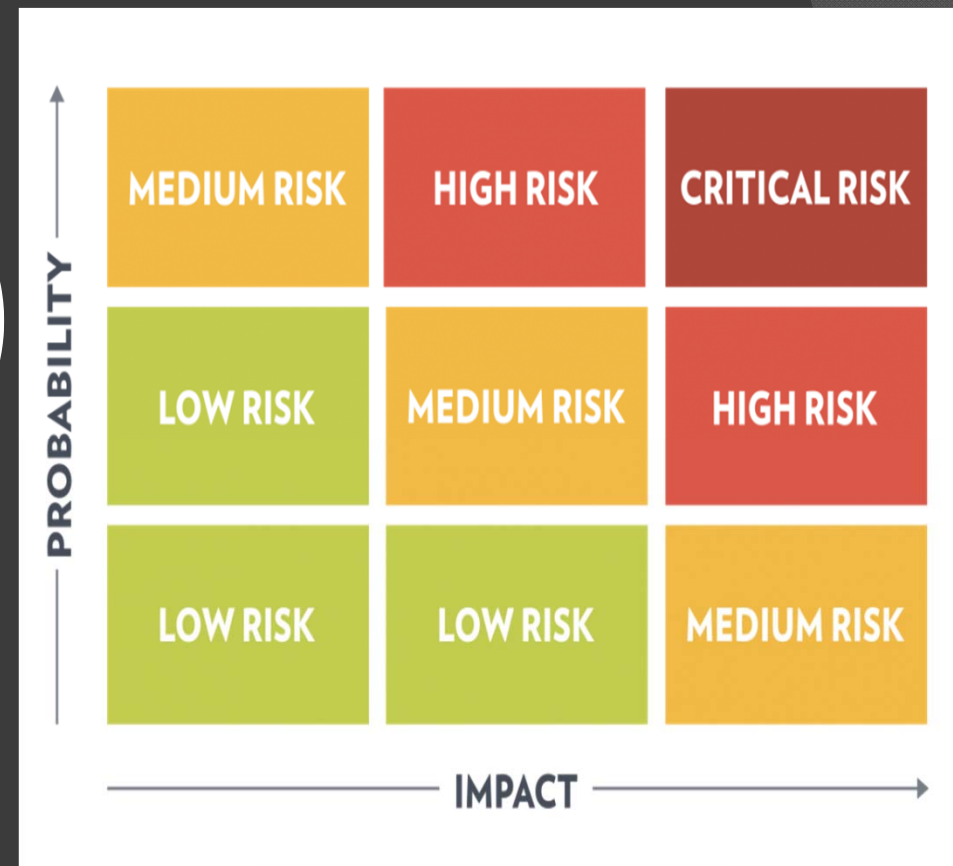


Asset ID: SS.GM.00489



# Asset Management Cycle

## Capital Improvement Planning



Asset ID: SS.GM.00489



# Asset Management Cycle

Reporting



Asset ID: SS.GM.00489

# Benefits of Asset Management



- Minimizing risk to the City and its residents
- Maximizing the effective useful life of City assets
- Optimizing customer service
- Promoting data driven decisions
- Increasing transparency

# What is Asset Management?



## Fire Hydrant A

## Fire Hydrant B

|                                  |   |   |
|----------------------------------|---|---|
| Cost Brand New                   | \$7,500   | \$7,500   |
| Preventative Maintenance         | <ul style="list-style-type: none"><li>• Annual Inspection</li><li>• Annual Valve Exercise</li><li>• Repaint (4 yrs)</li></ul> | NONE  |
| Expected Lifespan                | 50 years  | 20 years  |
| Replacement cost (over 50 years) | \$2,100   | \$18,750  |
| Risk to Public Safety            |   |  |





# Infrastructure Asset Management



- Fire Hydrant
- Booster Station
- Check Valve
- Flow Meter
- Flushout
- Water Meter
- Vault
- Air Release Valve
- Pressure Reducing Valve
- Pipe
- Tank
- Well
- Treatment Plant



# What is going on with AM

- Update on what we are doing
- What we want to do
- How can we do it faster?



# What we are doing...

- Manhole condition assessment
  - Being done by an intern – 15 hours per week
  - 1,000 surveyed out of 4,000 over last year (25%)
  - Estimated completion: 4 years
  - Benefit: 4 manholes already identified as deficient; to be replaced by developer
    - **SAVED CITY \$40,000**



# What we are doing...

- Sewer CCTV condition assessment
  - Using contractor
  - 16 out of 237 miles surveyed over last year
  - Estimated completion: 15 years



# What we are doing...

## ● Sidewalk Inventory

- Two interns over six weeks in Summer 2018
- 23 miles of sidewalk collected (20% of City)
- Arterial and collector streets only
- Will allow integration in work order system
- Better tracking of ADA improvements



# What we are doing...

- Streetlight and signal inventory
  - Needed for small cell leasing
  - 145 signal poles located
  - 167 City-owned streetlights located
  - Map viewer to be created for carriers to select leasable small cell locations



# What we are doing...

- Capital Planning Application Suite
  - Tracks proposed CIPs over multiple infrastructure areas
  - Better aligns project planning across divisions
  - Makes capital planning more effective
  - Increases transparency



# What we want to do...

## ● Asset Inventory:

- Stormwater (50% complete)
- Water Meters (20% complete)
- Signs
- Pavement Markings
- Sidewalk
- ADA Ramps
- Communications and electrical conduit
- Right-of-way mapping





# What we want to do...

- ◎ Condition Assessment:
  - Sewer System (continue with manholes and CCTV)
  - Water System
  - Stormwater System
  - Reclaimed System
  - Transportation System
    - Integrate pavement condition index, pavement management system, and work order system
  - Facilities
    - Reserve Study
  - Parks



# What we want to do...

- Preventative Maintenance
  - Streamline inspection workflows
  - Utilize mobile apps (reduce paper)
  - Develop regular maintenance programs for all asset systems
  - Leverage a complete Asset Management solution for preventative maintenance scheduling and tracking through work orders



# What we want to do...

- Capital Improvement Planning
  - Evaluate likelihood and consequence of failure across all infrastructure systems
  - Identify criticality (risk-based assessment)
  - Align capital project management between all systems



# What we want to do...

## ● Reporting

- Use business intelligence solutions to create asset status and condition reports
- Provide relevant dashboards at all levels, from executive down to operator
- Create coherence between inventory, condition assessment, preventative maintenance, and capital planning



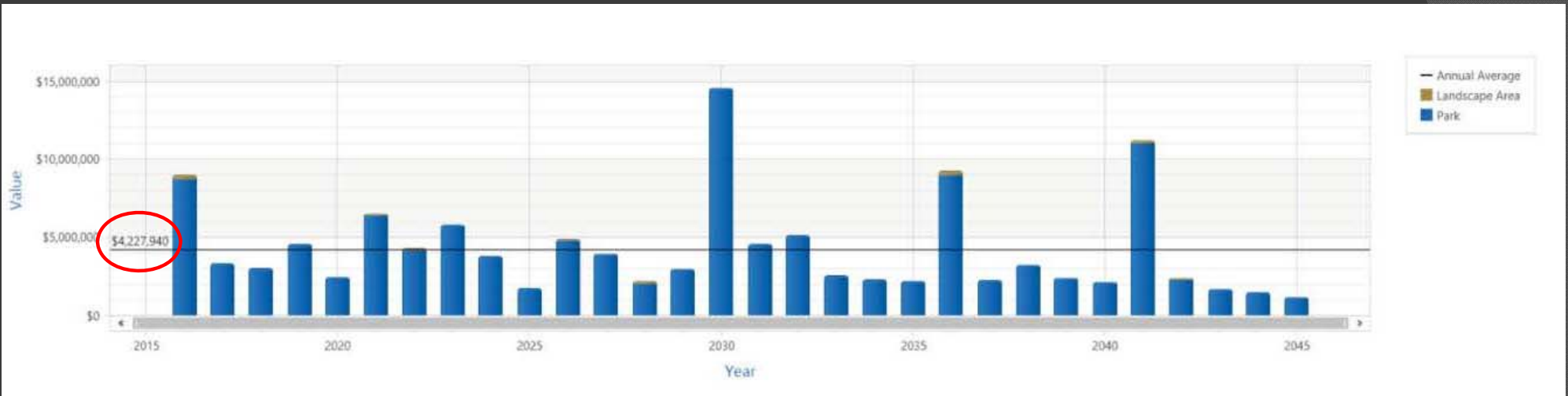
# What we want to do...

## ● Funding

- Collaborate with Finance and integrate with City's new ERP solution
- Leverage a committed software platform to support all phases of Asset Management
- Create capital forecasting models
- Make data-driven decisions



# Reserve Study/Capital Forecasting



- Estimates future financial needs for managing assets
  - Over a 20 to 30 year period
  - Includes replacements, rehabilitation, and maintenance
  - Provides the average annual need of the asset in order to create a reserve for the peak years



### Carson City Asset Management Program Implementation Timeline

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

**Asset Inventory** - Develop information on City asset inventories that will include all those assets the City is responsible for and utilize GIS as the core asset management technology.

**Condition Assessment** - Collect information on the condition of City assets and develop Asset Management plans for the maintenance and operation of City assets that will achieve sustainable service levels.

Asset Management will take on the following roles:

- Maintain inventory of assets
- Undertake condition assessments
- Take lead on capital planning with Engineering
- Long-term funding requirement projections
- A collaborative role with Operations to move towards formalized record keeping and transition to a more pro-active maintenance and inspection focus
- Foster collaboration between Engineering, Operations, Planning and Finance
- Implement technology as a key enabler of more effective and efficient means of conducting

**Capital Improvement Planning** - Capital planning for replacement, renewal or new infrastructure will include Asset Management principles related to LOS, full life-cycle costing (reserve study) and an understanding of the criticality of the asset and its sustainable service levels.

**Funding Mechanism Implementation** - Identify funding sources for long-range planning.

**CIP and Annual Budget Funding Process and Procedures** - Incorporate Asset Management principles into budgeting and CIP decision-making, so that decisions are based on critical asset needs, conditions, and levels of service.

**Maintenance** - Develop a maintenance and preservation policy for City assets that moves the City toward an operation that achieves sustainable and high levels of performance based on agreed upon service levels.

**Reporting** - Create Asset Management Master Plan and report on performance in relation to this plan in periodic asset status and condition reports.



# How can we do it faster?

## ◎ Budget

- Asset Management Program is funded out of GIS
  - Budget hasn't increased in over 7 years
  - We are funding Citywide GIS services AND enterprise Asset Management from the same budget that only supported GIS 3 years ago
  - We have also expanded GIS support and services
- Other funding sources (property tax, landfill, etc.)
  - Goes to General Fund CIP budget
  - Not funding the Asset Management Program
  - Reactive maintenance, not proactive





# How can we do it faster?

## ◎ Staff

- Asset Manager also functioning as GIS Manager (and GIS Specialist)
- Combined City staff time toward Asset Management is equivalent to ¼ FTE
- 44% of GIS contractor time going toward data maintenance of asset inventory and condition assessment
  - Doesn't allow for completion of special projects like stormwater inventory, ROW mapping, etc.



# How can we do it faster?

## FY 19/20 Needs

- 1 FTE GIS Position
- Reserve Study Funding
- Asset Management Consultant
  - Tyler EAM Integration
  - Migration away from current CMMS?

## FY 20/21 Needs

- 1 FTE Systems Analyst
- Asset Management Consultant
  - Capital Forecasting from Reserve Study
  - Continued support for software platform



# A Smart City is a Responsible City

- A *Smart City* is a municipality that uses information and communication technologies to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare.

## A strong asset management program is the key to a *Smart City*



- In the long term, investment in staff and budget will pay for itself because we will have the data to realize the savings.
  - CIP savings will justify program cost and we will be able to condense the timeline.
- It is not just intelligent decision making – it is responsibly making decisions to maintain infrastructure.



# Questions?

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