



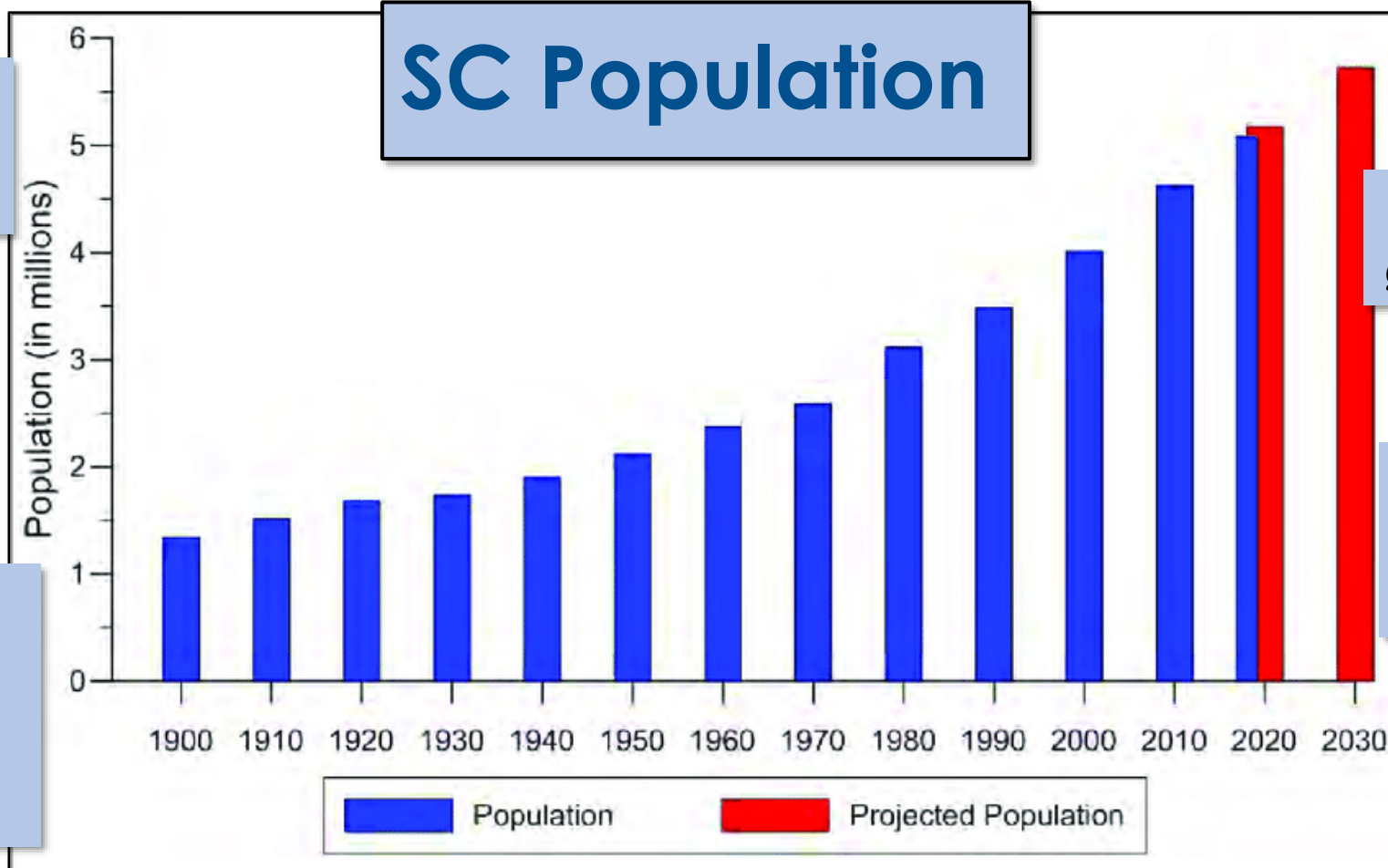
Stormwater Utility Evaluation to Maintain Success

**Southeast Stormwater Association
Annual Conference
October 2023**

Agenda

- ◁ History and Background
- ◁ Challenges and Focus Shifts
- ◁ Desired Future State
- ◁ Strategy Development
- ◁ Takeaways and Next Steps

South Carolina Growth



“Large Southern Cities Lead Nation in Population Growth”

SC Population

“Southern states grew fastest in 2022”

“It’s Not Just Florida, Southeast Region Leads the Nation in Key Growth Metrics”

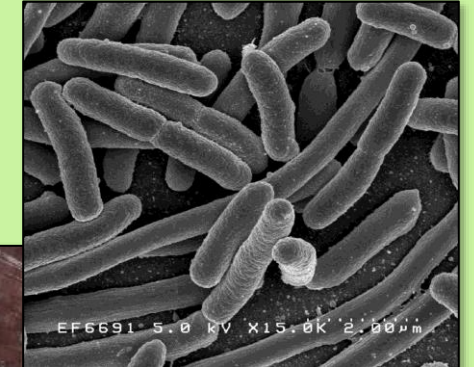
“America’s economy rapidly shifts south”

Storm Water Services

Drain runoff safely to streams



Ensure clean runoff



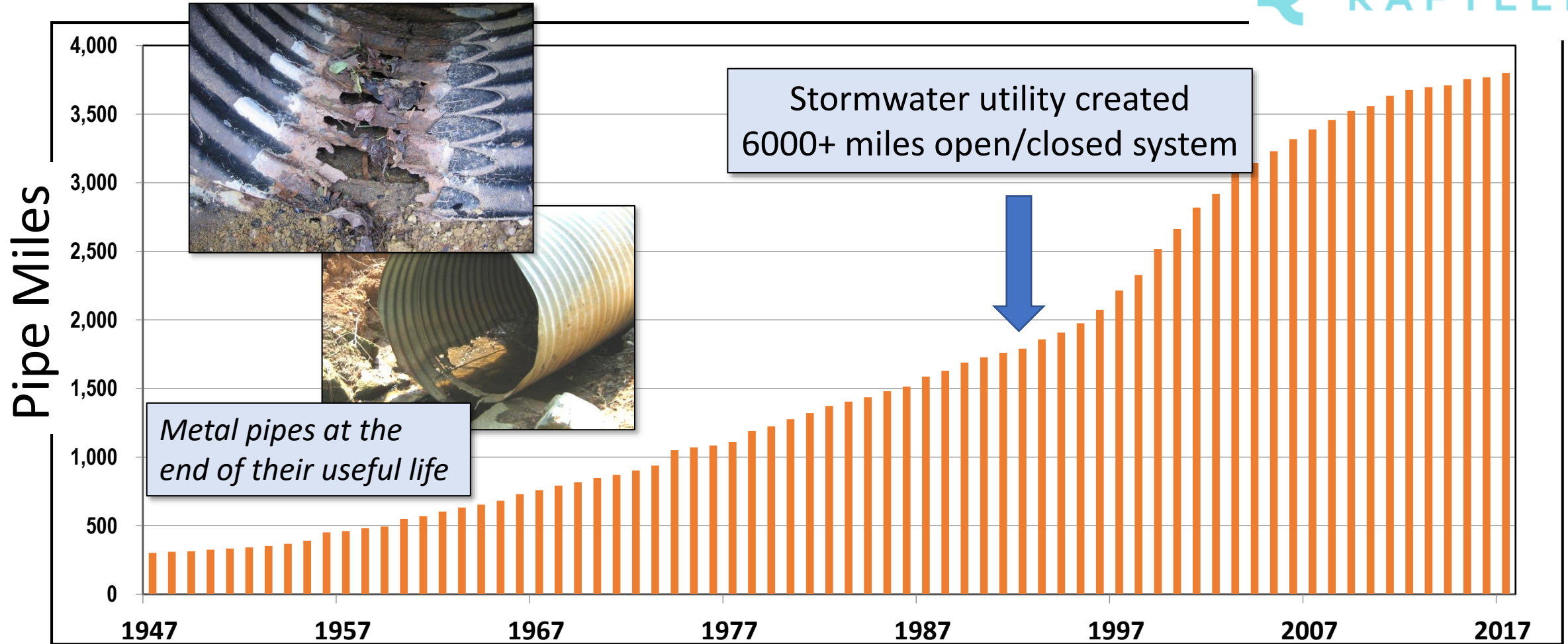
Impacts of Paved Surfaces



- Revised ordinances help slow the creation of downstream problems.
- Most flooding was controlled with capacity enhancements.

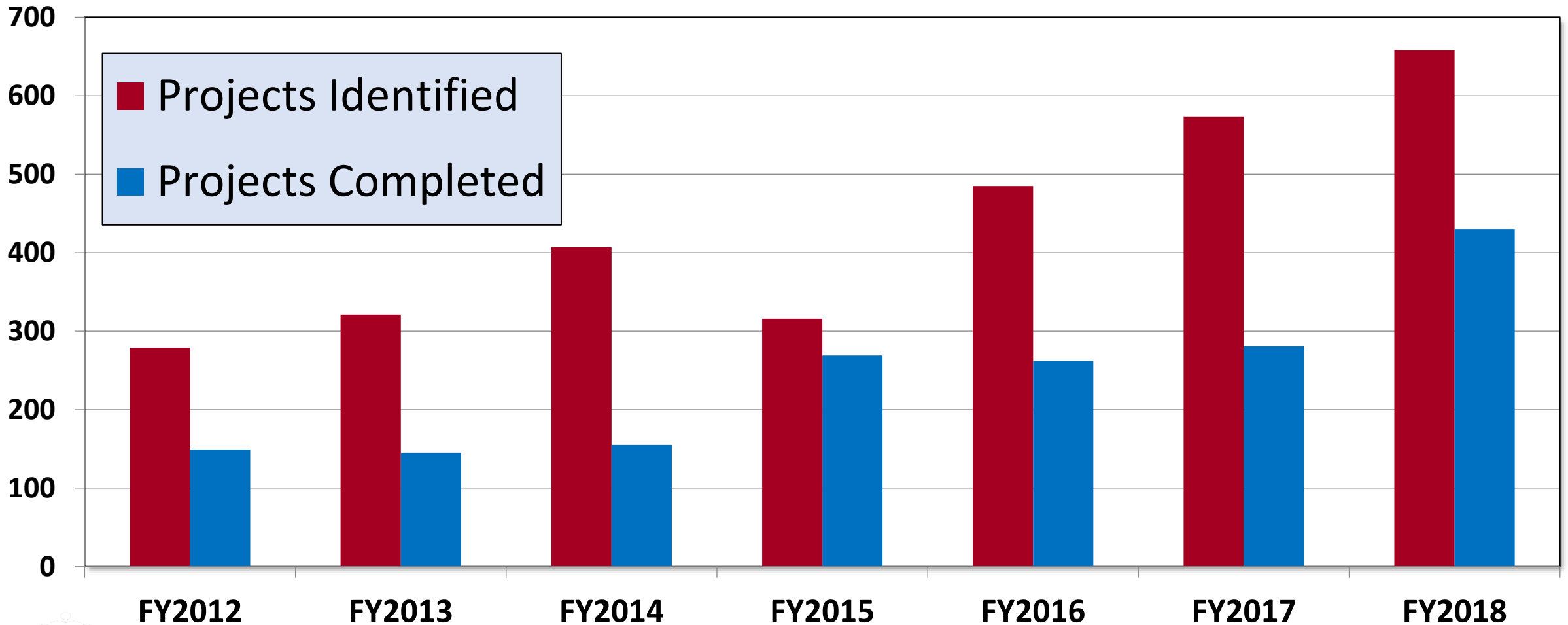
Media coverage of street, house flooding

Aging, Failing, Growing System



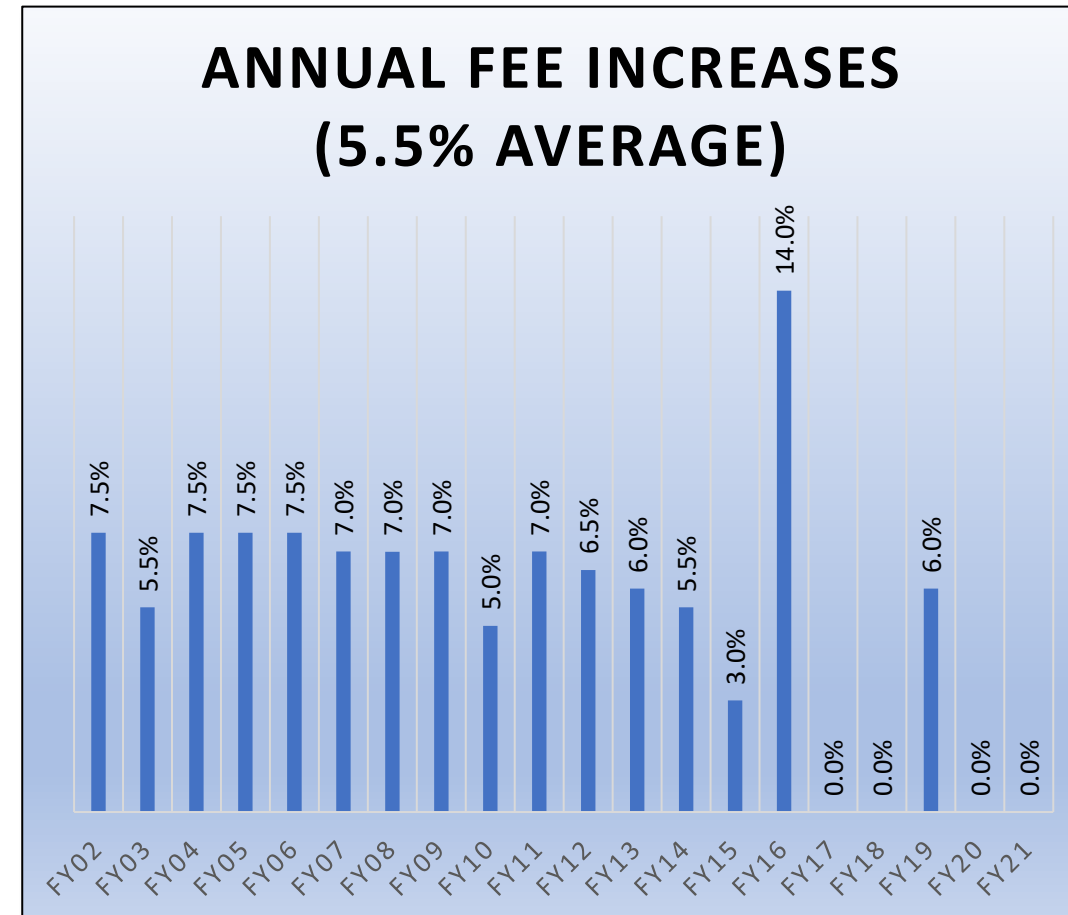
Drainage system doubled since 1993

Community Needs vs. Available Resources



Financial Conditions

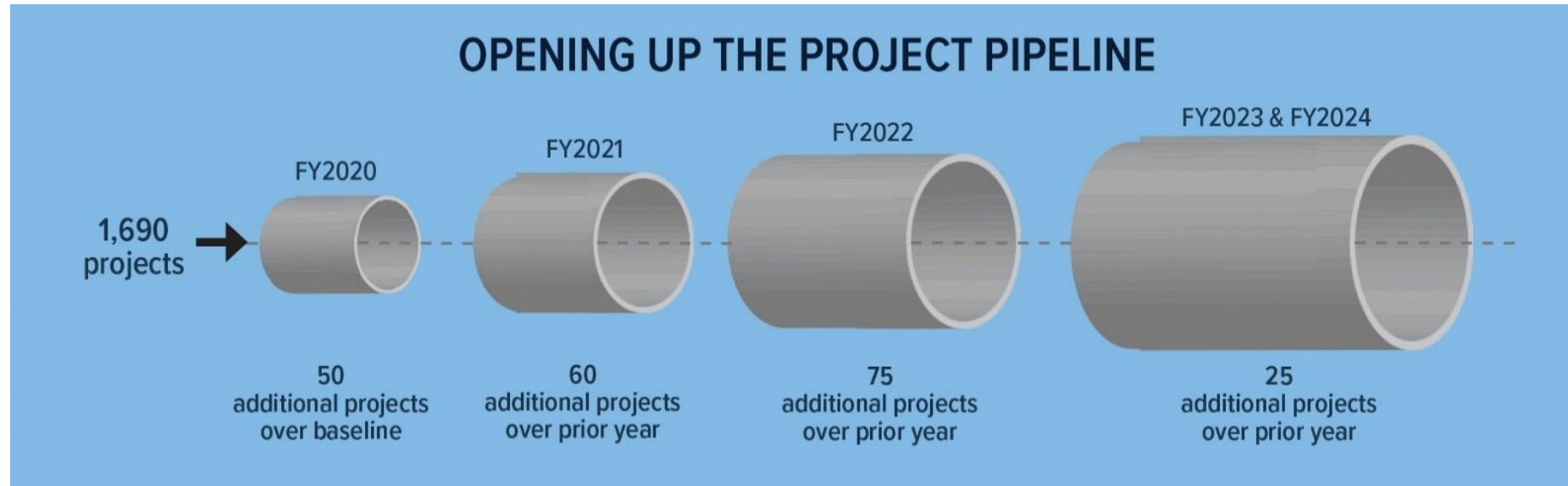
- ▾ Long standing goal to cash fund
- ▾ Low debt level, with debt capacity and history of increases
- ▾ Strong credit rating enabled low-interest rate debt funding



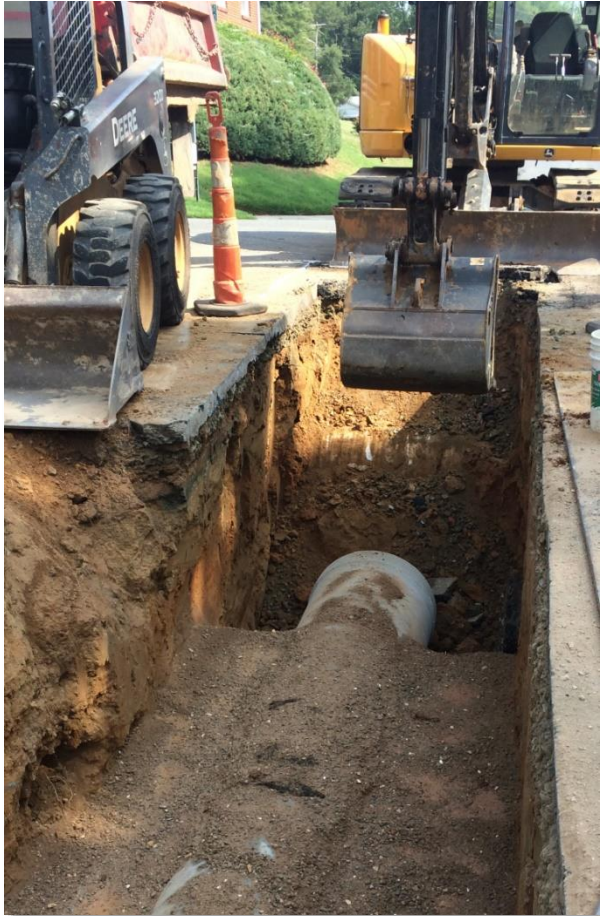
Accelerated Capital Investments

Invest \$514 Million in 5 years on 1690 high priority projects

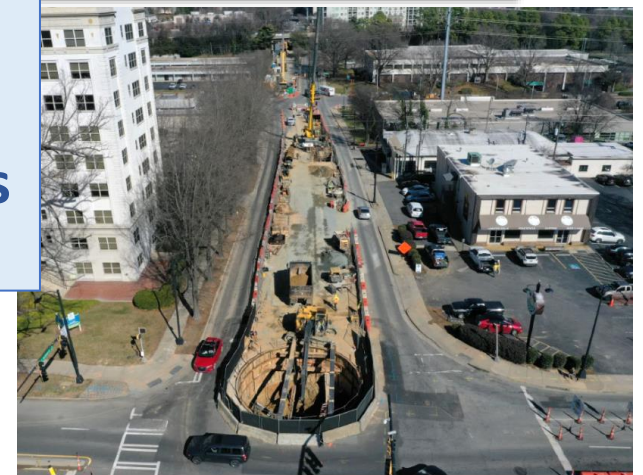
- Focus on higher priority projects in the right-of-way
- Maintain pipes in place to extend their useful life



Investments

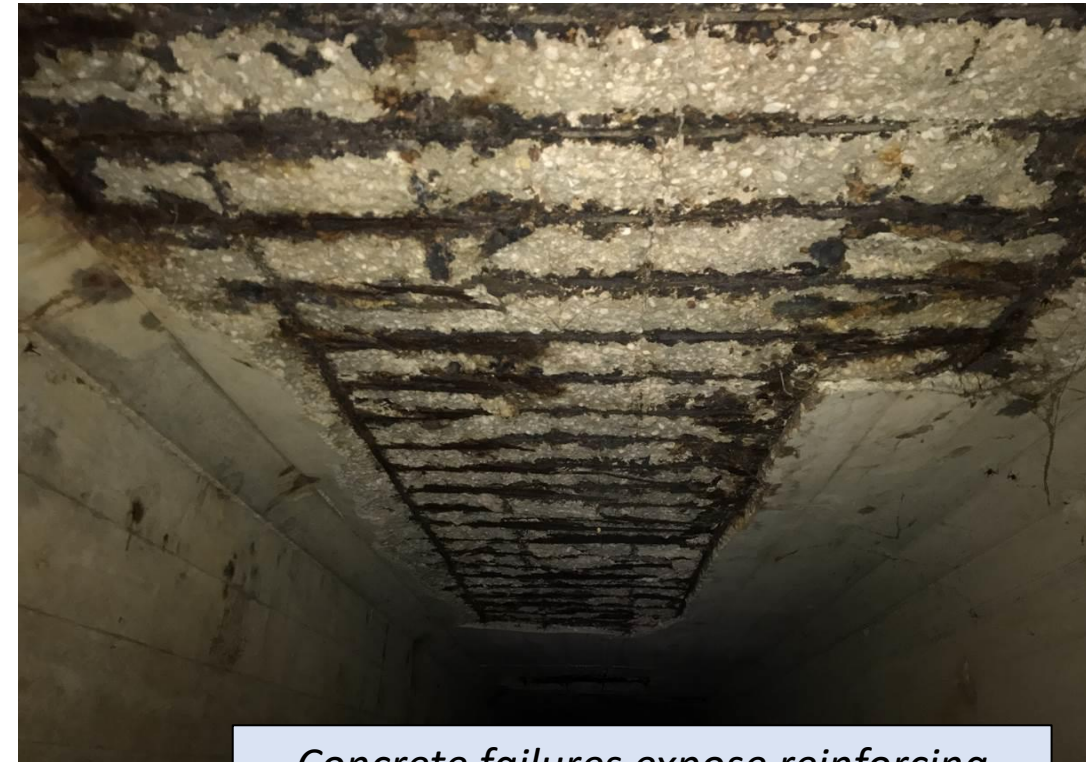


**Surpassed
\$1 Billion
investments**



Current Drivers

- ◁ Accelerated investments nearing completion
- ◁ Flooding problems no longer dominate
- ◁ Desire continued expansion with focus inside ROW
 - Asset management initiatives to address aging infrastructure
 - Watershed restoration investments



Concrete failures expose reinforcing steel in a box culvert

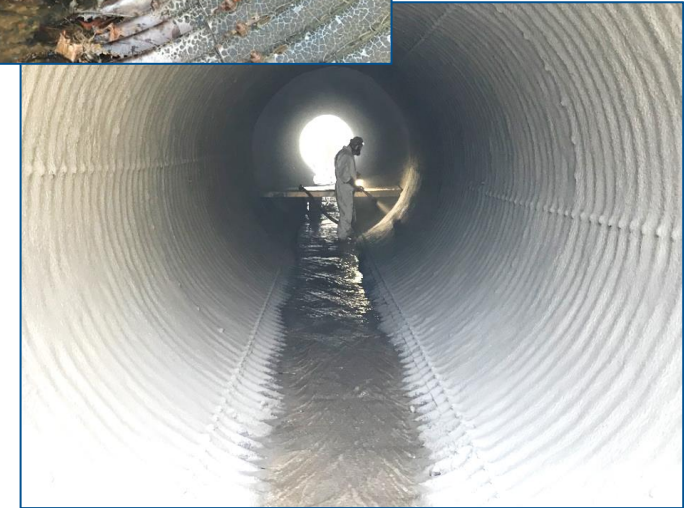
Asset Management Efforts

- ◁ **Critical asset inspections** (started 2016)
 - 48"+ city-maintained drainage systems
- ◁ **Drainage system inspections** (started 2022)
 - 30"+ city-maintained drainage systems (will take added resources)
- ◁ **Targeted capacity modeling** (started 2022)
- ◁ **Inventory collection** (complete 2022)
- ◁ **Purchased assessment tools, cameras, trucks** (2018-2024)



Asset Management Efforts

- ◁ **Increased staffing**
 - 3 FTE (2015) to 19 FTE (2023)
- ◁ **All new repairs are based on risk assessment**
- ◁ **Finding problems early**
- ◁ **Successfully initiating proactive repairs and maintenance**



What is still needed ?

◁ Harness all benefits from Asset Management program

- Increase proactive repairs
- Improve long range capital planning
- Predict life-cycle costs
- Conduct accurate capital needs assessments
- More inspections needed

◁ Additional resource needs



Watershed Restoration Efforts

- ◁ Impaired surface waters
- ◁ Capital investments began in 1999
- ◁ Stream/Wetland Mitigation Bank
 - 120,000 feet of credited stream restoration preservation
 - 22 acres of wetland restoration/enhancement
 - 70 stormwater control measures, most regional
- ◁ Investments hold the line on degradation, long road ahead



What is still Needed ?

- ◁ Began several planning and modeling efforts (2022)
- ◁ Slowly adding staff to produce more projects (2023)
- ◁ Hundreds of stream miles in need of restoration
- ◁ Small percentage of impervious is captured/treated
- ◁ Double investment within 5 years



Utility Evaluation

- ◁ Accelerated investments nearly complete
- ◁ Desire more investment
 - proactive asset management
 - watershed restoration
- ◁ Need to sustain a level of capital and within financial parameters
 - *How to redeploy available financial and staff capacity?*
 - *What investment is needed to support asset-management?*
 - *For watershed restoration?*
 - *What should a 10-year financial plan look like?*

Sought perspective from Raftelis Financial Consultants



Strategic Assistance

- Raftelis provides financial and management consulting services to help local governments thrive
- Raftelis staff have worked with Charlotte Storm Water Services as the program has grown
- Charlotte called on Raftelis to help with visioning for the next chapter of the utility

Rates

Strategic Plan

Visioning and
Future Planning

APRIL 2021

Sustainable Stormwater Management Strategy for a Thriving City



Strategic Plan

- ◁ Defines Mission, Vision, Values, Priorities, Strategies, Measures



Priorities



ENVIRONMENTAL STEWARDSHIP

To protect and improve the quality of streams and other surface waters



INFRASTRUCTURE MANAGEMENT

To continuously assess and improve storm drainage to protect public safety and ensure long-term sustainability



MISSION-DRIVEN WORKFORCE

To ensure a diverse team that is engaged, highly skilled, and committed to excellence



DEVELOPMENT SERVICES

To develop, implement, and enforce regulations that support the city's growth and address drainage needs



COMMUNICATION AND OUTREACH

To enhance understanding of our mission, foster credibility, and encourage community involvement



FINANCIAL STEWARDSHIP

To responsibly manage finances, fund key programs, and maintain customer affordability

Planning Workshops

Workshop 1

◁ High level visioning for post-accelerated capital investment period

Asset Management

- ✓ Develop goals for asset management and proactive O&M

Surface Water Quality

- ✓ Increase spending and execution of projects

Finance

- ✓ Maintain AAA bond rating

Extent of Service

- ✓ Expand private property work

Workshop 2

◁ Dive into specifics

- ✓ Identify funds available to reallocate to meet O&M goals
- ✓ Define steps needed to increase proactive maintenance and O&M spending
- ✓ Develop narrative and focus on story

Financial Considerations

◁ Life Cycle Approach

- Shift from high Capital and low O&M → low Capital and high O&M spending
- Costs – estimate funding through full asset life cycle
 - Initial Cost, Operating Cost, Maintenance Cost, Disposal Cost

◁ Parameters for funding shift from Capital to O&M

- Debt service coverage over 2.0 (required for Aaa Bond rating)
- 250 days cash on hand (city requirement)
- Avoiding maxing out debt and being obligated to raise rates
- ~3.6% annual rate increase

Adaptive Management



Asset Scoring

Condition

- Physical Integrity
- Material

Capacity

- Flood Resilience

Clogging

- Performance

Consequence

- Proximity to roads, structures, driveways
- Size
- Depth

Adaptive Management

Stage 1 – Invest and Learn

Inspections	System Condition Goal	System Risk
<ul style="list-style-type: none"> • Inspect and proactively maintain city-maintained drainage systems 30" or larger 	<ul style="list-style-type: none"> • Fair condition 	<ul style="list-style-type: none"> • Prioritize Critical Assets by Risk • Goal – Medium Risk



Future Stages – Adapt Approach Based on Learning

Inspections	System Condition Goal	System Risk Goal
<ul style="list-style-type: none"> • Expand inspections to include non-city pipes and city-maintained channels 	<ul style="list-style-type: none"> • Good condition 	<ul style="list-style-type: none"> • Low Risk

Telling the Story

- ◁ Storm Water Services has a plan to address stormwater needs through investing in O&M, asset management, preventative maintenance and water quality
- ◁ Storm Water Services is increasing O&M spending to prevent the need for another accelerated capital investment period in the future
- ◁ Asset management, preventative maintenance, and water quality have always been important, but critical issues needed to be prioritized first

Questions

Daryl Hammock, PE Assistant Manager City of Charlotte, Storm Water Services

Katie Cromwell, Senior Manager, Raftelis

