



Utilities Risk and Resiliency Plan



Why do we need this?

- Ensure long lasting infrastructure
- Maintain high level of service
- Minimize disruption
- Manage re-investment to reduce cost of ownership and risk



How do we do this?

- Asset management
 - Our plan to own and operate our infrastructure at the optimal life cycle cost
- Risk Assessment
 - Probability of failure (POF)
 - Consequence of failure (COF)
 - Risk = POF x COF

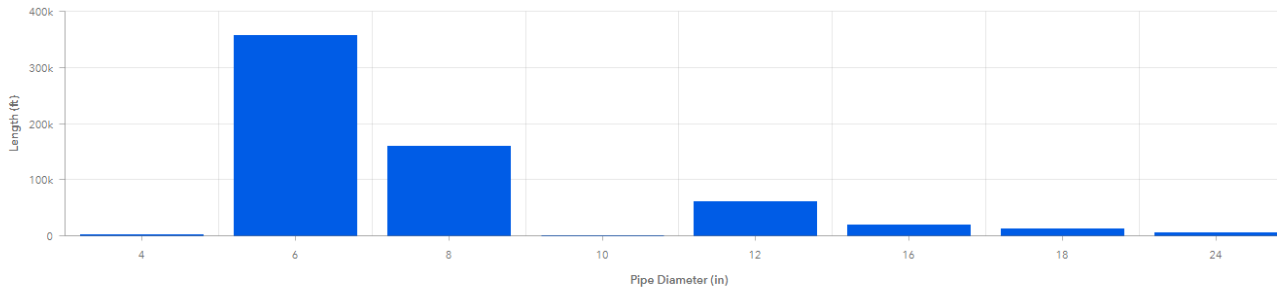
Water Distribution

Water Risk Model

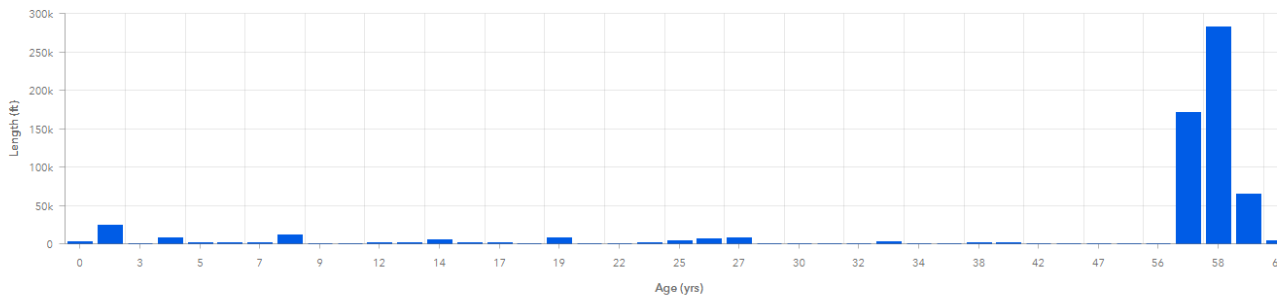
Risk Category: All



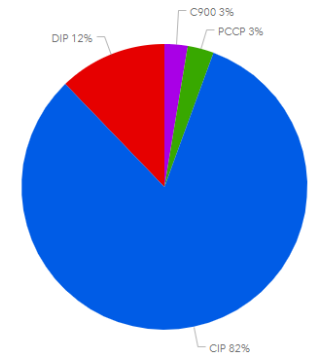
Pipe Diameter Distribution



Pipe Age Distribution



Water Pipe Material Distribution




Total Watermain
116 miles

Total Valves
2,685

Total Hydrants
1,094

Water Distribution – Strategy

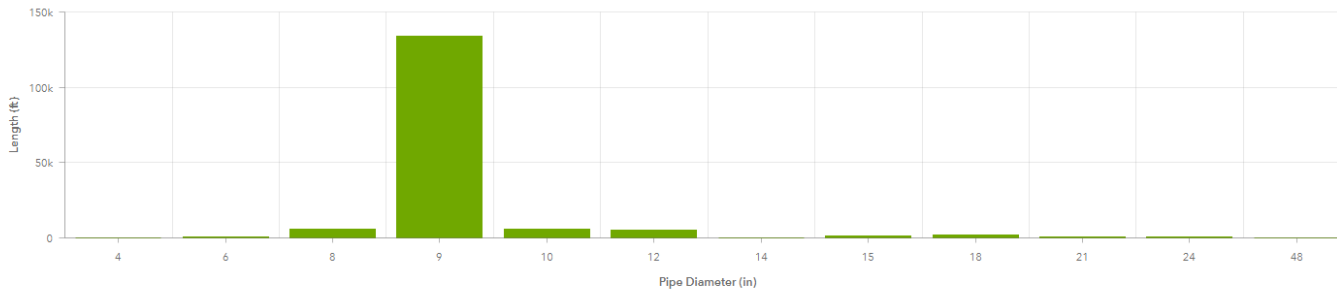
- Monitor high risk assets using acoustic testing (3% per year)
 - Results of acoustic testing will determine replacement schedule
 - Program high risk assets for replacement in CIP (0-5 years, 5-10 years)
 - Rehab or replacement
- 
- A decorative background illustration at the bottom of the slide. It features a light blue stream flowing from the left towards the center. A green path curves along the right side of the stream. In the foreground, there are several tall, thin reeds or grasses. The background is filled with soft, stylized green trees and a grey street lamp on the right side.

Wastewater

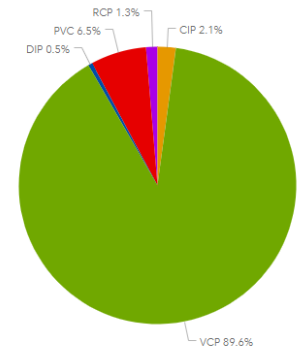
Sanitary Risk Model

Risk Category: All

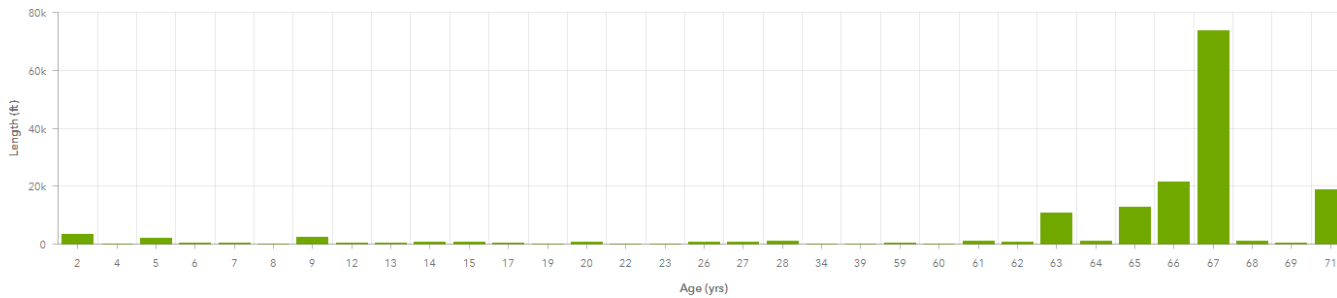
Diameter Distribution



Material Distribution



Age Distribution



Total Gravity Main

97 miles

Total Manholes

1,903

Total Lift Stations

9

Wastewater – Strategy

- Currently lining critical areas – based on desktop analysis (4% per year)
- Track maintenance costs vs. rehab costs to quantify positive impact

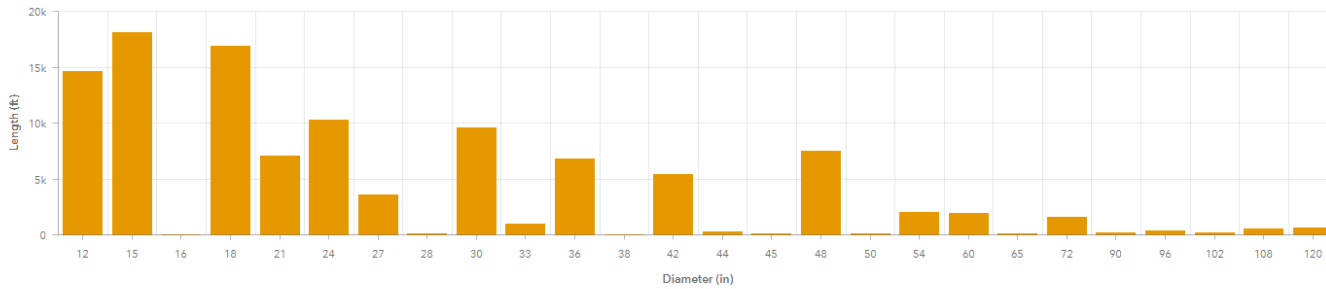


Stormwater

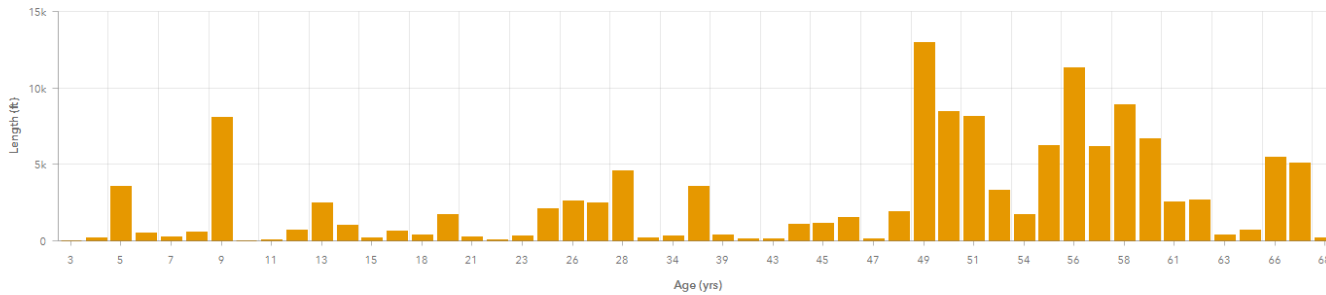
Storm Risk Model

Risk Category: All

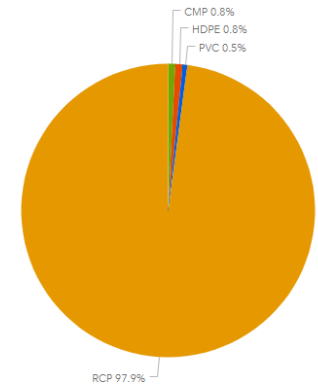
Diameter Distribution



Age Distribution



Material Distribution

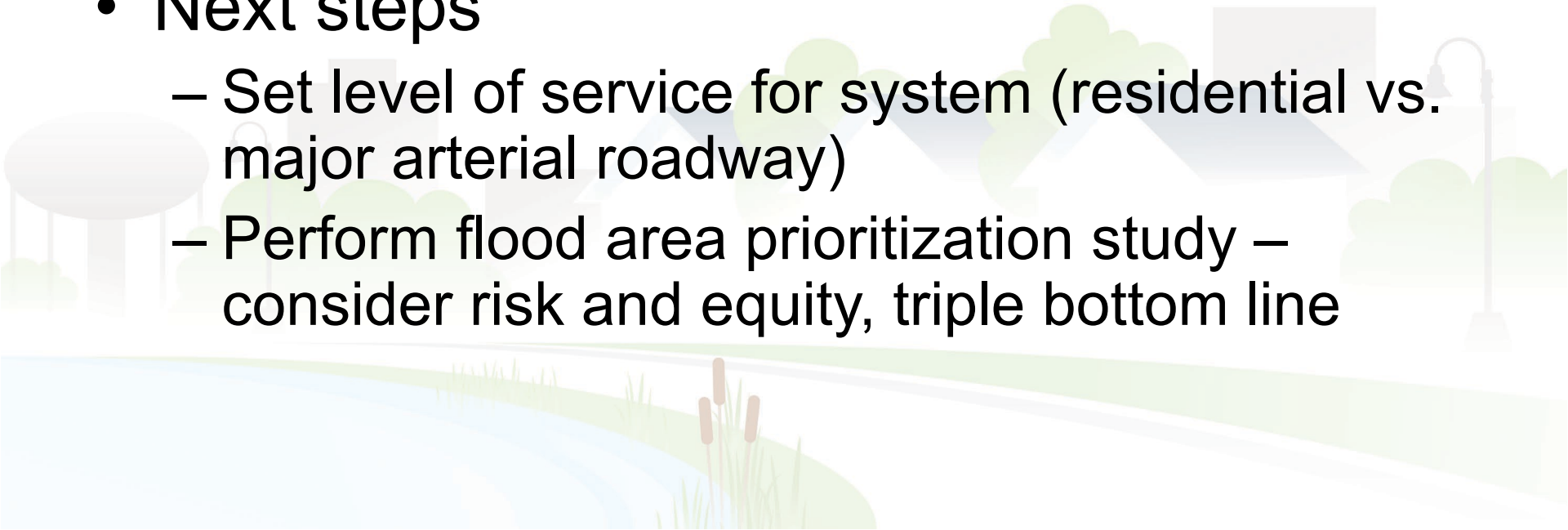


Total Storm Main
84 miles

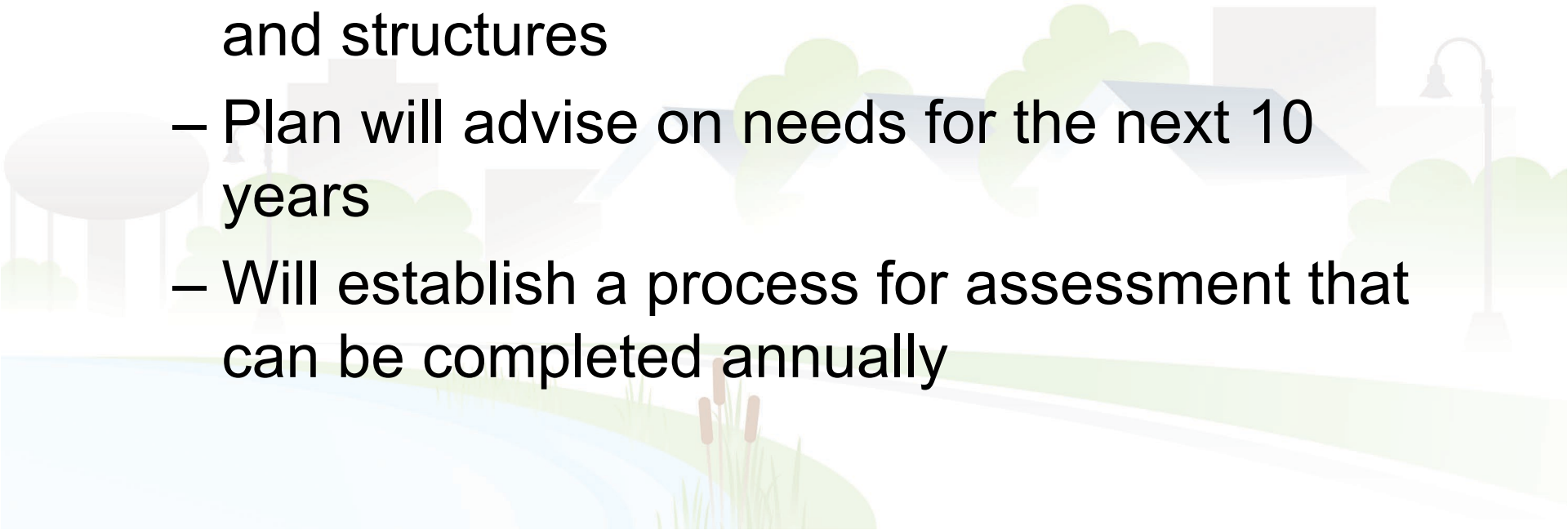
Total Manholes
2,533

Total Catch Basins
6,763

Stormwater – Strategy

- Continue to inspect pipes and manholes to determine structure integrity
 - Lining can be an option for areas not in need of capacity increase
 - Next steps
 - Set level of service for system (residential vs. major arterial roadway)
 - Perform flood area prioritization study – consider risk and equity, triple bottom line
- 
- A decorative background illustration at the bottom of the slide. It features a light blue stream flowing from the left towards the center. On the right bank of the stream, there are several tall, thin reeds or grasses. In the background, there are stylized green trees and a grey building with a white roof. A street lamp is visible on the right side, and a grey path or road runs across the scene.

Water Plant

- Originally constructed in 1964
 - Upgrades in 1994 and early 2000s
 - Wrapping up Facility Plan
 - Included condition assessment of equipment and structures
 - Plan will advise on needs for the next 10 years
 - Will establish a process for assessment that can be completed annually
- 

Future Challenges

- Funding
 - Currently funding through user fees
 - Rate Affordability
- Emerging Contaminants
 - PFAS
- Climate change





Questions?

