

The background of the slide is a light blue gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

MAKING YOUR BURIED ASSETS LAST: OPTIMIZATION OF BURIED INFRASTRUCTURE

**AMWA 2015 EXECUTIVE MANAGEMENT CONFERENCE
OCTOBER 13, 2015**

**JIM IRVIN, P.E. – DIRECTOR, HOWARD COUNTY PUBLIC WORKS
(MARYLAND)**

AGENDA



Background on Howard County

Howard County's Pipeline
Management Approach

Results and Benefits of of Program

Balancing Long-Term Strategies



BACKGROUND ON HOWARD COUNTY

Located
Between
Washington
DC and
Baltimore

Water
service since
1931

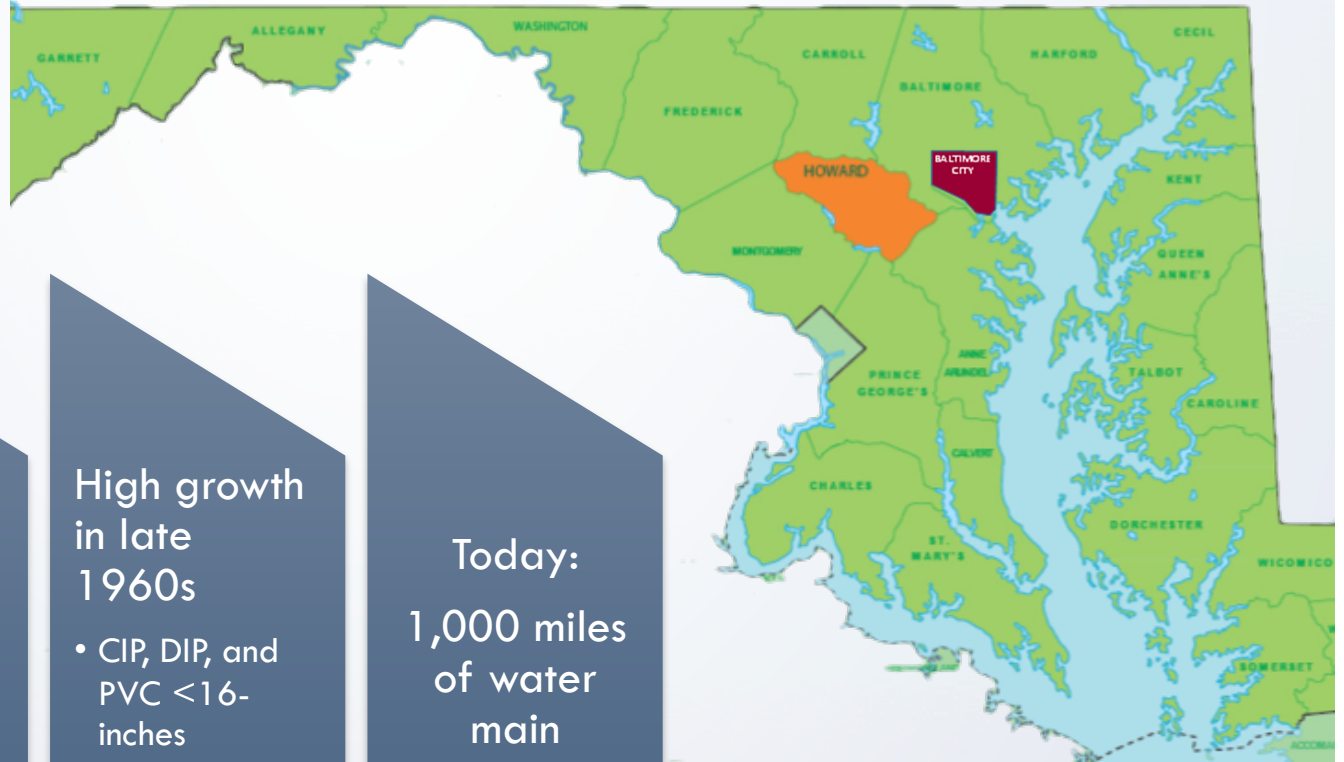
- Agreement with Baltimore City.
- Goal: relieve water shortages.
- Population of ~45,000

High growth
in late
1960s

- CIP, DIP, and PVC <16-inches
- DIP and PCCP ≥16-inches

Today:
1,000 miles
of water
main

Over
250,000
customers



HOWARD COUNTY & PIPELINE MANAGEMENT



Early Adopter Of Pipeline Management With Pccp Infrastructure

Founding Member Of Pccp Users Group In 1990

Currently Inspects, Repairs, And Acoustically Monitors Pccp Reliably And Economically

Pressure On Capital And Operational Budgets From Main Breaks Led To A Need For A Systematic Pipeline Management Program

GOALS OF PIPELINE MANAGEMENT PROGRAM



Systematic Risk Based Management Plan

Pilot Area Condition Assessment And
Engineering Project

Pilot Renewal Planning And Strategy Project

Budget Strategy And Projections

RISK AS A GUIDE

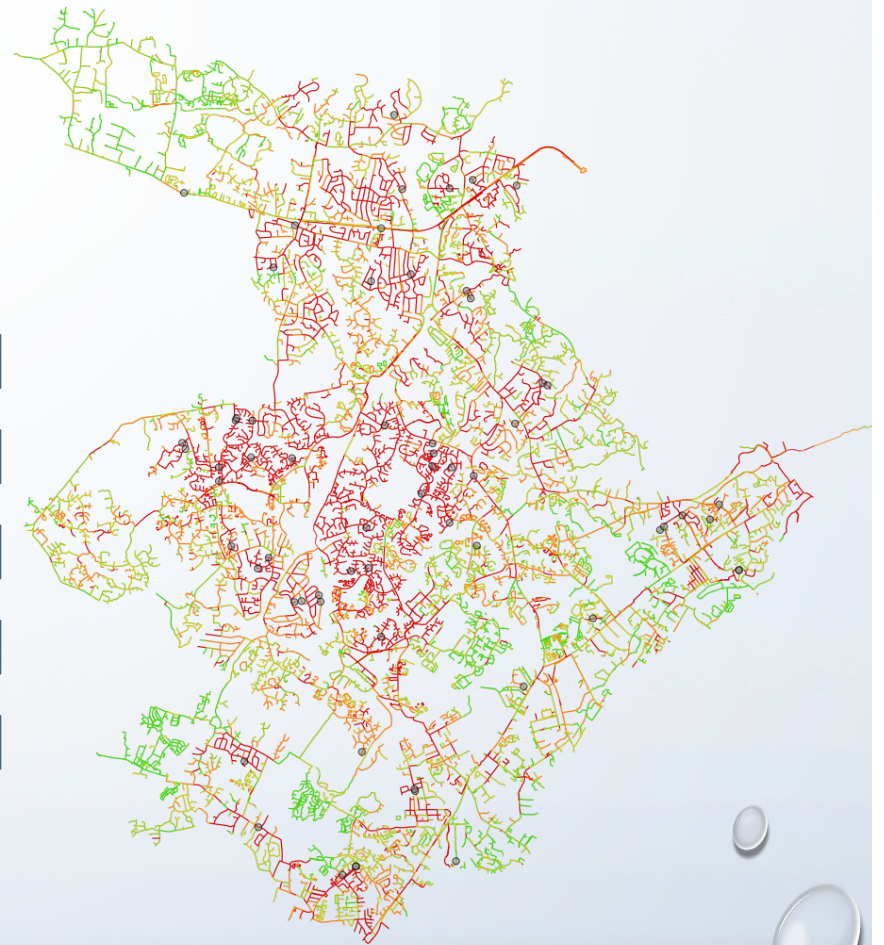
High Risk Often Driven Lack Of Or Bad Data

Desktop Risk Evaluations Conservative

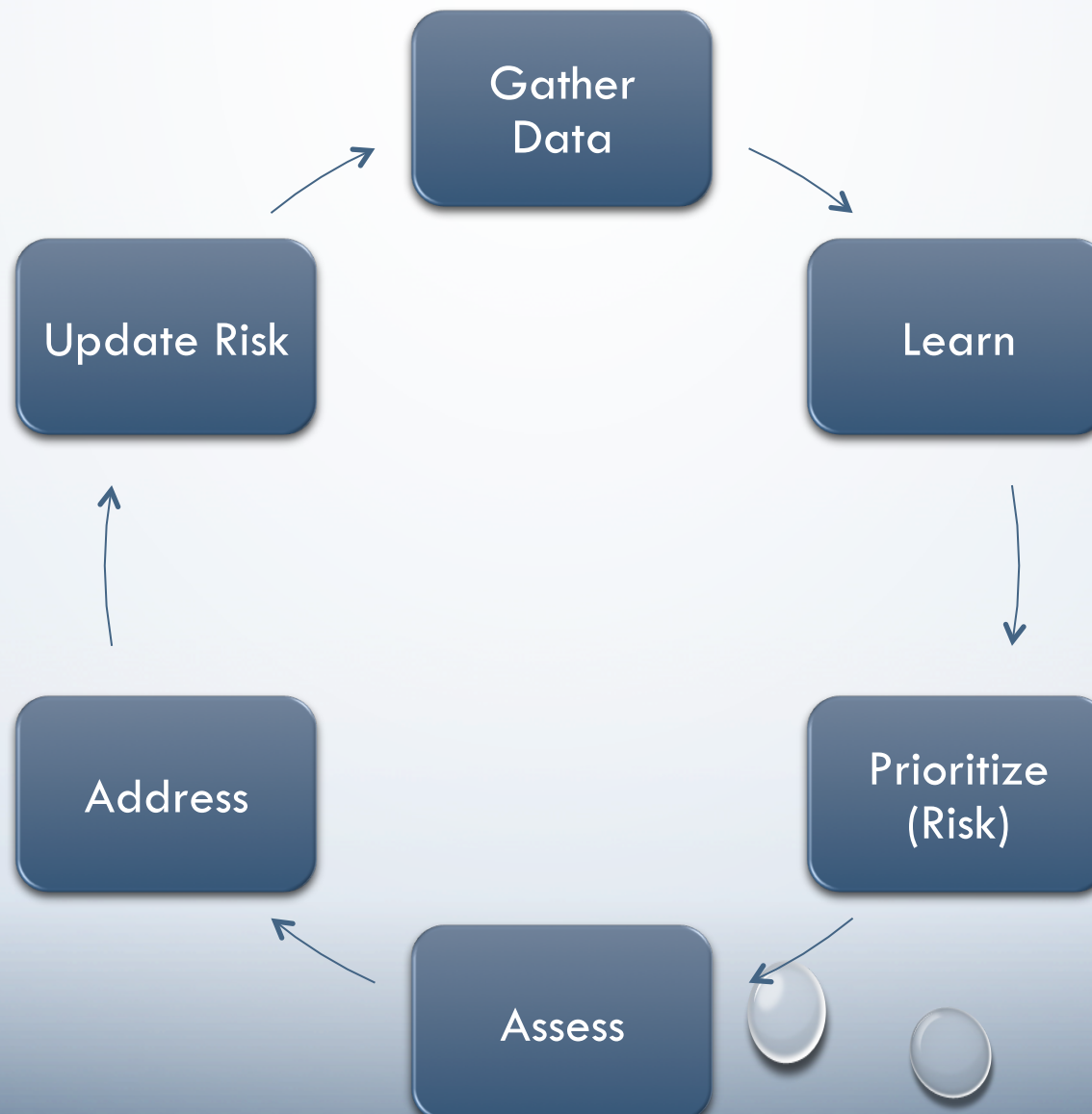
Confidence in data must be factored in

Risk prioritization to Drive assessment, Not Renewal

Approach Has Provided 50% To 95% In Renewal Spending



PIPELINE MANAGEMENT APPROACH



VALUE OF RISK GUIDING ASSESSMENT



Desktop Risk



Risk After Assessment

PIPELINE MANAGEMENT WORKING GROUP

Interaction between utilities is one of the best mechanisms for information-sharing, troubleshooting, and simply finding out what works and what doesn't.

GOAL OF WORKING GROUP:
Gain an industry-wide perspective on the management of distribution systems.

Howard County
DPW

City of
Anchorage

City of Aurora

Central Arizona
Project

Dallas Water

Gwinnett
County, GA

Homestake
Water Project

Region of Peel

WSSC

DC Water

City of
Baltimore

Harford County
DPW

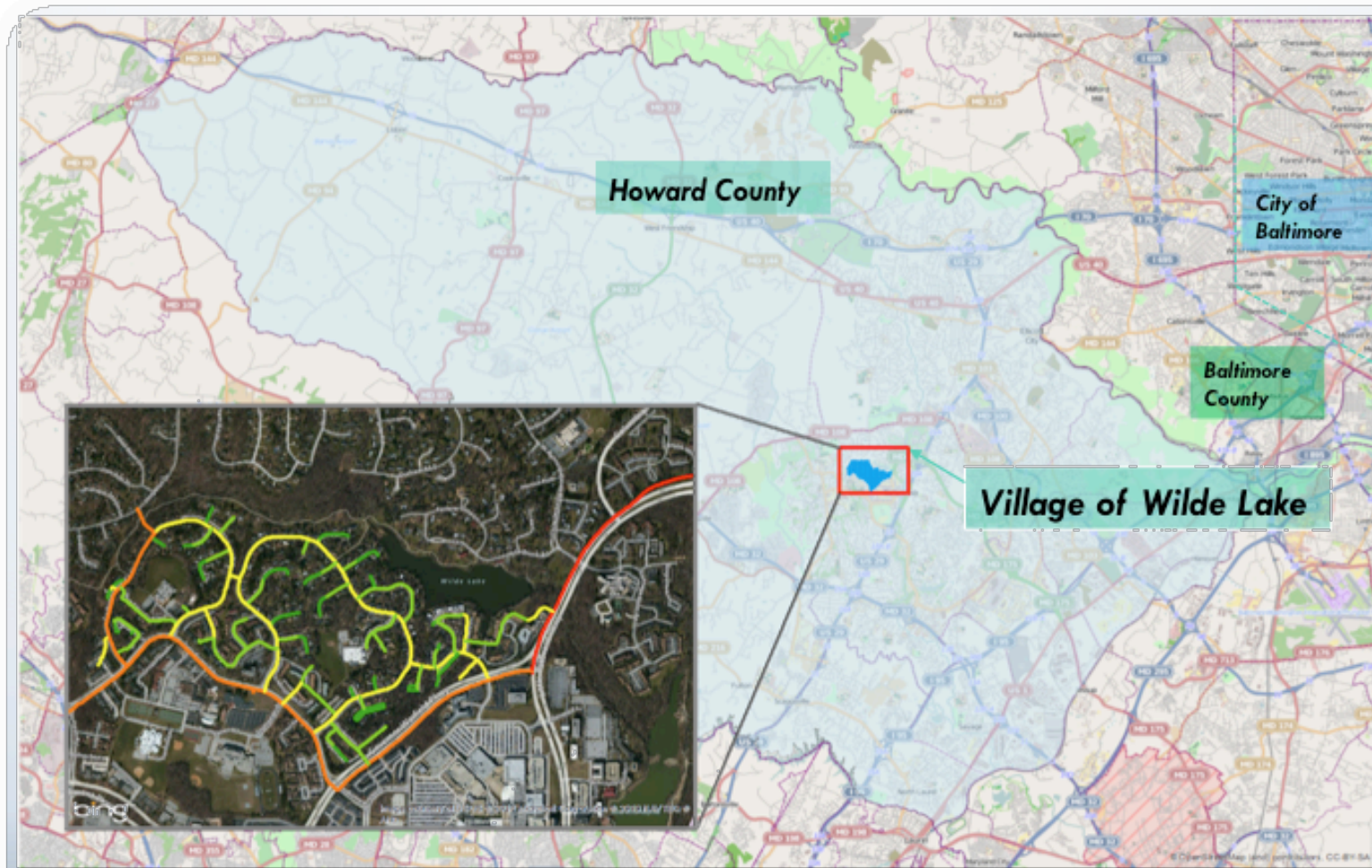
Loudoun Water

City of
Rockville

Tucson Water

City of Atlanta

ASSESS & ADDRESS PILOT



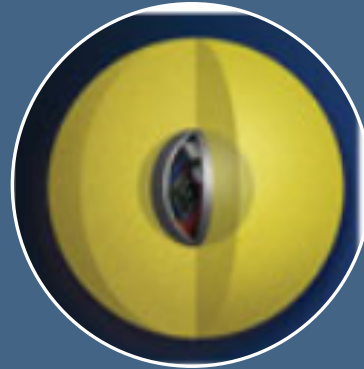
ASSESSMENT TECHNOLOGIES DEPLOYED



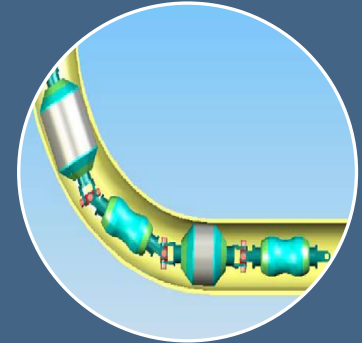
Transient Pressure
Monitoring



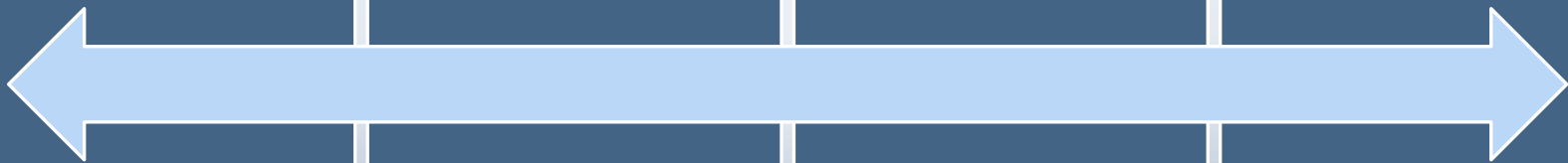
E-Pulse and
LeakFinderRT
Condition
Assessment & Leak
Detection
(Echologics, LLC)



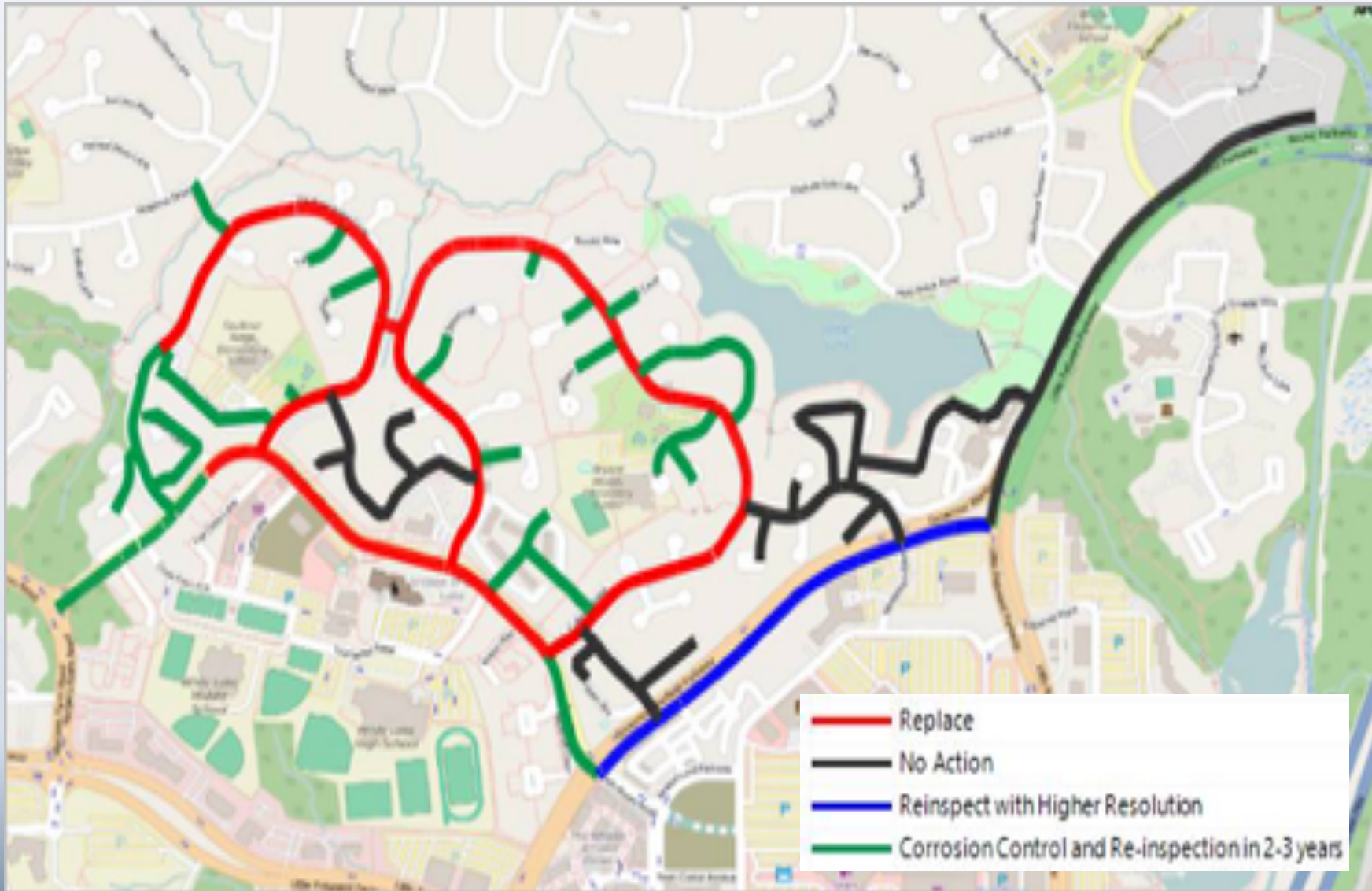
SmartBall and
Sahara Leak and
Gas Pocket
Detection and Pipe
Wall Assessment
(Pure Technologies)



Remote Field
Technology Wall
Thickness
Assessment
(PICA Corporation)



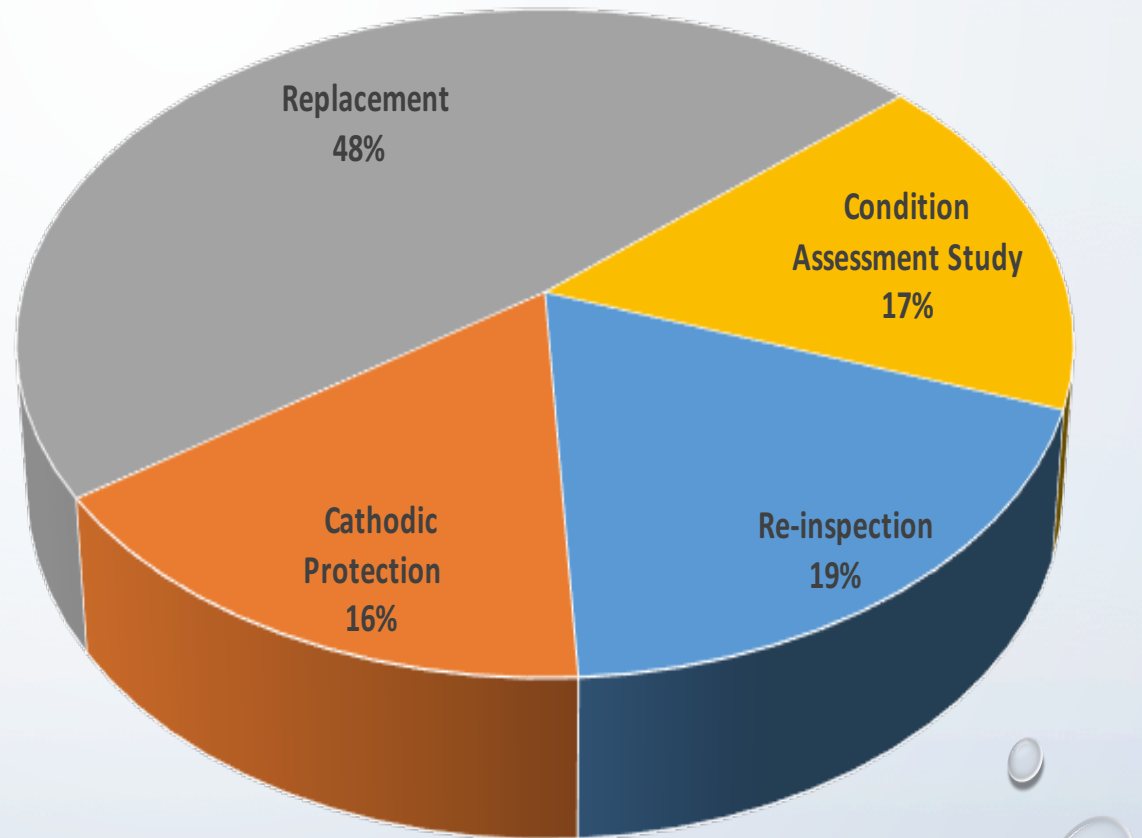
WILDE LAKE ASSESSMENT RECOMMENDATIONS



WILDE LAKE COST ANALYSIS

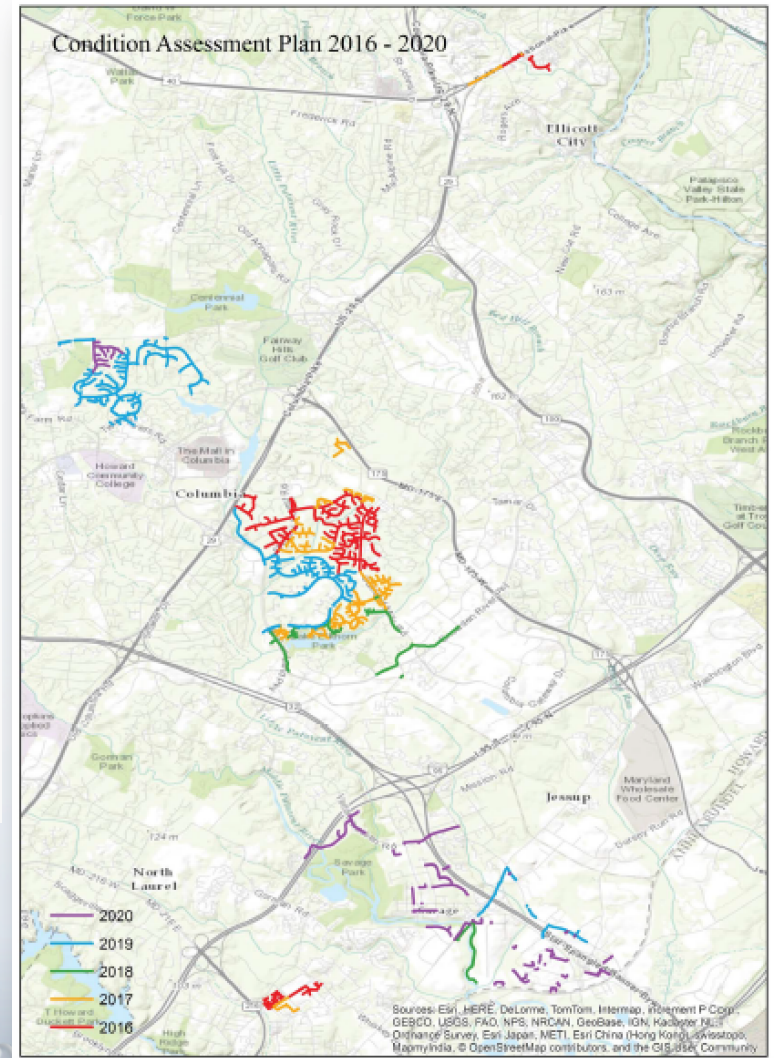
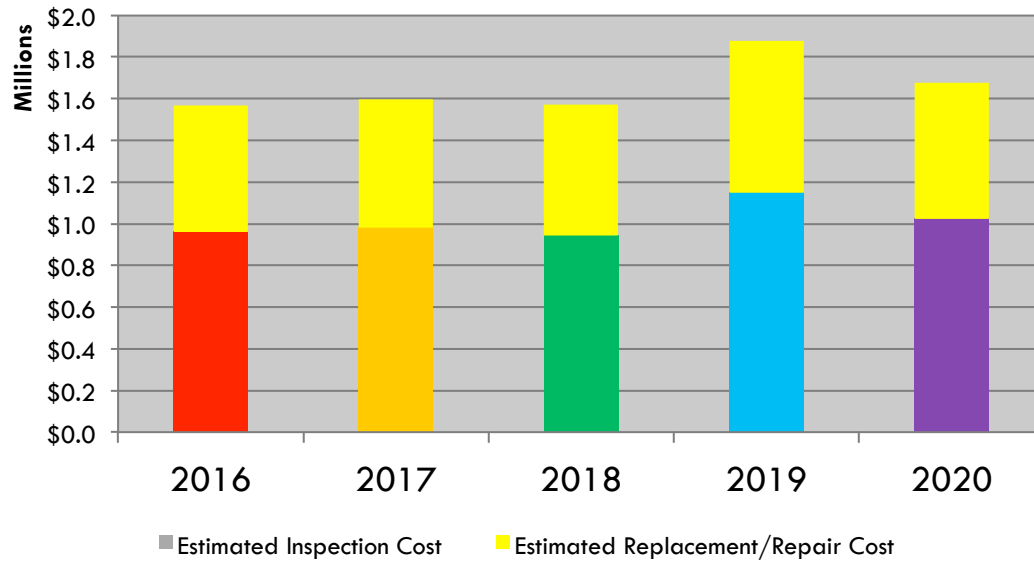
Cost Recommendations Based on PCA

Re-inspection	\$1,076,088
Cathodic Protection	\$931,230
Replacement	\$2,795,584
Sub-Total	\$4,802,902
Condition Assessment Study	\$988,192
TOTAL	\$5,791,094

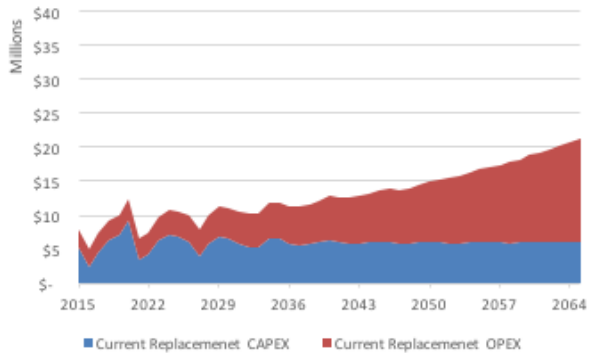


Reliable Management Strategy for ~50% of Replacement Cost

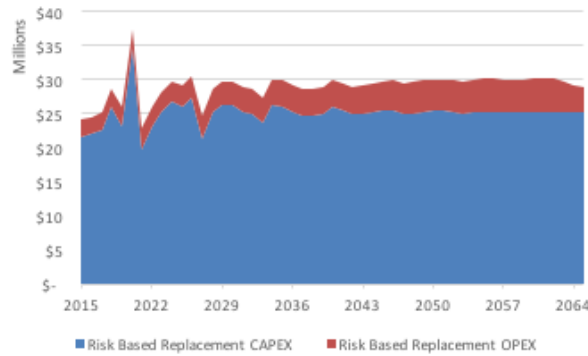
SYSTEMATIC PIPELINE MANAGEMENT PROGRAM



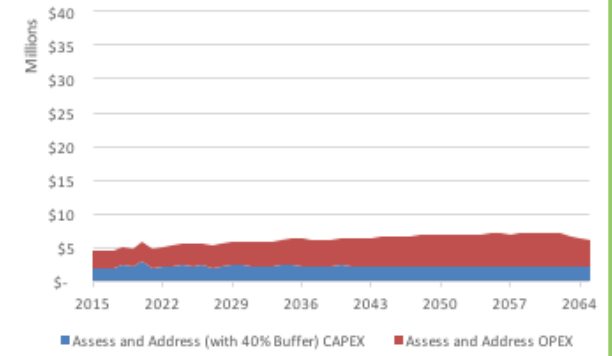
BUDGET STRATEGY AND PROJECTIONS



Current Replacement
Projection



Risk Based Replacement
Program



Assess & Address Program

Asset Management is the most effective option!

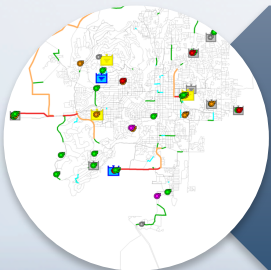
INCORPORATING COMMUNITY FACTORS



Wastewater or Storm Sewer
Improvements



Neighborhood Improvements
& Streetscape Projects



Master Plan
Recommendations

CONCLUSIONS TO DATE



Highest Risk Areas Can Be Managed For Far Less Than Replacement Costs

Combination Of Screening And Higher Resolution Technologies Provide Most Effective Solution

Analysis Shows A Risk Based Pipeline Management Approach Is The Optimized Solution

WHAT'S NEXT?



Begin Rehabilitation Planning And Pilot In Wilde Lake

Incorporate More Advanced Consequence Of Failure

Evaluate Other Replacement Drivers

Develop Data Feedback Loop Using Web-based Asset Management Platform

Provide Semi-annual Reporting On Performance Of Program And System

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QUESTIONS?

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